City of Camarillo

Mission Oaks Townhomes Project PBC/GPA 2013-3

Final

Initial Study-Mitigated Negative Declaration

January 2015

rincon

Environmental Scientists Planners Engineers

Mission Oaks Townhomes Project
PBC/GPA 2013-3

Final
Initial Study-Mitigated Negative Declaration

Prepared for:

City of Camarillo
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Camarillo, California 93010
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January 2015

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Appendix D Traffic Study
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INITIAL STUDY

1. Project Title	Mission Oaks Townhomes Project
2. Lead Agency	City of Camarillo 601 Carmen Drive Camarillo, California 93010
3. Contact Person	Steve Mitchell Principal Planner City of Camarillo (805) 388-5370
4. Project Location	The project site is located in the eastern portion of Camarillo, north of US Highway 101 (Ventura Freeway). The project site is bounded by Verdugo Way to the north, Camino Ruiz to the east, Ventura Freeway to the south, and existing commercial development to the west. The project's location in a regional context is shown on Figure 1. An aerial photograph of the site and surrounding land uses is shown on Figure 2.
5. Project Sponsor Name and Address	PB Companies John Belsher 412 Marsh Street San Luis Obispo, CA 93401
6. General Plan Designations	Existing: Industrial Proposed: High Density Residential
7. Zoning	Existing: Limited Manufacturing (LM) Proposed: Residential Planned Development (RPD-30U)
8. Project Description	The proposed project would amend the City's General Plan land use designation for the project site from Industrial to High-Density Residential. In addition the zoning designation would be changed from Limited Manufacturing (LM) to Residential Planned Development, 30 units per acre (RPD-30U). The project proponent is proposing 129 multi-family residential units on an 8.66 acre site. The project includes a total of 22 residential buildings, a pool, cabana, spa, and other recreation areas. Primary vehicle access would be provided from two locations on Camino Ruiz. Secondary access would be provided by a connection to the existing surface parking lot drive aisle to the west adjacent to Pardee Plaza (CPD 139).

The site would be divided into two neighborhoods, the north neighborhood and the south neighborhood. The north neighborhood consists of 9 buildings designated for 2-story townhomes. These buildings are oriented around a network of drive aisles. The primary access route is proposed to traverse the center of the site and would connect to Camino Ruiz on the east and the existing commercial shopping center to the west. The south neighborhood consists of 13 buildings that are designed as three-story townhomes. Two of the buildings in the southern neighborhood are oriented parallel to Camino Ruiz, two buildings are oriented parallel to the western property line, six buildings are located in the center portions, and three buildings are oriented parallel to the southern border of the site, approximately 85 feet north of US 101 (Ventura) Freeway. A retention basin is proposed along the southern boundary of the site to allow for on-site storm water retention.

All of the proposed buildings have a Spanish architectural style with balconies on the upper floors. Two car garages are proposed on the bottom floor of the dwellings with an additional 53 guest parking spaces provided along drive aisles for a total of 311 parking spaces. The maximum building height is approximately 43 feet.

9. Surrounding Land Uses and Setting:

The project site is surrounded by existing commercial development to the west and north, and existing industrial to the east. Agricultural operations are located to the south of the project site across the US-101 Freeway. Commercial uses in the project vicinity include a hotel, restaurants, retail sales, and offices. The nearest residential development is located approximately 720 feet north of the project site along Adolfo Road and approximately 1,200 feet southwest of the project site along Pleasant Valley Road. The Adolfo Camarillo High School campus is located approximately 900 feet west of the project site.

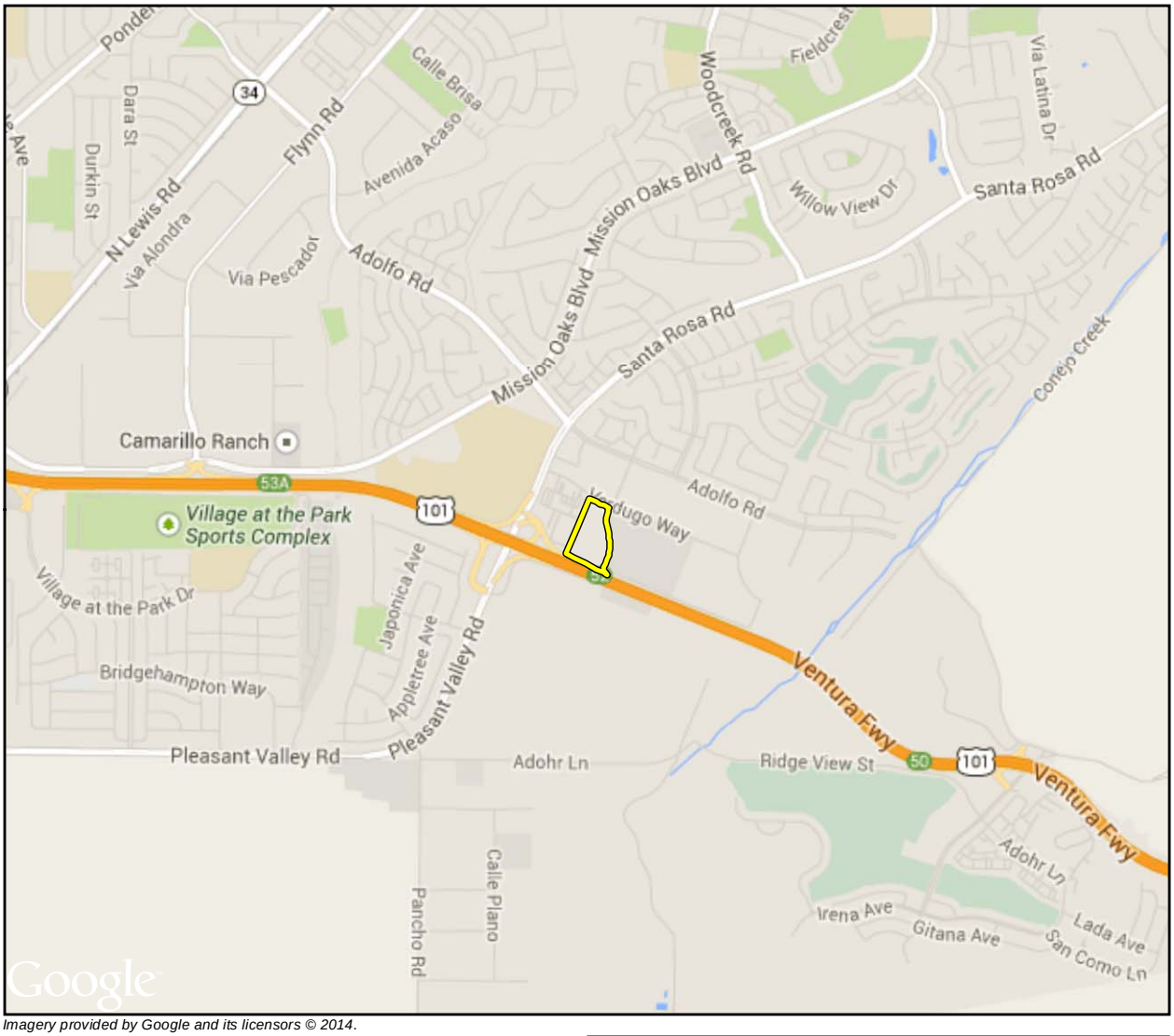
10. Required Entitlements:

The project requires approval by the City of Camarillo. The entitlements required from the City include:

- *General Plan Amendment*
- *Zone Change*
- *Tentative Subdivision Map*
- *Residential Planned Development Permit*

11. Other Public Agencies Whose Approval is Required:

The City of Camarillo is the lead agency and is the only public agency with discretionary approval over the project.



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Project Boundary

N

0 1,250 2,500
Feet

Regional Location

Figure 1

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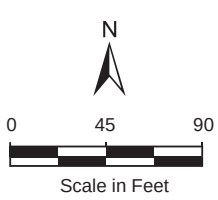
Site Vicinity

Figure 2



Notes:

1. Site plan is for conceptual purposes only.
2. Site plan must be reviewed by planning, building, and fire departments for code compliance.
3. Base information per civil engineer.
4. Civil engineer to verify all setbacks and grading information
5. Building Footprints might change due to the final design elevation style.
6. Open space area is subject to change due to the balcony design of the elevation.
7. Building setbacks are measured from property lines to building foundation lines.

Site Plan

Figure 3

Source: William Hezmalhalch Architects, Inc. 2014

Front Elevation - 3-Story Townhomes

Front Elevation - 2-Story Townhomes

Front Elevation - Buffer Towns

© 2014 William Hezmalhalch Architects, Inc.

Rear Freeway Elevation - Buffer Towns

Source: *William Hezmalhalch Architects, Inc. 2014*

Proposed Building Elevations

Figure 4a

0 8 16 24

Rear Freeway Elevation - Buffer Towns

© 2014 William Hezmalhalch Architects, Inc.

Rear Freeway Elevation with Access Gate - Buffer Towns

Source: *William Hezmalhalch Architects, Inc. 2014*

Proposed Building Elevations

Figure 4b

ENVIRONMENTAL FACTORS AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Potentially Significant" or "Potentially Significant Unless Mitigation Incorporated" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forest Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☐ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☒ Utilities/Service Systems	☒ Mandatory Findings of Significance

DETERMINATION

On the basis of this initial evaluation:

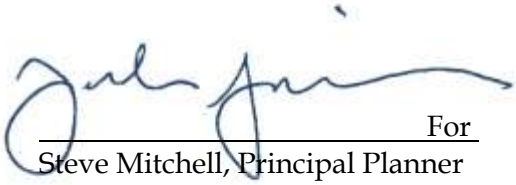
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potential significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



For

Steve Mitchell, Principal Planner
City of Camarillo

1/21/2015
Date

ENVIRONMENTAL CHECKLIST

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
I. Aesthetics				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

a, b, c) Scenic views in Camarillo consist primarily of the hills and mountains located north and south of the project site. The project site is a vacant lot that is currently zoned for Limited Manufacturing (LM) and it is surrounded by commercial and industrial development. The project site is bordered to the south by the Ventura Freeway, which is identified as a scenic corridor by the Community Design Element of the City of Camarillo General Plan. The land located directly south of the project site, south of the Ventura Freeway, is utilized for agricultural production. The undeveloped slopes of the Santa Monica Mountains are located further to the south and east. Existing commercial and industrial buildings surround the property to the west, north, and east. Figures 5 and 6 include photographs of the project site and the immediately surrounding area.

Development of the proposed project would alter the existing character of the site by grading and constructing multi-family residential dwellings of varying heights, with a maximum height of 43 feet. Due to the level of existing development surrounding the project site, views through the project site are already limited. The limited background views south towards the Santa Monica Mountains and north towards the Las Posas Hills would not be significantly impacted by the proposed project given the infill nature of the project and the surrounding level of urban development. In addition, the project site has been previously graded and is relatively flat and therefore does not contain scenic vistas or scenic resources. **Impacts would be less than significant.**

The proposed project site is located within the Heritage Zone in the City of Camarillo Community Design Element. Thus, the proposed project design would need to be of similar character, scale, massing and architecture with surrounding development and according to design themes identified in the Community Design Element for buildings in the Heritage Zone.

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Site Photos Key Map

Figure 5

1. View looking East from Western Portion of Site

2. View looking Northeast from Western Portion of Site

3. View looking west from Eastern Portion of the Site

4. View looking Southwest from Eastern Portion of Site

5. View looking Southeast from Eastern Portion of Site

6. View looking South from Northern Portion of Site

Site Photos

Figure 6

Based upon a review of preliminary architectural plans, the proposed Spanish or Mediterranean architectural style is consistent with the style of the surrounding commercial and industrial development.

Additionally, the buildings along the southern boundary of the property are designed in an architectural style similar to the commercial office buildings that are located adjacent to the site, along the Ventura Freeway. This would establish a consistent architectural design theme along the freeway corridor. Thus, development of the proposed project would not substantially degrade the visual character of the site and its surroundings. **Impacts would be less than significant.**

d) The project site is currently surrounded by commercial and light industrial buildings. There are no residential uses directly adjacent to the project site, so the proposed project would not expose adjacent residences to substantial increases in light or glare. Glare from vehicles parked on-site or from building materials can be effectively reduced by the installation of non-reflective building materials and parking lot landscaping. Parking lot and building mounted lighting can be sufficiently limited through the use of "cut-off" parking lot lighting fixtures and appropriately shielded building mounted light fixtures. Section 19.16.210 of the Camarillo Municipal Code requires that "lighting shall be focused, directed and so arranged as to prevent glare and direct illumination on streets or adjoining property." **Although the project could incrementally increase the amount of light or glare perceived on the project site, impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
II. <u>Agriculture and Forest Resources</u>				
Would the project:				
a) Convert Prime Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
II. Agriculture and Forest Resources				
Would the project:				
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	☐	☐	☐	☒

a) The project site has been previously disturbed and the surrounding areas have been developed with residential or commercial retail uses. Farmland Mapping and Monitoring Program (FMMP) maps prepared by the California Department of Conservation were reviewed and confirmed that neither the project site nor adjacent land are designated Prime Farmland, Unique Farmland, or Farmland of Statewide Importance by the FMMP (FMMP, 2010). **No impact would occur.**

b) The project site is zoned Limited Manufacturing (LM) and therefore is not eligible to be enrolled in a Williamson Act contract. Land to the south of the proposed project, on the opposite site of the Ventura Freeway, is zoned for agriculture and is currently in agricultural production. However, the project would not disturb this land and the Ventura Freeway would provide an approximate 165 foot buffer between the project site and the agricultural uses. The proposed project would therefore not conflict with any zoning designations designed to promote agriculture. **No impact would occur.**

c-e) The site is not zoned for timber or agricultural production. The surrounding properties are not zoned for timber production. The properties to the south are zoned for agricultural production, however, as noted above, the Ventura Freeway provides a 165 foot buffer between the site and the neighboring agricultural uses. The proposed project would therefore not conflict with any zoning designations designed to preserve timber or agricultural resource preservation. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
III. Air Quality				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
III. Air Quality				
Would the project:				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Regulatory Setting

The South Central Coast Air Basin is comprised of three air districts: the San Luis Obispo County APCD; the Santa Barbara County APCD; and the Ventura County APCD. The proposed project would be under the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD). The California Air Resources Board (CARB) is responsible for regulating mobile emission sources (vehicles) and the Ventura County Air Pollution Control District (VCAPCD) regulates stationary sources. For purposes of identifying established air quality impact thresholds, the VCAPCD considers operational air quality impacts to be significant if a project would generate more than 25 pounds per day of Reactive Organic Compounds (ROC) or Nitrogen Oxides (NOx). The VCAPCD has not adopted significance thresholds for construction-related emissions since such emissions are temporary.

The physical and regulatory air quality setting for the Camarillo area is described in detail in the Ventura County 2007 Air Quality Management Plan (2007 AQMP) and the Ventura County Air Quality Assessment Guidelines (October 2003). This plan presents Ventura County's: 1) strategy to attain the federal 8-hour ozone standard; 2) attainment demonstration for the federal 8-hour ozone standard; 3) reasonable further progress demonstration for the federal 8-hour ozone standard; and, 4) transportation conformity emissions budget for federal transportation conformity purposes. The 2007 AQMP also presents Ventura County's 2003 – 2005 Triennial Assessment and Plan Update required by the California Clean Air Act of 1988 (CCAA).

Thresholds of Significance

The threshold guidelines used to analyze air quality impacts are derived from those of the VCAPCD. The most recent VCAPCD comprehensive publication regarding air quality

assessment is the Ventura County Air Quality Assessment Guidelines (October 2003). The VCAPCD's Air Quality Assessment Guidelines recommend significance thresholds for projects proposed in Ventura County. Under these guidelines, projects that generate more than 25 lbs per day of ROG or NOX are considered to jeopardize attainment of the federal ozone standard and thus would have a significant adverse impact on air quality.

The VCAPCD has not established quantitative thresholds for particulate matter. However, a project that may generate fugitive dust emissions in such quantities as to cause injury, detriment, nuisance, or annoyance to any considerable number of persons, or which may endanger the comfort, repose, health, or safety of any such person, or which may cause or have a natural tendency to cause injury or damage to business or property is considered to have a significant air quality impact by the VCAPCD. This threshold is particularly applicable to the generation of fugitive dust during construction grading operations.

The VCAPCD's 25 lbs. per day thresholds for ROG and NOX are not intended to be applied to construction emissions since such emissions are temporary. For construction impacts, the VCAPCD recommends minimizing fugitive dust through various dust control measures. Therefore, as outlined in the VCAPCD's Guidelines for the Preparation of Air Quality Impact Analyses, the project's impact is considered significant if it would:

- *Generate daily emissions exceeding 25 lbs. of reactive organic compounds (ROG) or nitrogen oxides (NO_x);*
- *Cause an exceedance or making a substantial contribution to an exceedance of an ambient air quality standard;*
- *Directly or indirectly cause the existing population to exceed the population forecasts in the most recently adopted AQMP;*
- *Be inconsistent with goals and policies of the Ventura County AQMP and emit greater than two lbs. of ROG nor NOx per day;*
- *Create a human health hazard by exposing sensitive receptors to toxic air emissions; or*
- *Create objectionable odors affecting a substantial number of people.*

a) Vehicle use, energy consumption, and associated air pollutant emissions are directly related to population growth. The population forecasts employed for the Ventura County Air Quality Management Plan (AQMP) are used to estimate future emissions and devise appropriate strategies to attain state and federal air quality standards. The VCAPCD adopted an updated AQMP in May 2008. When population growth exceeds the forecasts upon which the AQMP is based, emission inventories could be surpassed, which could affect attainment of standards.

Per the VCAPCD Assessment Guidelines, project consistency with the AQMP can be determined by comparing the actual population growth in the county with the projected growth rates used in the AQMP. However, if there are more recent population forecasts that have been adopted by VCOG where the total county population is lower than that included in the most recently adopted AQMP population forecasts, lead agencies are encouraged use the more recent VCOG forecasts for determining AQMP consistency. VCOG, in turn, bases some population projections using South Coast Association of Government (SCAG) growth rates, such as in its 2040 Population Forecast released in May 2008. For the purpose of this analysis,

the SCAG population forecast for Camarillo in 2015 will be used as it is the closest projection year data available for comparison with the current population.

According to data provided by the California Department of Finance (DOF), the population of the City of Camarillo is 66,752 and the City's average household size is 2.72 residents (DOF, 2014). Using the City's average household size of 2.72 persons per household, the project could increase the City's overall population by approximately 395 residents. SCAG estimates that the population of Camarillo will continue to grow to 73,030 persons by the year 2015. Thus, the proposed project would not cause the population of Camarillo to exceed the forecasted growth rate. Therefore, the project would not conflict with implementation of an air quality plan. **No impact would occur.**

b, c) Implementation of the proposed project would generate both temporary construction and long-term operational emissions. Emissions generated during construction are typically associated with the operation of heavy diesel equipment and grading. Operational emissions would primarily be dependent upon vehicular traffic increases from school uses. A discussion and analysis of both construction- and operational-phase emissions is provided below.

Construction. Construction activity associated with the proposed project would cause emissions of various air pollutants. Ozone precursors NO_x and CO would be emitted by the operation of construction equipment, while fugitive dust (PM_{10}) would be emitted by activities that disturb the soil, such as grading and excavation, road construction and building construction. Construction of the project's anticipated to take approximately one year to complete. Table 1 illustrates the maximum unmitigated emissions associated with construction of the project.

Table 1
Maximum Daily Unmitigated Construction On-Site Emissions Estimates (lbs/day)

Emission Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
Proposed Project Construction	13.5	57.0	21.3	12.8

Source: CalEEMod emissions output. See Appendix A for calculations.

Although impacts would be less than significant because the VCAPCD has not adopted significance thresholds for construction-related emissions, the VCAPCD suggests mitigation when emissions exceed 25 lbs/day for ROG or NOx. As indicated above in Table 1, construction emissions would not exceed the 25 lbs/day suggested mitigation limit for ROG. However, construction related air quality impacts resulting from NOx emissions would exceed the 25 lbs/day suggested mitigation limit for NOx. **Due the temporary nature of these construction activities, impacts would be less than significant.**

Operational. Long-term emissions generated by the proposed project would primarily be from vehicle trips related to school uses. The long-term air quality emissions associated with the proposed project were estimated using the CalEEMod air quality model. Project emissions estimates as determined in the modeling analysis are presented in Table 2. Mobile emissions are those associated with vehicle trips, while the use of natural gas and landscaping maintenance equipment are included in the area emissions.

The proposed project would not exceed the operational thresholds for ROG or NOX and thus impacts would be less than significant.

Table 2
Estimated Operational Emissions (lbs/day)

Source	Pollutants (lbs/day)	
	ROG	NOx
Area Source	3.9	0.1
Energy	0.1	0.5
Vehicular	3.7	9.2
Total Operational Emissions	**7.7**	**9.9**
VCAPCD Threshold	*25*	*25*
Exceeds Threshold?	***No***	***No***

Source: CalEEMod. (see Appendix A for data sheets)

d) Health Risk Assessment. The California Air Resources Board (CARB) currently recommends that local agencies avoid siting new sensitive land uses within 500 feet of freeways or high-volume roadways (CARB, 2005). The primary concern with respect to freeway adjacency is the long-term effect of diesel exhaust particulates, a toxic air contaminant, on sensitive uses. The primary sources of diesel exhaust particulates are heavy-duty trucks on high-volume arterial roadways. In order to assess the risk associated with siting the proposed townhomes adjacent to the Ventura Freeway, a Health Risk Assessment was prepared (Appendix B).

Health risks for the proposed project were determined using eight receptors in the HARP model. The locations and height of the receptors were based on the property boundaries and the proposed building heights. Receptors were located at the point closest to Ventura Freeway where residents would reside, the point furthest from Ventura Freeway where residents would reside, and a center point where residents would reside. For each of the three distances from Ventura Freeway, receptors on each potential floor of residential space were assessed, resulting in a total of eight receptors. The results of the health risk modeling are shown in Table 3, below. The risk for residents was very similar at each floor, so the maximum is included in this report and full results can be viewed in Appendix B.

Table 3
Potential Health Risks at Receptors

	Excess Cancer Risk	Exceed Criterion? (1E-05)	OEHHA Chronic Hazard Quotient[1]	Exceed Criterion? (>1)
Sensitive Receptor 0628 – Closest to Freeway, Third Floor				
9-year Resident				
Adult	2.53E-06	No	1.36E-03	No
Child	3.74E-06	No	--	--
30-year Adult	8.44E-06	No	1.36E-03	No
70-year Lifetime	1.97E-05	**YES**	1.36E-03	No
Sensitive Receptor 0631 – Center of Site, Third Floor				
9-year Resident				
Adult	3.31E-06	No	1.78E-03	No
Child	4.89E-06	No	--	--

Table 3
Potential Health Risks at Receptors

	Excess Cancer Risk	Exceed Criterion? (1E-05)	OEHHA Chronic Hazard Quotient[1]	Exceed Criterion? (>1)
30-year Adult	1.10E-05	**YES**	1.78E-03	No
70-year Lifetime	2.57E-05	**YES**	1.78E-03	No
Sensitive Receptor 0633 – Furthest from Freeway, Second Floor				
9-year Resident				
Adult	1.76E-06	No	9.45E-03	No
Child	2.60E-06	No	--	--
30-year Adult	5.87E-06	No	9.45E-03	No
70-year Lifetime	1.37E-05	**YES**	9.45E-03	No

Source: Health Risk Assessment, Appendix B
1: Note that chronic risk does not change with increase in years as calculation terms cancel out.

The proposed residential development on the site would potentially expose on-site residents to significant carcinogenic health risks associated with vehicle emissions, specifically diesel exhaust particulates, based upon VCAPCD health risk criteria**. Impacts would be potentially significant, unless mitigated. After implementation of mitigation measures AQ-1 through AQ-3, impacts to on-site residents would be less than significant.**

AQ-1 **Ventilation Filter Screens.** The following note shall appear on building permits issued for the site and compliance shall be verified prior to issuance of final occupancy permits for the site.

- Forced air ventilation with filter screens on outside air intake ducts shall be provided for all residential units proposed on the project site. The filter screens shall be capable of removing at least 95% of the particulate matter including fine particulate matter (PM<2.5 micron).

AQ-2 **Resident Notification.** A brochure notifying the future residents of the property owner's responsibility for maintaining the filter screens shall be prepared and provided at the time of occupancy. A sample of this brochure shall be provided to the City for review and approval prior to issuance of final occupancy permits for the Project. In addition, a notice of the diesel particulates risk hazard and the need for screen maintenance shall be placed in the property title.

AQ-3 **Weatherproofing.** The following note shall appear on all building permits issued for the project site.

- Windows and doors shall be fully weatherproofed with caulking and weather-stripping that is rated to last at least 20 years.

The nearest sensitive receptor, (Courtyard Hotel), is located approximately 50 feet west of the project site. The nearest residential development is located approximately 720 feet north of the project site along Adolfo Road and approximately 1,200 feet southwest of the project site along Pleasant Valley Road. The Adolfo Camarillo High School campus is located approximately 900 feet west of the project site. **Since on-site operational emissions would not exceed locally**

established thresholds and land uses are sufficiently setback from the US 101 Freeway, the impact to nearby sensitive receptors would be less than significant.

Although construction emissions do not have locally established thresholds, the suggested threshold for emissions by VCAPCD during construction are exceeded for NO_x and may potentially have an impact on nearby sensitive receptors. Therefore, Mitigation Measures AQ-4 and AQ-5 are required to address the temporary impacts associated with construction emissions. **With incorporation of these mitigation measures, emissions of PM_{10} and $PM_{2.5}$ during the site preparation and grading phases of construction would be reduced to a less than significant level.**

AQ-4 **Construction Equipment Controls.** The following shall be implemented during construction to minimize emissions of ROG, NO_x and PM associated with off-road diesel construction equipment.

- *Heavy-duty diesel-powered construction equipment shall be compliant with federally mandated clean diesel engines (EPA Tier 4) shall be utilized wherever feasible.*
- *Construction contractors shall minimize equipment idling time throughout construction. Engines shall be turned off if idling would be for more than five minutes.*
- *Equipment engines shall be maintained in good condition and in proper tune as per manufacturers' specifications.*
- *The number of pieces of equipment operating simultaneously shall be minimized.*
- *Construction contractors shall use alternatively fueled construction equipment (such as compressed natural gas, liquefied natural gas, or electric) when feasible.*
- *The engine size of construction equipment shall be the minimum practical size.*

AQ-5 **Fugitive Dust Control Measures.** The following shall be implemented during construction to minimize fugitive dust emissions:

- *Water trucks must be used during construction to keep all areas of vehicle movements damp enough to prevent dust from leaving the site. At a minimum, this will require three daily applications (once in the morning, once at midday and once at the end of the workday). The construction site watering frequency shall be increased whenever the sustained wind speed exceeds 15 mph. All clearing, grading, earth moving, or excavation activities must cease during periods of high winds (i.e., greater than 25 mph averaged over one hour) so as to prevent excessive amounts of dust.*
- *Soil with 5% or greater silt content that is stockpiled for more than two days must be covered, kept moist, or treated with soil binders to prevent dust generation.*

- *Trucks transporting material must be tarped from the point of origin or must maintain at least two feet of freeboard.*
- *Soil stabilizers must be applied to unpaved roads to prevent excess amounts of dust.*
- *All material excavated or graded must be treated with soil binders or must be sufficiently watered at least three times daily with complete coverage, preferably in the morning, midday and after work is done for the day.*
- *Ground cover must be replaced in disturbed areas as quickly as possible.*
- *The contractor must provide adequate loading/unloading areas that limit track-out onto adjacent roadways through the utilization of wheel washing, rumble plates, or another method achieving the same intent.*
- *All material transported off-site must be securely covered to prevent excessive amounts of dust.*
- *All property owners and building occupants located within 500 feet of the construction site must be sent a notice regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet must also be posted in a prominent and visible location at the construction site, and must be maintained throughout the construction process. All notices and the signs must indicate the dates and duration of construction activities, as well as provide a telephone number where interested parties can inquire about the construction process and register complaints.*
- *These control techniques must be indicated in project specifications. Compliance with the measure must be subject to periodic site inspections by the City.*

e) The proposed project would be used for residential purposes and would not generate objectionable odors. **No impact related to odors would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IV. <u>Biological Resources</u>				
Would the project:				
a) 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 California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IV. Biological Resources				
Would the project:				
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) 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?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

a) The term 'special status' refers to those plant and animal species that have been designated by the federal or state resource agencies as rare, threatened, or endangered. Plant species listed by the California Native Plant Society (CNPS) or other species that are afforded additional protections under regional or local policies or plans are also included in this assessment. A review of the United States Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) shows that the proposed project site is not located in any critical habitat map. A review of the California Natural Diversity Database (CNDDB) Biogeographic Information and Observation System (BIOS) Map Reviewer provides a list of species in the Camarillo Quadrangle. Within the Camarillo Quadrangle, the project site is located in the eastern portion. The CNDDB BIOS species list identifies 28 species of birds, plants, reptiles, fish, etc. within the Camarillo quadrangle. Of these 28 species, the California condor (bird), least Bell's vireo (bird), coastal California gnatcatcher (bird), and Verity's dudleya (plant) are either endangered or threatened.

The project site has been previously graded and does not contain any special status plant species. However, the proposed project site contains several large trees located along the northerly and eastern border of the project site. These trees may provide suitable nesting habitat for a variety of bird species that are afforded protection under the federal Migratory Bird Treaty Act (MBTA – 16 United State Code Section 703-711). The proposed project has potential to impact migratory and other bird species if construction activities occur during the nesting season, which is typically February 15 through September 15. Construction-related disturbances could result in nest abandonment or premature fledging of the young. Suitable habitat may be present for burrowing owls in the non-native grassland. Overwintering burrows owls have been recorded at the Camarillo Airport, approximately 5 miles to the southwest. However, given that the habitat surrounding the project site consists of urban development, burrowing owls would likely only occur on-site in low numbers and as winter transients. **Therefore, the proposed project could result in potentially significant impacts unless sufficient mitigation is incorporated. Therefore, Mitigation Measure BIO-1(a) and BIO-1(b) would be required to reduce any potential impacts to migratory and resident nesting bird species and burrowing owl to less than significant levels.**

BIO-1(a) **Nesting Birds.** If vegetation clearing or other project construction is to be initiated during the bird breeding season (February 1 through August 31), pre-construction/grading surveys shall be conducted by a qualified biologist. Surveys shall cover the entire site and shall be conducted no more than three days prior to the initiation of clearance/construction work. If a nesting bird or special-status species is located, consultation with the local CDFW representative shall occur to determine what avoidance actions may be taken. If any active *non-raptor* bird nests are found, a suitable buffer area (varying from 250-300 feet), depending on the particular species found, shall be established from the nest, and that area shall be avoided until the nest becomes inactive (vacated). If any active *raptor* bird nests are found, a suitable buffer area of typically 250-500 feet from the nest shall be established, and that area shall be avoided until the nest becomes inactive (vacated). The limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area by a qualified biologist hired by the project proponent and endorsed by the City of Camarillo's Department of Community Development. Encroachment into buffers around active nests must be conducted at the discretion of a qualified biologist. The applicant shall record the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of nesting birds.

BIO-1(b) **Burrowing Owl Pre-construction Surveys, Avoidance, and/or Exclusion.** A qualified biologist shall conduct pre-construction clearance surveys prior to ground disturbance activities within all suitable burrowing owl habitat to confirm the presence/absence of burrowing owls. The surveys shall be consistent with the recommended survey methodology provided by CDFW (2012).

Clearance surveys shall be conducted within 14 days prior to construction and ground disturbance activities. If no burrowing owls are observed, no further actions are required.

If burrowing owls are detected during the pre-construction clearance surveys, avoidance buffers shall be implemented in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993) minimization mitigation measures. If Burrowing owls are detected, prior to ground disturbance, coordination with the CDFW by a qualified biologist shall occur to establish the appropriate avoidance buffer distances specific for the project's activities and level of expected disturbance.

If avoidance of burrowing owls is not feasible, a Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall be developed by a qualified biologist in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993). The Plan shall be provided to the applicable local CDFW office prior to implementation. A qualified biologist shall coordinate with the CDFW to determine the appropriate exclusion methods (passive or active relocation) for the project to relocate burrowing owls to a suitable offsite location. Relocation of owls can only occur during the non-breeding season.

A report of all pre-construction survey efforts shall be submitted to the Camarillo Planning Department and CDFW within 30 days of completion of the survey effort to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys and monitoring. The report shall also include each observed special status animal, the UTM coordinates and habitat descriptions. If relocation is required, separate reporting as required within the Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall also be submitted to the Camarillo Planning Department and CDFW.

b,c) A review of the USFWS National Wetlands Inventory shows that the project site does not contain any wetland habitat. Physical inspection of the site has confirmed that the project site does not contain any riparian habitats, federally protected wetlands and/or drainages, or other sensitive natural communities. Therefore, implementation of the proposed project would not result in any potentially significant impacts to riparian habitats, other sensitive natural communities, or federally protected wetlands and/or drainages. **No impacts would occur.**

d) The project site is located within an urban/developed environment. The project site does not fall within a designated Significant Ecological Area (SEA) and the site is not located within a known migration corridor or native wildlife nursery, per the City of Camarillo General Plan. Limited local wildlife movement is expected to occur through the project site given the level of surrounding urban development except for nesting or foraging birds and small retile and

mammal (rodent) species. **No impacts to regional wildlife movement corridors would result from the project and project impacts to local wildlife movement are considered less than significant.**

e) Mature trees are located along the eastern border of the project site. Chapter 13 of the City of Camarillo Municipal Code includes provisions regarding permitting of planting, trimming, or removal of trees. The proposed project may involve removal of the trees at the existing project site. **Adherence to the City of Camarillo code provisions regarding removal and permitting of trees would reduce impacts to a less than significant level.**

f) The nearest regional conservation plan relative to the proposed project site is the Lower Santa Clara River Watershed and Surrounding Areas. The City of Camarillo is outside of this conservation plan area (The Nature Conservancy 2008). The proposed project site is not within any habitat conservation plans or any other regional planning areas. Therefore, the proposed project would not conflict with the provisions of any adopted local or regional conservation plans. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
V. Cultural Resources				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	☐	☒	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

a) Both the National Register of Historic Places and the California Office of Historic Preservation identify the Camarillo Ranch House as a significant historical/cultural resource. This building is located approximately 0.82 miles west of the project site. The City of Camarillo Community Design Element lists six additional historic buildings, none of which are immediately adjacent or within the vicinity of the proposed project site. The distance of the historic buildings from the project site precludes the proposed project from adversely affecting the context or integrity of the resource. **No impact to historic resources would occur.**

b) The project site is not known to contain any archaeological resources or human remains. Though no archaeological resources are known to be present on site, project construction has the potential to disturb undiscovered archaeological resources during grading. **This is a**

potentially significant impact unless mitigation is incorporated. Impacts would be less than significant after implementation of Mitigation Measure CR-1.

CR-1 If unanticipated cultural resources are encountered during construction activities (any permitted action requiring physical digging or grading of a project area using mechanical equipment or hand tools, including core sampling, soil borings, work required for placing caissons or footings, planting trees, disking, grubbing, trenching and installation of poles, underground electrical systems, sewers, water mains, or other utilities, or geological/geotechnical testing) work shall cease until the nature, extent, and possible significance of any cultural remains can be assessed and, if found to be significant pursuant to Section 15064.5 of the California Code of Regulations (CEQA Guidelines), remediated. Such assessment and remediation shall be implemented by the City through consultation with a qualified cultural resources professional prior to recommencement with onsite construction/grading activities. If remediation is necessary, possible techniques include removal, documentation, curation, or avoidance of the resource, depending upon the nature of the find. Cultural resource remains may include artifacts, shell, bone, features, foundations, trash pits and privies, etc.

c) Construction of the project would not impact, either directly or indirectly, any known unique paleontological resource or unique geologic features. However, ground-disturbing activities at the project site have the potential to disturb previously unknown cultural resources. **With implementation of mitigation measure CR-1, a less than significant impact to paleontological resources would occur.**

d) The likelihood of finding intact significant cultural resources, including any human remains, at the project site is low. No known burial sites have been identified within the project site or in the vicinity. In addition, California Health and Safety Code §7050.5, Public Resources Code § 5097.98, and § 15064.5 of the California Code of Regulations (CEQA Guidelines) mandate procedures to be followed, including that, if human remains are encountered during excavation, all work must halt, and the County Coroner must be notified (Section 7050.5 of the California Health and Safety Code). The coroner will determine whether the remains are of forensic interest. If the coroner, with the aid of the supervising archaeologist, determines that the remains are prehistoric, the coroner will contact the Native American Heritage Commission (NAHC). The NAHC will be responsible for designating the most likely descendant (MLD) responsible for the ultimate disposition of the remains, as required by Section 5097.98 of the Public Resources Code. The MLD should make his/her recommendations within 48 hours of their notification by the NAHC. This recommendation may include A) the non-destructive removal and analysis of human remains and items associated with Native American human remains; (B) preservation of Native American human remains and associated items in place; (C) relinquishment of Native American human remains and associated items to the descendants for treatment; or (D) other culturally appropriate treatment. Section 7052 of the Health & Safety Code also states that disturbance of Native American cemeteries is a felony. **With adherence to these existing regulations, impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VI. Geology and Soils				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☒	☐	☐
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on a geologic unit or soil that is unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code, creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

The project site is located in the Transverse Ranges geomorphic province of Southern California. The Transverse Ranges are essentially east-west trending elongate mountain ranges and valleys that are geologically complex. Structurally, the province reflects the north-south compressional forces that are the result of a bend in the San Andreas Fault. As the Pacific Plate, the westerly side of the fault, and the North American Plate, on the easterly side, move past one another along the fault the bend causes a deflection which allows for large accumulations of compressional energy. Some of these forces are spent in deforming the crust into roughly east-west trending folds and secondary faults. The most significant of these faults are typically reverse or thrust faults, which allow for the crustal shortening taking place regionally.

The regional faults most likely to affect the project site include the Camarillo fault, the Springville fault, the Simi- Santa Rosa fault, the Santa Rosa Valley Fault, and the Camarillo Fault. The Oak Ridge and Ventura faults, located approximately 6 and 11 miles north of the Project Area, are other active regional faults potentially impacting the project site. The range of maximum probable magnitudes for earthquakes emanating from these faults ranges from 6.0 to 8.0 (Southern California Earthquake Data Center [SCEC], 2011). A more detailed description of faults in the vicinity is provided below. However, it should be noted that these are not the only faults that could potentially affect the project site.

Malibu/Santa Monica/Raymond Fault System. This fault system consists of north-dipping thrust faults, which extend along the coast and onshore for a total of over 40 miles. This fault system begins in the San Bernardino area and extends along the southern base of the Santa Monica Mountains and passes offshore a few miles west of Point Dume. Faults within this system are considered active.

Simi/Santa Rosa Fault. The Simi/Santa Rosa fault zone trends westward from the Santa Susana Mountains along the northerly margin of the Simi and Tierra Rejada Valleys, along the southern slopes of the Las Posas and Camarillo Hills, to their easterly termination at the western edge of Camarillo. The western termination of the fault zone is believed to occur at a northwest-trending near-vertical "tear fault" called the Wright Road fault. The Simi/Santa Rosa Fault consists of a north dipping reverse fault with left-lateral oblique movement. The fault has a general northeast-southwest strike and northern dip. The fault has an estimated displacement of 5,300 feet with the northern block uplifted relative to the southern block and an estimated slip rate of 1 mm per year. In the City of Camarillo, the Simi/Santa Rosa fault zone consists of three named faults: the Springville, Camarillo, and Santa Rosa Valley faults. The faults are considered active and pose a potential seismic shaking hazard to the project site. One of those faults is close enough to pose a potential ground rupture hazard at the project site (see discussion below) The Camarillo fault is the closest regional fault to the project site, located approximately 600 feet to the northwest please refer to Figure 7 below). This fault system is capable of generating an earthquake with a magnitude ranging between 6.5 and 7.0 (Gorian and Associates, 2009).

Bailey Fault. The Bailey Fault marks the boundary between the western margin of the Santa Monica Mountains and the Oxnard Plain. It extends from the Mugu Lagoon area northerly to U.S. 101. Available information is insufficient to conclude that the fault has not been active. Therefore, the fault is designated as potentially active.

Red Mountain/San Cayetano/Santa Susana/San Fernando Fault System. This fault system consists of a major series of north-dipping thrust faults, which extend over 150 miles from Santa Barbara County into Los Angeles County. The system is associated with an intense zone of folded and faulted bedrock. This fault system is considered active.

Oak Ridge Fault. The Oak Ridge Fault is located along the northern flank of Oak Ridge and is approximately six miles north of the Project Area (Gorian and Associates, 2009). The fault is a steep south-dipping reverse fault that forms the boundary between Oak Ridge to the south and the Santa Clara River to the north. The fault extends approximately 65 miles from offshore in the Santa Barbara Channel eastward to the Santa Susana Mountains. The eastern part of the fault is overridden by the Santa Susana Fault. The fault is concealed with Holocene

and Pleistocene deposits of the Oxnard Plain, and its surface project is located approximately six miles north of the project site. The fault has an estimated slip rate of approximately 4 millimeters (mm) per year, and a calculated maximum moment magnitude of 6.9 for both the eastern and western parts of this fault (California Department of Conservation, 1988). The magnitude 6.7 Northridge earthquake (in 1994) is thought to have occurred along the eastern end of the Oak Ridge fault.

Ventura Fault. The Ventura fault is located within an Alquist-Priolo Special Study Zone and is approximately 11 miles northwest of the project site. The fault is approximately 6.2 miles long and consists of a north-dipping reverse fault that extends eastward along the south flank of the Ventura Avenue Anticline (Yerkes, R.F., et al 1987). The fault has an estimated slip rate of 1 mm per year, and a maximum moment magnitude of 6.8 (California Department of Conservation, 1988).

San Andreas Fault Zone. The San Andreas Fault Zone is the dominant active fault in California. It is located approximately 40 miles north of the project site (Gorian and Associates, 2009). It is the primary surface boundary between the Pacific and the North American tectonic plate. There have been numerous historical earthquakes along the San Andreas Fault. This fault is capable of producing a magnitude 8.0 earthquake (SCEC, 2011).

Blind Thrust Faults. In addition to these faults, there is the potential for ground shaking from blind thrust faults. Blind thrust faults are low angle detachment faults that do not reach the ground surface. Recent examples of blind thrust fault earthquakes include the 1994 Northridge (Magnitude 6.7), 1983 Coalinga (Magnitude 6.5), and 1987 Whittier Narrows (Magnitude 5.9) events. As described in Dolan et al (1995), much of the Los Angeles area is underlain by blind thrust faults. In their seismic model for Los Angeles, blind thrust faults are found at a depth of about 6 to 10 miles below ground surface and have the ability to produce magnitude 7.5 earthquakes.

The proximity of active faults is such that the project site has experienced strong seismically induced ground motion and it is likely that the project site will experience strong seismically induced ground motion in the future.

a(i) To assist cities and counties in avoiding the hazard of surface fault rupture, the Alquist-Priolo Earthquake Fault Zoning Act requires the State Geologist to establish Earthquake Fault Zones around the surface traces of active faults. The State has identified three Alquist-Priolo Earthquake Fault Zones within Camarillo. The zones are located along and just north of Las Posas Road, south of U.S. 101 just to the east of the airport and extending east to Santa Rosa Road, and north of U.S. 101 in the vicinity of Upland Road. The City of Camarillo has also published Guidelines for the Preparation of Geotechnical and Geologic Studies (2008), which describe methods for evaluating geohazards within the Alquist-Priolo Earthquake Fault Zones established by the California Geological Survey (CGS) and fault rupture hazard zones established by the City of Camarillo.

The project site is located approximately 175 feet to the southeast of an Alquist-Priolo Earthquake Fault Zone established for the Camarillo Fault (Camarillo Safety Element Alquist-Priolo Fault Zone Map, 2013). However, according to the City of Camarillo's Fault Rupture Hazard Map for the southeast area of the City (Plate 6.C) contained within the Guidelines for

the Preparation of Geotechnical and Geologic Studies, the northwest corner of the property (approximately 0.15 acres) is located within a City of Camarillo Fault Zone. Figure 7 shows the project site and its relationship to the fault hazard areas mapped by the State of California and by the City of Camarillo.

Therefore, the project's potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death from fault rupture is considered potentially significant unless mitigated. Impacts would be less than significant after implementation of Mitigation Measures GEO-1 through GEO-5.

GEO-1 Prior to any grading or building permit review, the developer shall prepare and submit to the City Engineer a soils and geologic study in accordance with the City of Camarillo Guidelines for the Preparation of Geotechnical and Geologic Studies and any other applicable standards. The study shall include, but not limited to, fault trenching (if structures are planned within the City of Camarillo fault hazard zone area), liquefaction and hydroconsolidation, and seismically induced settlement testing and analysis. The fault study shall be performed under the direct supervision of a Certified Engineering Geologist (CEG).

GEO-2 All future habitable structures on the project site shall be located beyond the limits of any Structural Setback Zone established by the applicant's geotechnical consultant.

GEO-3 Prior to the design and construction of any structural improvements, the Project developers shall have comprehensive design level geotechnical evaluations conducted that include subsurface exploration and laboratory testing. Recommendations for grading/earthwork, surface and subsurface drainage, foundations, pavement structural sections, and other pertinent geotechnical design considerations shall be formulated and implemented based on the findings of this evaluation. This comprehensive design level geotechnical evaluation shall be performed under the direct supervision of a Registered Geotechnical Engineer (GE) and shall be prepared in accordance with the City of Camarillo Guidelines for the Preparation of Geotechnical and Geologic Studies and any other applicable standards.

GEO-4 In order to safeguard against major seismic-related failures, all buildings within the Project site shall be constructed in conformance with the Uniform Building Code, as adopted by the City of Camarillo.

GEO-5 The fault hazard area and Structural Setback Zone shall be identified on the site plans or other appropriate document for the project developer to provide notice to property purchasers of any limitations for use of the property.

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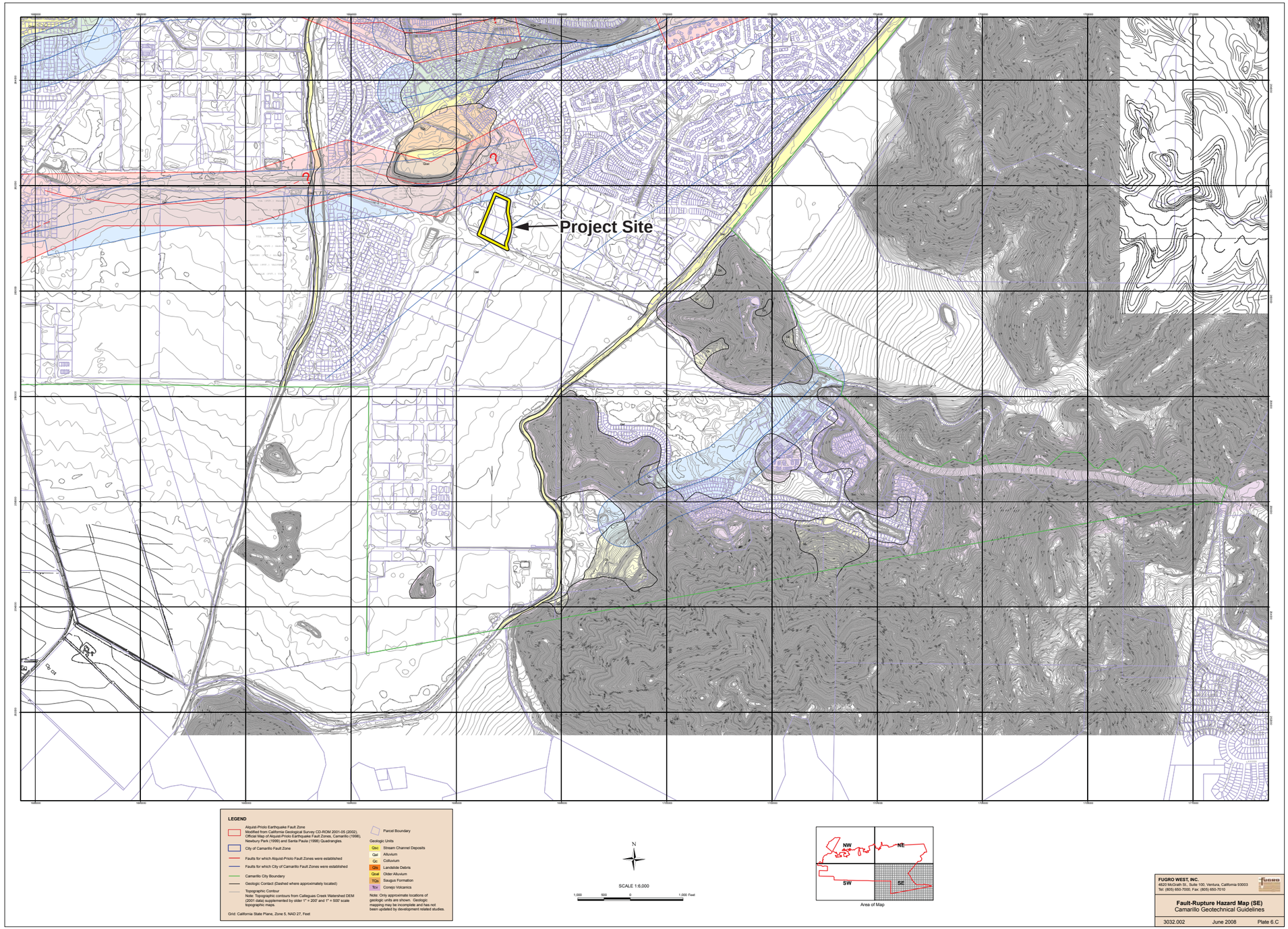

Fault Rupture Hazard Map

Source: Fault-Rupture Hazard Map (SE) Camarillo Geotechnical Guidelines

Figure 7

a(ii) As with any site in the southern California region, the project site is susceptible to strong seismic ground shaking in the event of a major earthquake. Although the proposed project site is susceptible to ground shaking, well-constructed buildings are designed to resist ground shaking through the use of shear panels and reinforcement. As stated in the City of Camarillo Safety Element, the effects of seismic shaking on future structures and land development projects within the City of Camarillo may be mitigated by adhering to adopted building codes. The California Building Code (CBC) regulates the design and construction of foundations, building frames, retaining walls, excavations, and other building elements to mitigate the effects of seismic shaking and adverse soil conditions. Nevertheless, the project could expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including strong seismic ground shaking. **Compliance with the CBC standards and mitigation measures GEO-1 through GEO-5 would reduce potential ground shaking impacts to a less than significant level**.

a(iii)) Ground shaking can induce secondary seismic hazards such as liquefaction, lateral spreading, subsidence, ground fissuring, and landslides. Liquefaction describes the phenomenon where ground shaking works cohesionless soil particles into a tighter packing, which induces excess pore pressure. Engineering research of soil liquefaction potential (Youd et al., 2001) indicates that generally three basic factors must exist concurrently in order for liquefaction to occur. These factors include:

- A source of ground shaking, such as an earthquake, capable of generating soil mass distortions;
- A relatively loose silty and/or sandy soil; and
- A relative shallow groundwater table (within approximately 50 feet below ground surface) or completely saturated soil conditions that will allow positive pore pressure generation.

A large portion of the City, including the project site, lies within a liquefaction hazard zone per the State of California Department of Conservation. According to the City of Camarillo Liquefaction Susceptibility Map for the southeast area of the City (Plate 8.C) prepared as part of the Guidelines for the Preparation of Geotechnical and Geologic Studies, the project site is underlain by alluvial soils where groundwater has been found to be shallower than 50 feet or where groundwater data is not available. Figure 8 illustrates the relationship of the project site to the identified liquefaction hazard zones. **Therefore, the project site does have the potential for liquefaction and the project's potential to expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death from liquefaction is considered potentially significant unless mitigated. Adherence to Mitigation Measure GEO-3 above would reduce the potential impacts associated with seismic related ground failure, including liquefaction, to a less than significant level.**

a(iv)) The geologic and topographic characteristics of an area often determine its potential for landslides. Steep slopes, the extent of erosion, and the rock composition of a hillside all contribute to the potential for slope failure and landslide events. In order to fail, unstable slopes typically need to be disturbed; the common triggering mechanisms of slope failure include undercutting of slopes by erosion or grading, saturation of marginally stable slopes by rainfall or irrigation, and shaking of marginally stable slopes during earthquakes.

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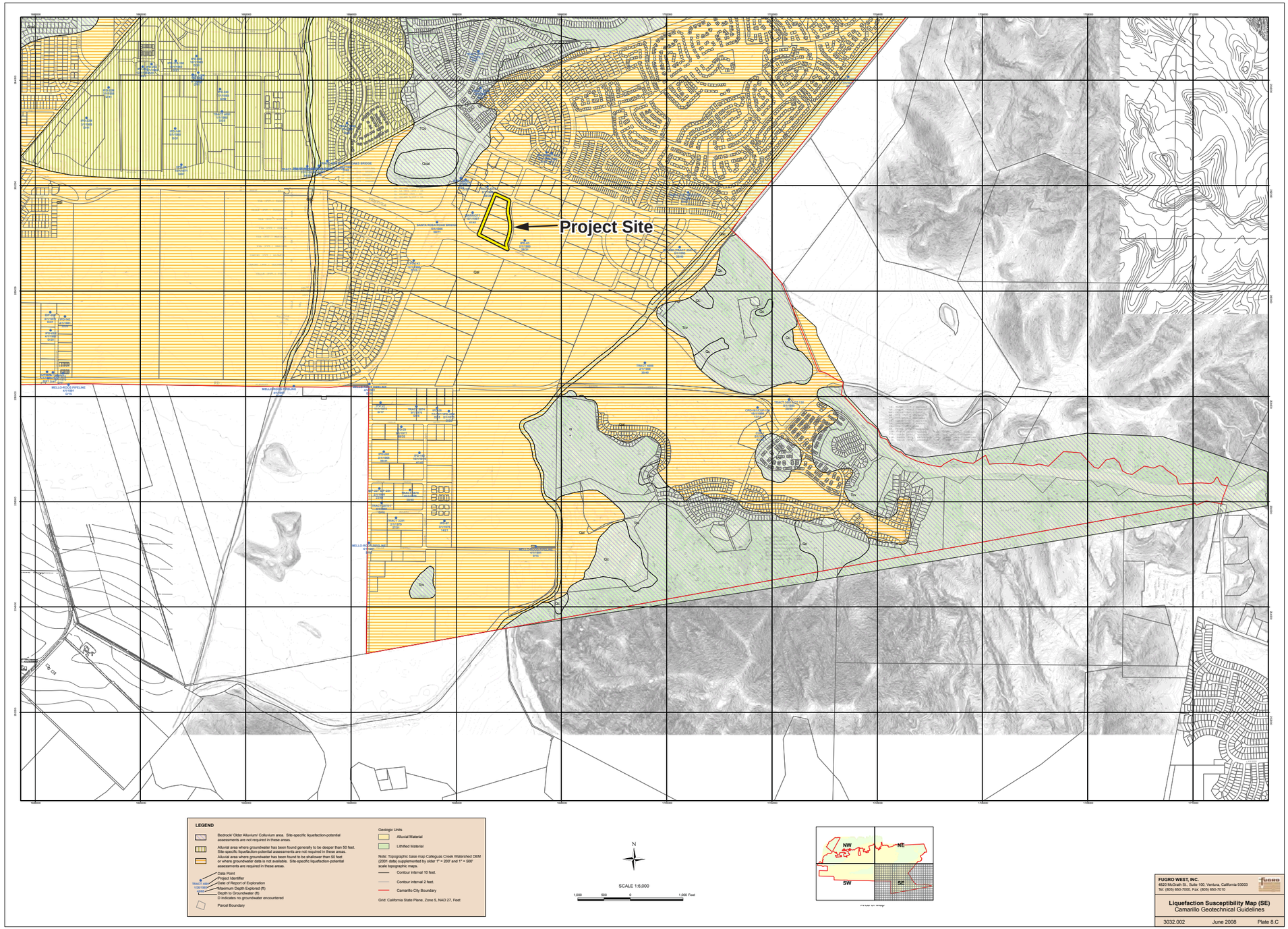

Liquefaction Susceptibility Map

Figure 8

Source: Liquefaction Susceptibility Map (SE) Camarillo Geotechnical Guidelines

The project site is located in a highly urbanized area and is generally flat. The project site is not within any area subject to earthquake induced landslides as identified by the City of Camarillo Safety Element and Seismic Hazard Zone Map for the Camarillo Quadrangle. Therefore, the proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including landslides. **Impacts would be less than significant.**

b) The proposed project would include site preparation activities that would loosen and disturb soils at the project site, thereby facilitating entrainment by wind and water. Upon operation, increased runoff from new impervious surfaces could also increase site erosion, which could lead to additional sediment in City drainage facilities. Development of the proposed project site would disturb more than one acre, thereby triggering the need for coverage under the State General Construction Permit (GCP) and the completion of a Storm water Pollution Prevention Plan (SWPPP), in conformance with the National Pollutant Discharge Elimination System (NPDES). The SWPPP, which is part of the GCP, addresses specific storm water pollution requirements for new developments. The GCP requires that all development projects implement various control techniques (termed best management practices, or BMPs) to minimize the amount of pollutants entering surface waters. The proposed project is also subject to post-construction storm water quality mitigation requirements identified in the Ventura County Municipal Storm water Permit (Order 2010-0108). The City of Camarillo also requires all applicable development projects to submit a Post Construction Storm Water Management Plan (PCSMP) that has received City of Camarillo Public Works Department approval with the project application. The PCSMP identifies pollutants of concern, site design, site conditions, and source and treatment control measures that would reduce the potential for on-site erosion and prevent any violation of water quality standards. The proposed PCSMP can be found in Appendix E.

The proposed project would be required to adhere to the project's SWPPP and the PCSMP, which would ensure that impacts related to soil erosion or loss of topsoil would be less than significant.

c) Subsidence is the sudden sinking or gradual downward settling of the earth's surface with little or no horizontal movement. Subsidence is caused by a variety of activities, which include, but are not limited to, withdrawal of groundwater, pumping of oil and gas from underground, the collapse of underground mines, liquefaction, and hydrocompaction. **Because the proposed project would be required to adhere to applicable California Building Code standards, Policy SSAF-2.2g of the City of Camarillo Safety Element, and mitigation measures GEO-1 through GEO-5 above, impacts would be less than significant.**

d) According to the City of Camarillo Safety Element, highly expansive soils are located on the east side of the City along Santa Rosa Road, which is near the project site. The proposed project site would be subject to Policy SAF-2.1a and SAF-2.1b of the City of Camarillo Safety Element, and mitigation measures GEO-1 through GEO-5 above, which would require geologic hazards to be identified and addressed with the preparation of a geologic/geotechnical investigation. The investigation would include adequate analysis and appropriate mitigation of potential hazards such as soil erosion hazards. To reduce the potential for foundation cracking, one or more of the following would be implemented as recommended by a qualified engineer:

1. Use continuous deep footings and concrete slabs on grade with increased steel reinforcement together with a pre-wetting and long-term moisture control program within the active zone.
2. Removal of the highly expansive material and replacement with non-expansive compacted import fill material.
3. The use of specifically designed drilled pier and grade beam system incorporating a structural concrete slab on grade supported above the expansive soils.
4. Chemical treatment with hydrated lime to reduce the expansion characteristics of the soils.
5. Where necessary, construction on transitional lots shall include over excavation to expose firm sub-grade, use of post tension slabs in future structures, or other geotechnically acceptable methods.

Because the proposed project would be required to adhere to applicable California Building Code standards, and mitigation measures GEO-1 through GEO-5 above, impacts would be less than significant.

e) The proposed project does not include any improvements that would require the use of septic systems. The project proposes to connect to the Camrosa Water District wastewater collection system to dispose of wastewater. **Therefore, no impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VII. Greenhouse Gas Emissions				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Greenhouse Gas Setting

Gases that trap heat in the atmosphere are often called greenhouse gases (GHGs), analogous to the way in which a greenhouse retains heat. Common GHG include water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O_x), fluorinated gases, and ozone. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are largely by-products of fossil fuel combustion, whereas CH_4 results from off-gassing associated with agricultural practices and landfills. Man-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFC), and sulfur hexafluoride (SF_6) (Cal EPA, 2006b).

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat trapping effect of GHGs, Earth's surface would be about 34° C cooler (CAT, 2006).

However, it is believed that emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations.

Pursuant to the requirements of SB 97, the Resources Agency adopted amendments to the *CEQA Guidelines* for the feasible mitigation of GHG emissions and analysis of the effects of GHG emissions. The adopted *CEQA Guidelines* provide regulatory guidance on the analysis and mitigation of GHG emissions in CEQA documents, while giving lead agencies the discretion to set quantitative or qualitative thresholds for the assessment and mitigation of GHGs and climate change impacts. Ventura County APCD staff is considering a tiered approach with the main components involving consistency with a locally adopted GHG reduction plan followed by a bright-line threshold for land use projects that would capture 90 percent of project GHG emissions (VCAPCD 2011). The South Coast AQMD is also considering this as their primary approach for land use projects. Ventura County APCD staff is also exploring an efficiency-based metric for land use projects and plans.

Given that Ventura County is adjacent to the South Coast AQMD Jurisdiction and is a part of the SCAG region, District staff believes it makes sense to set local GHG emission thresholds of significance for land use development projects at levels consistent with those set by the South Coast AQMD (VCAPCD 2011). SCAQMD's current proposed threshold is 3,000 metric tons per year (SCAQMD, "Proposed Tier 3 Screening Levels – Residential/Commercial Projects, September 2010). If the proposed project would generate GHG emissions above the threshold level, its contribution to cumulative impacts would be considered significant.

a) The project's proposed construction activities, energy use, daily operational activities, and mobile sources (traffic) would generate quantities of greenhouse gas (GHG) emissions. The California Emissions Estimator Model (CalEEMod) was used to calculate emissions resulting from project construction and long-term operation. The project-related construction emissions are confined to a relatively short period of time in relation to the overall life of the proposed project. Therefore, the construction GHG emissions were amortized over a 30-year period to determine the annual construction-related GHG emissions over the life of the project. As shown in Table 4 below, the combined annual GHG emissions associated with the proposed project would be 1,445 metric tons. This is less than the proposed SCAQMD threshold of 3,000 metric tons per year. **Therefore, impacts from GHG emissions would be less than significant.**

Table 4
Estimated Emissions of Greenhouse Gases

Emission Source	Annual Emissions (metric tons CDE)[3]
Construction (amortized over 30 years)	17
Operational and Mobile	1428
Total	**1,445**

Sources: Emissions reported are from CalEEMod mitigated construction and operational data. See Appendix A for calculations.
[3] Carbon dioxide equivalent (CDE or CO2E) is a quantity that describes, for a given mixture and amount of GHGs, the amount of CO2 (usually in metric tons; million metric tons [megatonne] = MMTCO2E = terragram [Tg] CO2 Eq; 1,000 MMT = gigatonne) that would have the same global warming potential (GWP) when measured over a specified timescale (generally, 100 years).

b) In April 4 2012, the Southern California Association of Government (SCAG) adopted the *2012-2035 Regional Transportation Plan/Sustainable Communities Strategy* (RTP/SCS). SCAG's RTP/SCS includes a strong commitment to reduce emissions from transportation sources by promoting compact and infill development. A goal of the SCS is to "promote the development of better places to live and work through measures that encourage more compact development, varied housing options, bike and pedestrian improvements, and efficient transportation infrastructure." The proposed project would be infill development that would also be located within walking distance of commercial retail, civic, and recreational uses, thereby reducing vehicle trips. It would also be consistent with the SCS goal of "creating more compact neighborhoods and place everyday destinations closer to homes and closer to one another." The proposed project is also consistent with energy efficiency measures because it would comply with Title 24, the California Building Energy Efficiency Program. As discussed above, the proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. **Impacts would be less than significant**.

GHG emissions generated by the proposed project would not have a significant adverse impact on the environment. The project would not conflict with applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. **Therefore, the contribution of onsite development to cumulative global climate change would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. <u>Hazards and Hazardous Materials</u>				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
VIII. Hazards and Hazardous Materials				
Would the project:				
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

a) According to the City of Camarillo Safety Element, hazardous materials are transported throughout the City of Camarillo, and businesses within the City handle, transport, and/or store hazardous materials. The proposed project site is currently zoned for industrial use but remains undeveloped, and may be nearby businesses that incorporate hazardous materials into their production or service processes. Existing Federal, State, and local laws regulate the use, transport, disposal, and storage of hazardous materials within Camarillo, as well as response to incidents that may expose the public to hazardous materials. These regulations and regulatory jurisdictions include the California Code of Regulations Title 26, the Ventura County Hazardous Materials Business Plan, Camarillo Multi-Hazard Functional Plan, and the HazMat Unit of the Ventura County Fire Department. **Adherence to these regulations and the appropriate and timely response of relevant parties to incidents involving hazardous materials would ensure impacts related to hazardous materials would be less than significant.**

b) Exposure to hazardous materials during the construction and operation the project could result from: (1) exposure of contaminated soil or groundwater during grading; (2) the improper handling or use of hazardous substances; (3) transportation accident; or (4) inadvertent release resulting from an unforeseen event (e.g., fire, flood, or earthquake). The severity of any such exposure is dependent upon the type, amount, and characteristic of the hazardous material involved; the timing, location, and nature of the event; and the sensitivity of the individual or environment affected.

The project site is not listed on the Cortese list or listed in the Site Mitigation and Brownfields Reuse Program Database, as maintained by the Department of Toxic Substances Control (DTSC) Envirostar database (http://www.envirostor.dtsc.ca.gov/public/). Furthermore, the project site is not listed on the lists of Leaking Underground Storage Tanks (LUST) Geotracker database, as maintained by the State Water Resources Control Board (SWRCB, 2013). The nearest active hazard remediation site is a LUST site located approximately 0.2 miles east of the project site on Camino Ruiz.

Due to the project's proximity to the US 101 Freeway, the potential exists for the accumulation aerially deposited lead in soil located within the project area. Future project grading therefore has the potential to disburse lead particles, which could result in health risks to construction workers or the public, and if left in place, could result in adverse health risks to occupants of buildings. Based on California hazardous waste criteria, any soil is considered hazardous waste if the soluble lead concentration exceeds 5.0 milligrams per liter (mg/l) (CCR, Title 22, Division 4.5, Chapter 11, Article 3, 66261.24). As such, ADL contaminated soils shall be collected and tested, and if necessary, disposed of in accordance with applicable state and federal regulations. **This is considered a potentially significant impact, unless mitigated. Impacts would be less than significant after implementation of Mitigation Measures HAZ-1.**

HAZ-1 **Aerially-Deposited Lead (ADL) Soil Analysis and Remediation.** Prior to issuance of grading permits for the project site, soil samples shall be collected within all areas of the project site located within 100 feet of the US-101 Freeway off-ramp. The soil samples shall be analyzed for soluble lead using the soluble threshold limit concentration (STLC) extraction procedure. If soluble lead concentrations using the STLC extraction procedure exceed 5 mg/L, then these soil samples shall be further analyzed for soluble lead using the toxicity characteristic leaching procedure (TCLP) extraction procedure. The results of the STLC and TCLP analysis, if any, will determine the classification of the soil in these areas as non-hazardous or hazardous waste. If lead levels are detected above the hazardous material thresholds, the soil shall be hauled and disposed of by a transportation company licensed to transport hazardous materials material. In addition, the material shall be taken to a landfill or receiving facility licensed to accept hazardous waste. Documentation of the appropriate sampling, transportation and disposal must be prepared and include the volume of soil removed, where the material was moved to, and include soil profiling, and transportation and disposal manifests. The soil removal documentation shall be prepared for the property owner or other responsible party, with a copy submitted to the City of Camarillo.

c) The school closest to the proposed project site is Adolfo Camarillo High School, approximately 0.3 mile west of the project site. The development of residential dwellings would not generate or release hazardous materials into the environment. **No impact would occur**.

d) As discussed above, there is no evidence of a hazardous environmental condition on the project site. The distance between the proposed project site and the nearest leaking underground storage tank would sufficiently reduce the risk of upset potential. Potential health risks associated with the proximity of the site to the Ventura Freeway are analyzed in Section III,

Air Quality. No other potentially hazardous uses were located within the vicinity of the project site. **No impact would occur**

e,f) The Camarillo Airport, a general aviation reliever airport, is located approximately 5 miles south west of the project site. A review of the Ventura County Airport Land Use Plan confirmed that the project site is not within the Future Land Use Plan in the Camarillo Airport Area or fly zone. In addition, the proposed residential uses are not in close proximity to the airport. Point Mugu is a Naval Air Station (NAS) military installation that is primarily utilized by Naval and Marine aircraft. Point Mugu is approximately 14 miles southwest of the project site. The proposed project is not within any Point Mugu flight paths according to the Ventura County Airport Land Use Plan. **No impact would occur.**

g) Construction of the project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan. Further, the project plans are subject to approval by the Ventura County Fire Protection District for adequate emergency vehicle access. **Impacts would be less than significant**.

h) The fire hazard potential of an area is determined by the relative amount of fuel loading, fire weather, and slope. The project site is in an urban area with flat topography. The proposed project site is not located within any high or very high fire hazard zones as identified by the Camarillo Safety Element. Therefore, the proposed project would not expose people to a significant wildland fire risk. **No impacts would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IX. <u>Hydrology and Water Quality</u>				
Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering or the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☒	☐	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including the	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
IX. Hydrology and Water Quality				
Would the project:				
alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐
f) Otherwise substantially degrade water quality?	☐	☐	☒	☐
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j) Inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

a, f) According to the Ventura County Soils map the project site is located in an area with soils which are typically silty loams or loams. They have moderate infiltration rates when thoroughly wetted and consist of moderately deep to deep and moderate well to well-drained soils with moderately fine to moderately coarse texture. The range for the measured infiltration rate is 0.65 to 0.91 in/hr. (0.78 in/hr. average used in calculations). The site generally slopes in an easterly direction at a mild slope of about one percent, on average, towards Camino Ruiz. Existing elevations range between 125 and 115 feet above sea level.

The protection of water quality in the watercourses of Ventura County is under the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). The RWQCB establishes requirements prescribing discharge limits and establishes water quality objectives through the Ventura County Municipal Storm Water National Pollutant Discharge Elimination System (NPDES) Permit. The Permit addresses specific storm water pollution requirements for new developments. As a co-permittee of the County NPDES permit, the City of Camarillo is responsible for assuring that new developments are in compliance with the Permit.

Construction. The proposed project would require nominal grading as the site is relatively flat. Nevertheless, construction would require the use of heavy equipment, which has the potential to drip pollutants onto bare soil which could be transported offsite untreated to other water resources. Additionally, during storm events, precipitation and wind has the potential to cause erosion or siltation, thereby affecting water quality. However, the State Water Resources Control Board as well as the Los Angeles Regional Water Quality Control Board establish requirements prescribing discharge limits and establish water quality objectives through the State general Construction National Pollutant Discharge Elimination System (NPDES) Permit, GCP and the Ventura County Municipal Stormwater Permit (MS4 permit) during construction phases. The MS4 permit is issued by the Regional Board and defines the Waste Discharge Requirements for Storm water Management/Urban Runoff Discharges for the Ventura County Watershed Protection District, and the cities of Ventura County (Order No. 2010-108, NPDES Permit No. CAS004002). The City of Camarillo is a co-permittee of this MS4 permit. Because the proposed project is over 1 acre in size, the General Construction permit (GCP) conditions apply to the project as defined in the State General Construction NPDES Permit, which requires the project to complete a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs include best management practices (BMPs) that reduce or restrict surface water from contaminating adjacent water resources. **Impacts would be less than significant**.

Operation. The proposed project would add impervious surfaces, such as rooftops and pavement, which would reduce infiltration of storm water into the soil and increase surface runoff. Proposed impervious surfaces would accumulate deposits of oil, grease, and other vehicle fluids and hydrocarbons affecting storm water quality. However, development of the proposed project would be required to implement retention type BMPs that would reduce impacts prior to discharging to off-site storm water drainage facilities. The Ventura County Municipal Storm water NPDES Permit, Order No. 2010-0108 (MS4 permit) requires all new developments to implement various BMPs to minimize the amount of pollutants entering surface waters. All projects that fall into one of ten categories that are identified in the MS4 permit require post-construction storm water quality mitigation. These categories include parking lots with over 5,000 square feet or 25 parking spaces as well as developments equal to or greater than one acre that add more than 10,000 square feet of impervious surface. The proposed project is over one acre and is adding more than 10,000 square feet of impervious surface and includes parking areas providing 53 open parking spaces located throughout the site. Therefore, the proposed project will be required to comply with the MS4 permit. The MS4 permit requires that effective impervious area (EIA) be reduced to five percent by retaining the water quality volume of the design storm using infiltration, reuse, or evapotranspiration BMPs (retention BMPs). The proposed project would construct on-site drainage facilities, including an on-site bio-retention basin, capable of collecting and retaining approximately 0.331 acre-feet of runoff. In addition, bio-filtration drainage improvements would be constructed in accordance with the Ventura County's 2011 Technical Guidance Manual. **Impacts would be less than significant.**

b) The project is located within the jurisdiction of the Camrosa Water District. In response to severe reductions in State Water Project water availability, Camrosa's Board of Directors declared a moratorium on new development water services within the District's service area. The moratorium prohibits new water connections unless it can be substantiated that a new use would result in no unmitigated demand on potable, non-potable, and recycled water. The

proposed project is required to utilize no more than 144,028 gallons per day (GPD), which is the maximum daily demand of water identified in the Water Master Plan. Based on Camrosa water standards, the proposed 129 unit multi-family project will require approximately 59,598 gallons per day. **This is considered a potentially significant impact**. As currently proposed, total water demand for the proposed project will be supplied by the Camrosa Water District through development of new potable water resources utilizing a mitigation plan prepared by the applicant. As discussed in *Section XVII(d), Utilities and Service Systems,* mitigation measures UTL-1 through UTL-5 would offset the total maximum day demands to the extent that the project would have no net increase in water demand. **After mitigation, impacts would be less than significant.**

c) The proposed project site is currently undeveloped and will undergo grading. The site is relatively flat and the proposed project will not substantially alter the existing drainage pattern of the site or area in a way that will alter the course of a stream or river, in a manner which would result in substantial erosion or siltation.

The proposed project will include an onsite detention basin and bio-retention area. The Minimum Maintenance Requirements for Post-Construction Treatment Devices includes annual and semiannual inspections and control for soil quality and erosion. **The project would be required to adhere to the Minimum Maintenance Requirements which would reduce impacts related to alteration of drainage patterns that affect soil erosion to a less than significant level.**

d,e) The proposed project would not contribute substantial flows to storm water drainage facilities. The nearest receiving body of water for storm water discharge is Conejo Creek watershed, which is approximately 3,100 feet away from the proposed project site. The proposed project would increase the quantity of on-site impervious surfaces, which could reduce the amount of water that percolates into the ground and increase the amount of water that is discharged to Conejo Creek. The proposed project would include on-site drainage infrastructure to ensure that receiving water peak flows would not be increased above pre-development volumes. Storm drain outfalls will be designed to minimize erosion and all runoff will be treated prior to discharge through a combination of source control, structural BMPs, treatment control BMPs, and maintenance procedures per the City of Camarillo. Therefore, project site runoff would not exceed the capacity of the serve the project site or the surrounding areas. **The project's proposed drainage plan would be required to be consistent with all applicable requirements and regulations and thus impacts would be less than significant.**

g,h) The majority of the project site is located within FEMA Flood Zone X (shaded), which is defined as an area determined to be within the "0.2% annual chance flood hazard..." (FEMA Flood Insurance Rate Map No. 06111C0934E). Therefore, the proposed project would not place housing or structures within an area subject to flooding.

The Ventura County Watershed Protection District is charged with protecting the streams and creeks within Ventura County, including the City of Camarillo. The District has a Flood Mitigation Plan for Ventura County which identifies Federal Agencies, Legal and Regulatory Resources, and additional Local Ordinances, Policies, Plans, Programs, Fiscal Resources, and a Mitigation strategy regarding subjecting current and future development to potential flood hazards. All Goals, Objectives, and Actions contained in the Mitigation Strategy and

Implementation Strategy are anticipated to reduce local and county-wide flood hazards and potential flood dangers to the fullest extent feasible. **Impacts would be less than significant.**

i) The proposed project site is not identified to be within a Dam Failure Inundation Area in the City of Camarillo Safety Element. The nearest risk area is for Bard Dam, which affects properties south of the proposed project site on the other side of Ventura Freeway. **Impacts related to risk of dam failure would be less than significant.**

j) Seiches are oscillations of the surface of inland bodies of water that vary in period from a few minutes to several hours. Seismic excitations can induce such oscillations. Tsunamis are large sea waves produced by submarine earthquakes or volcanic eruptions. The project site is not within risk distance from the coastline or any substantial inland body of water that would create a tsunami. Therefore, the proposed project would not be impacted by a tsunami. Furthermore, Policy SAF-3.3a and SAF-3.3b of the City of Camarillo Safety Element will ensure that potential areas affected by tsunami inundation are identified and would receive appropriate emergency response and recovery efforts in the event of a tsunami occurring along the California coast line. **Impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
X. <u>Land Use and Planning</u>				
Would the proposal:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c) Conflict with an applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

a) The proposed project consists of high density residential development on land currently designated for limited manufacturing. Although a General Plan Amendment and Zone Change is proposed, the proposed project would not introduce linear features such as highways or transit lines that would divide an established community. Furthermore, because the proposed project lies within the Heritage Zone, the proposed project would be developed according to design standards set forth by the Camarillo General Plan Community Design Element to be cohesive with and adhere to the theme and visual character of other nearby buildings in the Heritage Zone. **No impact would occur.**

b) As identified in the Project Description, the proposed project is currently zoned L-M, and is designated as Industrial in the Land Use Element of the City's General Plan. The proposed project would require a General Plan Amendment and Zone Change to allow for high-density residential use. Furthermore, the proposed project is within the Heritage Zone. The proposed project would be constructed and designed to adhere to the theme and visual character of buildings in the Heritage Corridor and would therefore be consistent with the Community Design Element of the Camarillo General Plan. The proposed project would therefore be in compliance with the applicable development standards. **Impacts would be less than significant.**

c) The project site is not governed by an adopted habitat or natural conservation plan. **Therefore, no impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XI. Mineral Resources				
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

a,b) Due to the lack of known mineral or natural resources on-site and the project's setting in an urban environment, mineral extraction would be infeasible. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XII. Noise				
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) A substantial permanent increase in ambient noise levels above levels existing without the project?	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XII. <u>Noise</u>				
Would the project result in:				
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise?	☐	☐	☐	☒

Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound power levels consistent with the human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dB level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dB, and a sound that is 10 dB less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dB greater than the reference sound to be judged as twice as loud. In general, a 3 dB change in community noise levels is noticeable, while 1-2 dB changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40-50 dBA, while those along arterial streets are in the 50-60+ dBA range. Normal conversational levels are in the 60-65 dBA range, and ambient noise levels greater than 65 dBA can interrupt conversations.

In addition to the instantaneous measurement of sound levels, the duration of sound is important since sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (L_{eq}). The L_{eq} is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, L_{eq} is summed over a one-hour period.

The time period in which noise occurs is also important since noise that occurs at night tends to be more disturbing than that which occurs during the daytime. Two commonly used noise metrics – the Day-Night average level (L_{dn}) and the Community Noise Equivalent Level (CNEL) recognize this fact by weighting hourly L_{eqs} over a 24-hour period. The L_{dn} is a 24-hour average noise level that adds 10 dB to actual nighttime (10:00 PM to 7:00 AM) noise levels to account for the greater sensitivity to noise during that time period. The CNEL is identical to the L_{dn}, except it also adds a 5 dB penalty for noise occurring during the evening (7:00 PM to 10:00 PM).

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called ground borne noise. Ground borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors. Ground-borne vibration related to human annoyance is generally related to velocity levels expressed in vibration decibels (VdB). However, construction-related groundborne vibration in relation to its potential for building damage can also be measured in inches per second (in/sec) peak particle velocity (PPV) (Federal Transit Administration, May 2006). Based on the FTA's *Transit Noise and Vibration Impact Assessment* and the California Department of Transportation's 1992 *Transportation-Related Earthborne Vibration, Technical Advisory*, vibration levels decrease by 6 VdB with every doubling of distance.

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, and parks are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than commercial or industrial uses that are not subject to impacts such as sleep disturbance. Sensitive land uses generally should not be subjected to noise levels that would be considered intrusive in character. Therefore, the location, hours of operation, type of use, and extent of development warrant close analysis in an effort to ensure that noise sensitive receptors are not substantially affected by noise.

Noise Standards

Federal Noise Policies. There are no federal noise requirements or regulations that apply directly to the City of Camarillo. However, there are federal regulations that influence the audible landscape, especially for projects where federal funding is involved. For example, the FHWA requires abatement of highway traffic noise for highway projects through rules in the Code of Federal Regulations (23 CFR Part 772), the Federal Transit Administration (FTA), and Federal Railroad Administration (FRA). Each agency recommends thorough noise and vibration assessments through comprehensive guidelines for any highway, mass transit, or high-speed railroad projects that would pass by residential areas.

The Federal Aviation Administration (FAA) has prepared guidelines for acceptable noise exposure in its Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Planning program for airports. The program is aimed at balancing an airport's operational needs and its impact on the surrounding community. Its purpose is to reduce noise impacts on existing incompatible land use and to prevent the introduction of new incompatible land uses in the areas impacted by aircraft noise. It establishes standard noise methodologies and noise metrics, identifies land uses normally compatible with various levels of airport noise, and provides for

voluntary development and submission of noise exposure maps and noise compatibility programs by airport operators.

Federal Vibration Policies. The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of groundborne vibration associated with construction activities, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for non-engineered timber and mason buildings (e.g., residential units) is 0.2 in/sec PPV. The threshold of perception of vibration is 0.01 in/sec PPV (Federal Transit Administration, Office of Planning and the Environment, 2006).

State Noise Policies. Title 24, Section 3501 et. seq. of the California Code of Regulations codifies California Noise Insulation Standards. This code section uses the Community Noise Equivalency Level (CNEL) as its primary noise evaluation measurement. The CNEL measurement assesses noise variation during different times of the day for the purposes of averaging noise over a 24-hour period. Essentially, CNEL takes average sound levels at an observation point and adds a weighted penalty to those sounds that occur during the evening and nighttime hours. An interior noise level of 45 dBA CNEL is often considered the desirable noise exposure level for single-family residential units. An exterior noise level of 65 dBA is generally considered an acceptable level for residential and other noise-sensitive land uses.

State Vibration Policies. There are no state standards for traffic-related vibrations. California Department of Transportation's (Caltrans) position is that highway traffic and construction vibrations generally pose no threat to buildings and structures. For continuous (or steady-state) vibrations; however, Caltrans considers the architectural damage risk level to be somewhere between 0.2 and 2.0 inches/second (California Department of Transportation, 2002).

City of Camarillo Noise Policies. The City of Camarillo has adopted noise standards that are more stringent than state guidelines. The City of Camarillo Noise Regulation Ordinance (Chapter 10.34, Camarillo Municipal Code) requires that "No person shall operate or cause to be operated, any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property, to exceed the noise standard for that land use." The Ordinance does not control traffic noise along public streets, but applies to all noise sources located on private property including onsite traffic. As part of this ordinance, properties within the City are assigned a sound zone based on their corresponding land use. Agriculture and Open Space properties are designated as Sound Zone I; Residential properties are designated as Sound Zone II; Commercial/Office properties are designated as Sound Zone III; and Industrial properties are designated as Sound Zone IV. The Ordinance also limits the amount of noise generated by uses during normal operation that may affect the surrounding areas. According to the Noise Regulation Ordinance, which identifies properties according to their land use designations, the residential neighborhood to the north of the project site classify as a Sound Zone II.

Table 5
City of Camarillo Municipal Code Exterior Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time Interval	Exterior Noise Level (dBa)
I	Agricultural and open space properties	7 a.m.-9p.m.	55
		9p.m.-7a.m.	45
II	Residential Properties	7 a.m.-9p.m.	55
		9p.m.-7a.m.	45
III	Commercial/Office Properties	7 a.m.-9p.m.	65
		9p.m.-7a.m.	55
IV	Industrial Properties	7 a.m.-9p.m.	65
		9p.m.-7a.m.	55
Source: City of Camarillo Municipal Code Chapter 10.34 Noise Regulations			

Table 6
City of Camarillo Municipal Code Interior Noise Standards

Noise Zone	Designated Noise Zone Land Use	Time Interval	Allowable Interior Noise Level (dBA)
All	Common wall and freestanding dwellings	9 p.m. to 7 a.m.	40
		7 a.m. to 9 p.m.	45

a,d) Eight on-site short-term (Leq) noise measurements were taken on Wednesday, December 4, 2013 at the site's northern and southern property lines by Veneklasen Associates. The primary sources of noise would be from traffic noise generated along Verdugo Way north of the project site and Ventura Freeway south of the project site. Table 7 below shows the results of the noise measurements. The maximum measured noise level (dBA) occurred at the southern property line, along Ventura Freeway, 50 feet from the center line of the highway exit directly south of the project site. The ambient noise level at this location was 79 dB(A) (Leq). Future noise levels were also modeled for each of the buildings of the proposed project using algorithms from the Federal Highway Administration 1998 Traffic Noise Model (FHWA-PD-96-010). The modeling results show future exterior noise levels would generally exceed City of Camarillo noise standards at various points throughout the proposed project site. The detailed noise modeling results are included in Appendix C.

Table 7
Project Site Exterior Noise Measurements

Measurement Location	Primary Noise Source	Approximate Distance to Primary Noise Source	CNEL (dBA)
Project Site along Verdugo Way	Traffic on Verdugo Way	50 feet from center median	61
		50 feet from center median	63
		200 feet from center median	57
		200 feet from center median	61

Table 7
Project Site Exterior Noise Measurements

Measurement Location	Primary Noise Source	Approximate Distance to Primary Noise Source	CNEL (dBA)
Project Site along Ventura Freeway	Traffic on Ventura Freeway	50 feet from center median	79
		50 feet from center median	77
		150 feet from center median	72
		150 feet from center median	70
Source: Veneklasen Associates, 2013. Appendix C			

Comparing the existing ambient noise level measurements shown in Table 7 to the City's Exterior Noise Level standards (Tables 5 and 6), the proposed residential uses would be exposed to noise levels in excess of the standards. **Therefore, noise related land use compatibility impacts are considered potentially significant unless mitigated. Adherence to Mitigation Measure N-1 and N-2 would reduce noise impacts associated with exposure of site residents to excessive noise to a less than significant level.**

N-1 **Exterior Noise.** The proposed project should include the following mitigations to achieve an acceptable exterior noise level below 55 dBa:

- Relocate private balconies on building facades that are shielded from Ventura Freeway traffic noise

N-2 **Interior Noise.** The residential units with interior noise impacts greater than 45 dBa should feature the following mitigations to achieve an acceptable interior noise level below 45 dBa:

- Install mechanical ventilation that meets all Code requirements, including the capability to provide sufficient air exchanges, without depending on open windows or leakage through windows and doors. The ventilation system shall not compromise the sound insulation capability of the exterior façade assembly.
- Install STC 30 windows, sliding doors, and French doors for all units.

The proposed project would generate temporary (construction-related) and permanent operational noise (traffic, daily residential activities, etc.). Temporary, construction-related noise would occur over the duration of site grading, on and off-site infrastructure installation, and vertical construction, which is estimated to occur over 6 months once building permits are issued. The noise levels associated with project construction would be substantially higher than existing ambient noise levels in the project vicinity, but would cease upon completion of construction. Noise impacts experienced on-site would vary depending on the type of construction equipment, the equipment's location, the sensitivity of nearby land uses, and the timing/duration of construction. During the first stage of construction, site grading and pad construction would occur. The noise sources during this stage would primarily be earthmovers,

bulldozers, excavators, and heavy duty trucks. During the second stage of construction, foundation forms would be constructed along with concrete foundations. Primary noise sources would include heavy concrete trucks and mixers, cranes, and pneumatic drills. The third and fourth stages would consist of vertical construction, landscaping installation, and site clean-up. Primary noise sources associated with the third and fourth phases would include hammering, diesel generators, compressors, light-truck traffic, landscape rollers, and compactors. Table 8 shows the typical noise levels associated with operation of construction equipment at the nearest existing sensitive noise receptor (Courtyard Hotel Camarillo) located approximately 50 feet east of the proposed project site.

Table 8
Typical Construction Equipment Noise Levels

Type of Equipment	Range of Maximum Sound Levels Measured (dBA at 50 feet)	Maximum Sound Levels for Analysis (dBA at 50 feet)
Pile Driver 12,000 to 18,000 ft-lb/blow	81–96	93
Rock Drills	83–99	96
Jack Hammers	75–85	82
Pneumatic Tools	78–88	85
Pumps	74–84	80
Scrapers	83–91	87
Haul Trucks	83–94	88
Cranes	79-86	82
Portable Generators	71-87	80
Rollers	75-82	80
Dozers	77–90	85
Tractors	77–82	80
Front-End Loaders	77–90	86
Hydraulic Backhoe	81-90	86
Hydraulic Excavators	81–90	86
Graders	79–89	86
Air Compressors	76–89	86
Trucks	81–87	86

Source: Bolt, Beranek & Newman, Noise Control for Buildings and Manufacturing Plants, 1987.
dBA = A-weighted decibels, ft-lb/blow = foot-pounds per blow

The first and noisiest stage of construction is typically site preparation, which usually involves earth moving, compaction of soils and the removal of excess materials. The proposed project would not require the use of pile drivers or rock drills and therefore the noisiest equipment would be the scraper, grader, and haul trucks, which would generate noise ranging from 86-88 dBA at 50 feet. A doubling of sound energy yields an increase of three decibels, so multiple pieces of such equipment operating together would cause relatively small increases in dBA above the decibel levels associated with one piece of such equipment. Assuming three such pieces of construction equipment operating at one time near the boundary of the construction site, the worst-case combined noise level during the site preparation phase of construction is an estimated 91 dBA at a distance of 50 feet from the active construction area. Therefore, the adjacent hotel use could be subjected to periodic construction noise levels of approximately 91 dBA, which exceeds the recommended 85 dBA exterior noise standard for semi residential/commercial uses. **Therefore, temporary construction related noise is considered a potentially significant impact unless mitigated**.

To address temporary construction noise impacts, the City of Camarillo limits construction activities to the hours of 7:00 AM to 7:00 PM Monday through Saturday, and prohibits construction anytime on Sundays and legal holidays. **In combination with existing construction noise standards established by the City of Camarillo, implementation of Mitigation Measures N-2(a) through N-2(d) would reduce construction-related noise impacts to a less than significant level.**

N-2(a) **Mufflers.** During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.

N-2(b) **Stationary Equipment and Equipment Staging.** All equipment staging and stationary construction equipment shall be located near the southern boundary of the project site adjacent to the Ventura Freeway, or in a location that establishes at least a 100 foot setback between the adjacent sensitive receptor and construction staging areas and stationary construction equipment.

N-2(c) **Electrically-Powered Tools and Facilities.** To the extent practical, electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.

N-2(d) **City Enforcement - Noise.** The Building Official and/or the Director of the Department of Community Development of the City of Camarillo shall enforce noise-attenuating construction requirements.

- *Excavation, grading, and other construction activities related to the proposed project shall comply with City restrictions on hours of construction activity.*
- *All construction vehicles, such as bulldozers and haul trucks, shall be prohibited from idling in excess of 5 minutes.*

- *The contractor shall inspect construction equipment to ensure that such equipment is in proper operating condition and fitted with standard factory silencing features. Construction equipment shall utilize all standard factory silencing features, such as equipment mufflers, enclosures, and barriers.*

Locating construction equipment in the southern boundary of the site adjacent to Ventura Freeway, as required in Mitigation Measure N-2(b) will provide over 100 feet of separation between the adjacent residential dwellings and construction noise sources. Noise levels generated from point sources such as industrial machinery typically attenuate (or drop off) at a rate of 6 dB per doubling of distance. Therefore, establishing 100 feet of separation between construction staging areas and stationary construction equipment would reduce construction noise to levels less than significant.

b) Vibration is a unique form of noise. It is unique because its energy is carried through buildings, structures, and the ground, whereas noise is simply carried through the air. Thus, vibration is generally felt rather than heard. Some vibration effects can be caused by noise; e.g., the rattling of windows from truck pass-bys. This phenomenon is caused by the coupling of the acoustic energy at frequencies that are close to the resonant frequency of the material being vibrated. Typically, groundborne vibration generated by manmade activities attenuates rapidly as distance from the source of the vibration as vibration rapidly diminishes in amplitude with distance from the source. In the U.S., the ground motion caused by vibration is measured as particle velocity in inches per second and is referenced as vibration decibels (VdB).

The vibration velocity level threshold of perception for humans is approximately 65 VdB. A vibration velocity of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration in the vicinity of the proposed project are construction equipment, traffic on rough roads, and heavy duty vehicle traffic on roadways. If a roadway is smooth, the groundborne vibration from traffic is barely perceptible.The range of interest is from approximately 50 VdB, which is the typical background vibration velocity, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

Construction activity on the project site would be temporary, and the use of heavy equipment would be limited to the excavation, site preparation and bulding construction phases. As construction of the outer shell of the residential dwellings progresses, the residence itself would contain much of the construction activity, and the likelihood of using bulldozers, jackhammers, and other heavy equipoment decreases. Trucks would still be anticipated to bring construction materials to the site throughout the building phases, which may periodically generate vibrations that could be felt by nearby receptors; however, these vibrations would likely not persist for long periods. Typical groundborne vibration levels for a large bulldozer is 87 VdB at 25 feet, 81 Vdb at 50 feet, and 75 Vdb at 100 feet, based on the Federal Transit Administration's (FTA's) *Transit Noise and Vibration Impact Assessment* (May 2006) as shown in Table 9.

Table 9
Typical Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB		
	25 Feet	50 Feet	100 Feet
Large Bulldozer	87	81	75
Loaded Trucks	86	80	74
Small Bulldozer	58	52	46

Source: Federal Transit Administration, 2006

The existing noise sensitive receptor (Courtyard Hotel Camarillo) is located immediately east of the project site are located within 50 feet of the construction envelope, and would be exposed to groundborne vibration reaching approximately 81 VdB (large bulldozer at 50 feet). The exposure of nearby noise receptors to groundborne vibration reaching 81 VdB would exceed the groundborne velocity threshold level of 72 vibration decibels (VdB) established by the FTA for residences where people normally sleep. However, the construction activity on the project site with the potential to cause ground borne vibration would be temporary in duration and would be limited to the hours of 7:00 AM to 7:00 PM Monday through Saturday, and would be prohibited anytime on Sundays and legal holidays. This restriction would prevent construction vibration impacts from disturbing the sleep of nearby residents. Therefore, the proposed project's construction activity would not involve any vibration sources that would expose people to excessive or prolonged groundborne vibration or groundborne noise levels. **Impacts would be less than significant.**

c) Permanent project-related increases in noise would be primarily due to increases in traffic volumes on nearby street segments. For traffic-related noise, impacts would be significant if project-generated traffic exposes sensitive receptors to unacceptable noise levels. The May 2006 Transit Noise and Vibration Impact Assessment created by the Federal Transit Administration (FTA) recommendations were used to determine whether or not increases in roadway noise associated with the prposed proejct would be considered significant. The allowable noise exposure increase changes with increasing noise exposure, such that lower ambient noise levels have a higher allowable noise exposure increase. Table 10 shows the significance thresholds for increases in traffic related noise levels caused by the project.

Table 10
Significance of Changes in Operational Roadway Noise Exposure

Ldn or Leq in dBA	
Existing Noise Exposure	Allowable Noise Exposure Increase
45-50	7
50-55	5
55-60	3

Table 10
Significance of Changes in Operational Roadway Noise Exposure

Ldn or Leq in dBA	
Existing Noise Exposure	**Allowable Noise Exposure Increase**
60-65	2
65-75	1
75+	0

Source: Federal Transit Administration (FTA), May 2006

Permanent project-related increases in noise would be primarily due to increases in traffic volumes on nearby street segments. As shown in Table 8 existing ambient noise levels along the northern and southern property lines range from 57 dB(A) to 79 dB(A) Leq. To determine the anticipated project related noise impacts along the site's northern and southern property line, the algorithms of the Federal Highway Administration 1998 Traffic Noise Model (FHWA-PD-96-010) were used.
Current traffic conditions for Verdugo Way and Camino Ruiz were obtained from the City of Camarillo Traffic Department. The current traffic count on Verdugo Way is 14,000 ADT near Santa Rosa Road and it drops to 4,000 ADT on the east side of Camino Ruiz. Camino Ruiz has a traffic count of approximately 2,500 ADT. According to the City of Camarillo 2025 traffic map, the traffic counts for these roadways are not expected to increase.

Current Traffic counts and traffic mix for Ventura Freeway were obtained from the California Department of Transportation website. The current traffic count on Ventura Freeway is 126,000 ADT. The off-ramp has a current (year 2007) count of 9,300 ADT.

Current traffic counts were adjusted to reflect 2013 counts. No future traffic counts were available for Ventura Freeway and Veneklasen Associates has estimated the growth in traffic using a 1% increase per year to determine future (year 2023) traffic. The increase in noise level due to traffic by 2024 is calculated to be between 0-1 dB.

Based on the thresholds referenced in Table 10, an increase in noise greater than 1 dBA would be required in order for noise impacts to be considered significant. **Therefore, the project would not generate a perceptible permanent increase in noise within the project study area and operational noise impacts would be less than significant.**

e-f) The project site is located approximately 5 miles west of Camarillo Airport and 14 miles northeast of NAS Point Mugu. However, the site is not located within the low-altitude take-off and landing patterns associated with either airport. Therefore, the proposed project would not expose future residents to significant levels of aircraft noise. **Impacts would be less than significant.**

Camarillo Airport is a general aviation reliever airport and not a private airstrip. **No impact would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XIII. Population and Housing				
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

a) According to data provided by the California Department of Finance (DOF), the population of the City of Camarillo is 66,752 and the City's average household size is 2.67 residents (DOF, 2014). As indicated in Table 11, SCAG estimates that the population of Camarillo will continue to grow to 73,030 persons by the year 2015 and 79,284 persons by the year 2035.

Table 11
Local and Regional Population and Employment Projections

Jurisdiction	2015	2020	2025	2030	2035
Population					
City of Camarillo	73,030	75,072	76,800	78,311	79,284
Ventura County	900,356	937,372	968,697	996,104	1,013,753
Southern California	20,465,819	21,468,934	22,395,124	22,255,378	25,047,292
Employment					
City of Camarillo	36,619	41,635	43,364	44,804	46,080
Ventura County	395,936	416,936	434,937	449,937	463,227
Southern California	8,811,402	9,183,026	9,546,782	9,913,372	10,287,122

Source: SCAG Adopted 2008 RTP Growth Forecast by City

The construction of additional residential dwellings could directly generate population growth by attracting new residents from outside the City, thereby contributing to a permanent increase in population within the project area. The proposed project involves the construction of 129 two and three-story townhomes and flats. Using the City's average household size of 2.72 persons per household, the project could increase the City's overall population by approximately 351 residents. This equates to approximately 6 percent of the City's total projected population growth from the present population to 2015. The project would not require substantial

upgrades to the surrounding utility infrastructure and therefore the project's construction related jobs should be considered short-term in nature. Overall, the project-related population growth was anticipated in SCAG's long-term population forecasts. **Therefore, population growth impacts would be less than significant.**

b,c) The project site is currently a vacant lot with no existing residential dwellings or residences, nor immediately adjacent to any residences. **No impact related to displacement would occur.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XIV. Public Services				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☒	☐
ii) Police protection?	☐	☐	☒	☐
iii) Schools?	☐	☐	☒	☐
iv) Parks?	☐	☐	☒	☐
v) Other public facilities?	☐	☐	☒	☐

a(i) The Ventura County Fire Department (VCFD) would provide fire protection services to the project site. The project site is surrounded by commercial and residential development to the north and industrial development to the east. The fire station nearest to the project site is Fire Station 52, located at 5353 Santa Rosa Road, approximately 2 miles north of the project site.

Development of the proposed residential uses would incrementally increase the demand for fire protection services. However, the City of Camarillo Planning Department would consult directly with the VCFD during the project's design and development review process to determine whether a project is designed in conformance with the City's applicable fire protection development standards, including but not limited to, adequate vehicle access, adequate fire flow, the use proper fire resistant construction methods, and a sufficient number on-site fire hydrants. Furthermore, the proposed project would be subject to payment of a Fire Protection Facilities Fee. The Camarillo Municipal Code Section 16.50.010 states that new construction within the city will create a need for additional fire protection services and a corresponding need for additional or enlarged fire stations from which to provide those services. The purpose of the Fire Protection Facilities Fee is to ensure that the Ventura County

Fire Protection District has sufficient funds to pay for needed new or enlarged fire stations. **Therefore, impacts to fire services would be less than significant.**

a(ii) Police services to the project site would be provided by the Ventura County Sheriff's Office. The Camarillo Police Department is located at 3701 E. Las Posas Road, approximately 3 miles away from the proposed project site. The city has a sworn force of 53, and besides patrol officers, has a youth officer, three school resource officers, a crime prevention officer, seven traffic officers, six detectives and five special enforcement deputies (SED).The proposed development of 129 residential units may incrementally increase the demand for police protection services. However, the project site is within an area that is already served by the Camarillo Police Department and the proposed project would therefore not require the construction of new facilities in order to maintain response time objectives. **Therefore, impacts to police services would be less than significant**.

a(iii) The proposed project site is located within the Pleasant Valley School District (PVSD) and Oxnard Union High School District (OUHSD). The new residences of the proposed project would be within the school boundaries of La Mariposa Elementary School at 4800 Corte Olivas, Las Colinas Middle School at 5750 Fieldcrest Drive, and Adolfo Camarillo High School at 4660 Mission Oaks Boulevard. The proposed development of 129 residential units would incrementally increase in students within the OUHSD and PVSD. According to the State Allocation Board under the Office of Public School Construction, the statewide average student yield factor is 0.5 elementary students for every one single-family residence, 0.1 middle school students for every one single-family residence, and 0.2 high school students for every one single-family residence. Therefore, the proposed project would generate an estimated total of 104 students, including 65 elementary students, 13 middle school students, and 26 high school students. The students generated by the proposed project would represent an incremental increase in the students served by OUHSD and PVSD schools.

To offset a project's potential impact on schools, Government Code 65995 (b) establishes the base amount of allowable developer fees a school district can collect from development projects located within its boundaries. The fees obtained by PVSD and OUHSD are used to maintain the desired school capacity and the maintenance and/or development of new school facilities. The project proponents would be required to pay the state-mandated school impact fees. Pursuant to Section 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization." **Therefore, impacts would be less than significant.**

a(iv) Please refer to Section XV, Recreation.

a(v) Impacts to other public facilities (e.g. sewer, storm drains, and roadways) are discussed in Sections XVI (Transportation/Traffic) and Section XVII (Utilities and Public Services) of this Initial Study.

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XV. Recreation				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

a) The City of Camarillo General Plan Recreation Element identifies all of the parks in the vicinity of the project site and throughout the City. The total park acreage within the City is approximately 181 acres, with additional park acreage proposed or being constructed (City of Camarillo, 2002). Woodside Park is the park closest to the proposed project site (traveling on roads). The park is located approximately 1 mile southwest of the project site. Woodside Park is a neighborhood park 4.9 acres in size and features play equipment.

The project would construct 129 two and three-story townhomes, which would incrementally increase the demand for park facilities. However, the project also proposes recreational uses on-site, which will relieve the demand and usage of recreational facilities nearby. **Impacts on existing City parks would be less than significant.**

b) The proposed project would include a spa, pool, and cabana. However, these would be private recreational uses by project residents, and located in the center of the project site away from public access. **Impacts associated with the construction of on-site recreational facilities would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. Transportation/Traffic				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation, including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and	☐	☐	☒	☐

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVI. Transportation/Traffic				
Would the project:				
freeways, pedestrian and bicycle paths, and mass transit?				
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?	☐	☒	☐	☐
e) Result in inadequate emergency access?	☐	☐	☐	☒
f) Conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance or safety of such facilities?	☐	☐	☒	☐

The project's potential impact on the circulation system within the City of Camarillo and immediately surrounding areas was evaluated by Orosz Engineering Group, Inc. during April of 2014 (June 2014). The full text of this Traffic Impact Analysis (TIA) can be found in Appendix D of this Initial Study.

Existing Setting

The project site is located east of Santa Rosa Road, north of the Ventura Freeway . The project is located on the southwest corner of the intersection of Camino Ruiz and Verdugo Way. Access to the project site will be provided by an internal roadway connecting to Camino Ruiz to the east and the existing commercial center to the west. Internal loop roads will provide access to each of the residential dwellings.

The project site and the surrounding areas are served by a circulation system comprised of highways, arterial streets, and collector streets. A description of the study-area roadways is provided below.

Ventura Freeway, located south of the project site, is a multi-lane freeway which serves as a major arterial for the City and is the principal intercity north-south route through Ventura County. Although it is a north-south highway in the State freeway system, U.S. 101 is aligned in the east-west direction in the vicinity of Camarillo. US Highway 101 is a 6-lane freeway within the study area. Ventura Freeway provides regional access to the project area via the Santa Rosa Road interchange.

Santa Rosa Road is a Primary Arterial that intersects Ventura Freeway and travels northerly through Camarillo. Within the study area, Santa Rosa Road is a four lane arterial with traffic signal controlled intersections at major cross streets.

Pleasant Valley Road is a Primary Arterial that extends from Port Hueneme to Ventura Freeway southerly of the project site. Within the study-area, Pleasant Valley Road is a four-lane roadway that extends south of the Ventura Freeway, then bends east-west and provides access to Port Hueneme and Oxnard.

Adolfo Road is a Primary Arterial that travels in an east-west orientation northerly of Ventura Freeway and provides internal circulation for the City of Camarillo northerly of the freeway.

Verdugo Way is a primary collector roadway that serves the project site and surrounding light industrial/commercial area easterly of Santa Rosa Road and northerly of Ventura Freeway.

Camino Ruiz is a local collector providing direct access to the project site. There are two travel lanes, one in each direction, with on-street parking provided on both sides of the street.

Traffic Study Methodology

The traffic analysis focuses on the operating conditions at key intersections during peak travel periods which typically occur during the morning and afternoon commute hours. To determine the operating conditions at the study intersections, a level of service (LOS) rating scale is commonly used. The intersection operations are rated on a scale that compares traffic volumes to capacity and assigns a letter value to this relationship. The letter rating ranges from A to F with LOS A representing the best or free flow conditions and LOS F representing very congested conditions.

Pursuant to City requirements, the Intersection Capacity Utilization Methodology (ICU) was used to analyze signalized intersections and the results are shown in terms of a volume-to-capacity ratio with associated level of service (LOS) rating. Intersection operations for unsignalized intersections were calculated using methodologies outlined in the Highway Capacity Manual (HCM) and the results are represented in terms of average seconds of delay for all approaches at the intersection. The level of service rating criteria and volume-to-capacity and delay relationships are summarized in Table 12 below:

Table 12
Intersection Level of Service Criteria

LOS	Signalized intersections (V/C Ratio)	Unsignalized intersections (Sec. of delay)	Definition
A	< 0.60	=< 10	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and =< 15	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles
C	0.71 – 0.80	> 15 and =< 25	Conditions of stable flow, delays are low to moderate; full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 25 and < 35	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 35 and < 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	> 1.00	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal

The Circulation Element of the General Plan identifies the acceptable level of service for City roadways and intersections. Intersections operating at LOS C or better during the peak traffic hours are considered operating at acceptable levels. Brief periods of LOS D (up to a V/C ratio of 0.83) during AM or PM peak hours are generally considered acceptable.

Existing Conditions

The project analysis focused on nine nearby intersections that were selected by the City of Camarillo Public Works Department Traffic Division. The intersection turning movement counts were collected ruing the 7-9AM and 4-6PM peak periods of a typical weekday. The traffic impact analysis evaluated the intersection operations for:

1. Pleasant Valley Road at Pancho Road
2. Santa Rosa Road at EB Ventura Freeway Ramps
3. Santa Rosa Road at WB Ventura Freeway Ramps
4. Santa Rosa Road at Verdugo Way
5. Santa Rosa Road at Adolfo Road
6. Santa Rosa Road at Los Pueblos Drive
7. Mission Oaks Boulevard at Adolfo Road
8. Camino Ruiz at Verdugo Way
9. Camino Ruiz at Adolfo Road

As shown in Table 13, all of the signalized intersections currently operate at LOS C or better during both AM and PM peak hours and meet the desired operating standards set by the City.

Table 13
Existing AM and PM Peak Hour Intersection Level of Service

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.58/LOS A	0.65/LOS B
Santa Rosa Road at EB Ventura Freeway Ramps	Traffic Signal	0.64/LOS B	0.72/LOS C
Santa Rosa Road at WB Ventura Freeway Ramps	Traffic Signal	0.52/LOS A	0.59/LOS A
Santa Rosa Road at Verdugo Way	Traffic Signal	0.64/LOS B	0.56/LOS A
Santa Rosa Road at Adolfo Road	Traffic Signal	0.70/LOS B	0.63/LOS B
Santa Rosa Road at Los Pueblos Drive	Traffic Signal	0.70/LOS B	0.67/LOS B
Mission Oaks Boulevard at Adolfo Road	Traffic Signal	0.56/LOS A	0.57/LOS A
Camino Ruiz at Verdugo Way	2-way STOP	3.4 sec/LOS A	4.7 sec/LOS A
Camino Ruiz at Adolfo Road	2-way STOP	2.9 sec/LOS A	4.0 sec/LOS A

Source: Orosz Engineering Group, Inc. 2014

Existing Plus Approved Projects and Existing Plus Project Conditions Analysis

To determine the potential impact on the intersection levels of service, an estimate of the proposed project trips is required. The project land use trip generation rate from the CTAM was applied to the number of housing units proposed to estimate the number of trips that may be generated by the project. The results of these calculations are summarized in Table 14. The proposed project is expected to generate a total of 1,160 Average Daily Trips (ADT) with 91 AM and 94 PM peak hours trips.

Table 14
Proposed Project Trip Generation

Proposed Project			CTAM Trip Rates			
	Dwelling Units	ADT	AM In	AM Out	PM In	PM Out
Residential Condo	145 du	8	0.12	0.51	0.42	0.23
			Project Trips			
Residential Condo	145 du	1,160	17	74	61	33

Source: Orosz Engineering Group, Inc. 2014

Once the number of project trips was determined, the distribution of the project related trips were estimated throughout the study area using data from previous studies and general knowledge of traffic patterns in the area. The distribution percentages are summarized in Table 15.

Table 15
Project Traffic Distribution

Roadway	Project Traffic Distribution Percentage
US Highway 101 – North	30%
US Highway 101 – South	30%
Adolfo Road – West	15%
Santa Rosa Road – North	5%
Pleasant Valley Road – South/West	5%
Pancho Road – South/East	5%
Local Trips with Adjacent Commercial/Industrial Complexes	10%

Source: Orosz Engineering Group, Inc. 2014

With the distribution and assignment of the project related traffic, the intersection operation was recalculated with the existing plus approved project baseline traffic volumes to determine if the project would result in a potentially significant impact. As seen in Table 16, all of the study area intersections will continue to operate at LOS C or better with the addition of the proposed project traffic volumes.

Table 16
Existing Plus Approved Plus Project AM and PM Peak Hour Intersection Level of Service

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Panch Road	Traffic Signal	0.61/LOS B	0.67/LOS B
Santa Rosa Road at EB Ventura Freeway Ramps	Traffic Signal	0.69/LOS B	0.76/LOS C
Santa Rosa Road at WB Ventura Freeway Ramps	Traffic Signal	0.55/LOS A	0.63/LOS B
Santa Rosa Road at Verdugo Way	Traffic Signal	0.69/LOS B	0.64/LOS B
Santa Rosa Road at Adolfo Road	Traffic Signal	0.75/LOS C	0.68/LOS B
Santa Rosa Road at Los Pueblos Drive	Traffic Signal	0.71/LOS C	0.69/LOS B
Mission Oaks Boulevard at Adolfo Road	Traffic Signal	0.57/LOS A	0.60/LOS A
Camino Ruiz at Verdugo Way	2-way STOP	5.5 sec/LOS A	9.5 sec/LOS A
Camino Ruiz at Adolfo Road	2-way STOP	3.1 sec/LOS A	2.9 sec/LOS A

Source: Orosz Engineering Group, Inc. 2014

Traffic Signal Warrants

Since the two unsignalized intersections of Camino Ruiz at Verdugo Way and Adolfo Road have been identified by the City as candidates for future installation of a traffic signal, an analysis was conducted to determine if the warrants to install a traffic signal were met based on the existing conditions. The City utilizes the California Manual on Uniform Traffic Control Devices (CA-MUTCD) as a guide to determine if a traffic signal should be installed. The MUTCD has developed an evaluation system based on traffic volumes, pedestrian volumes, intersection safety, and other geometric factors to provide guidance on when to consider signalization of a specific location.

Analysis was conducted for the two unsignalized intersections. Implementation of the proposed project would contribute to the need for traffic signals at the intersections of Camino Ruiz at Adolfo Road and Verdugo Way. The addition of only the approved projects or the proposed

project traffic volumes would not create the need to signalize the two intersections. The combination of existing, approved projects and the proposed project traffic would result in traffic signal warrants being met. The proposed project's fair share contribution towards the signalization improvement is 17% for the Verdugo Way/Camino Ruiz intersection and 5% Adolfo Road/Camino Ruiz intersections based on the contribution of project traffic volumes divided by the total existing plus approved plus proposed project traffic volumes.

a-b) The proposed project is expected to generate a total of 1,160 Average Daily Trips (ADT) with 91 AM and 94 PM peak hours trips. The traffic generated by the proposed project would result in less than significant impact on study area intersections. Nevertheless, the proposed project would be subject to payment of the City of Camarillo Traffic Impact Mitigation fees for new development based on the increased traffic volume resulting from the proposed project. The funds accumulated by the City through assessment of these fees are earmarked for improvements to the City's transportation network, including arterial roads and intersections, for the proposed project. **Therefore, project specific traffic impacts would be less than significant.**

Cumulative traffic volumes, including approved projects plus the proposed project would require the installation of a traffic signal at the intersections of Verdugo Way/Camino Ruiz and Adolfo Road/Camino Ruiz. **Therefore, cumulative traffic impacts are considered potentially significant unless mitigated. The implementation of Mitigation Measure T-1 would reduce cumulative traffic impacts to a less than significant level.**

T-1 **Fair Share Contribution Towards Traffic Signal Installation.** Prior to issuance of a grading permit for the first residential unit, the applicant shall contribute 17% of the design and installation costs associated with the construction of a traffic signal at the Verdugo Way/Camino Ruiz intersection and 5% of the design and installation costs associated with the construction of a traffic signal at the Adolfo Road/Camino Ruiz intersection. The costs associated with the design and installation of the traffic signals shall be calculated by the City of Camarillo Public Works Department prior to issuance of any grading permits for the site.

c) No changes to air traffic patterns would result from the proposed project. The proposed school is over five miles east of the Camarillo Airport. **No impact would occur.**

d)The alignment of Camino Ruiz from Verdugo Way south to the Ventura Freeway is curvilinear and on-street parking is allowed on this section of Camino Ruiz. The combination of the curved road and on-street parking significant reduces the visibility of cross traffic for drivers leaving driveways along this section of Camino Ruiz. **Therefore, impacts are considered potentially significant unless mitigated. Implementation of Mitigation Measure T-2 would reduce impacts to less than significant.**

T-2 **Camino Ruiz Parking Restriction.** Prior to issuance of final occupancy permits for the project, the applicant shall install signs prohibiting on-street parking on both sides of Camino Ruiz from Verdugo Way to the Ventura Freeway.

e) Access to the project site would be provided by an internal roadway connecting to Camino Ruiz on the east and the existing commercial shopping center to the west. Additional internal roadways and driveways would provide access to the individual residential units and would be designed in accordance with all City regulations, including those pertaining to emergency access. **Impacts associated with emergency access would therefore be less than significant.**

f) The project is not expected to conflict with adopted policies, plans, or programs supporting alternative transportation. Implementation of the project involves the development of residential condominiums and due to its location, the project does provide opportunities to walk or bike to work (alternative transportation) in the nearby industrial areas. **Therefore, impacts would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVII. Utilities and Service Systems				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☒	☐	☐
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Setting

The project site is currently vacant and therefore, does not create demand or generate the need for utilities such as water, wastewater, or solid waste. The water and wastewater services would be provided by the Camrosa Water District.

Water

The Camrosa Water District would provide water service to the project area. Water sources include imported water from the Metropolitan Water District (MWD) of Southern California sold to Camrosa through wholesaler Calleguas Municipal Water District (CMWD), wells in the Tierra Rejada, Santa Rosa, and Pleasant Valley groundwater basins, non-potable, and recycled water from the Conejo Creek Diversion Project and the Camrosa Water Reclamation Facility, respectively.

Table 17 provides a summary of water supply sources for the District, projected for the years 2010 through 2035. These projected water supplies include water from the Metropolitan Water District as well as the aforementioned groundwater basins and water recycling facilities. With the District's combination of State Water provided through CMWD, groundwater provided by wells in the Tierra Rejada, Santa Rosa and Pleasant Valley groundwater basins, and the non-potable and recycled water from the Conejo Creek Diversion Project and the Camrosa Water Reclamation Facility, respectively, the District currently (2010) has a water supply of 19,561 acre feet per year (AFY). The District's 2010 Urban Water Management Plan forecasted future supply sources to increase to 27,141 AFY in 2015 and 30,569 AFY by 2035 due to the following factors:

- beginning of production from the Perched Zone;
- construction of a second well in the Tierra Rejada Basin;
- groundwater reclamation projects in the Santa Rosa Basin;
- an increase in Camrosa's Fox Canyon GMA credit allocation as a result of additional development within the District that would increase supply from the Pleasant Valley Basin; and
- increased availability of non-potable water from Camrosa water reclamation facility (WRF).

However, further information resulting from reduced non-potable supplies, groundwater safe yield studies, and recent drought restrictions on imported water have resulted in lower overall future water supplies.

Table 17
Current and Projected Normal Year Water Supplies (AFY)

Sources	2010	2015	2020	2025	2030	2035
Potable Water Supply						
CMWD	5,639	7,900	7,900	7,900	7,900	7,900
Tierra Rejada Basin	428	928	928	928	928	928
Santa Rosa Basin	2,312	3,530	3,530	3,530	3,530	4,650
Pleasant Valley Basin	807	860	935	935	935	935

Table 17
Current and Projected Normal Year Water Supplies (AFY)

Sources	2010	2015	2020	2025	2030	2035
Perched Zone	0	1,000	1,000	1,000	1,000	1,000
Potable Water Subtotal	*9,186*	*14,338*	*14,913*	*14,913*	*14,913*	*16,033*
Non-Potable Water Supply						
HCWWTP (surface)	8,853	10,667	10,667	10,667	10,667	10,667
Camrosa WRF (recycled)	1,522	1,696	1,870	2,044	2,044	2,044
CSD WTF (recycled)	0	440	680	1,070	1,430	1,825
Non-Potable Water Subtotal	*10,375*	*12,803*	*13,217*	*13,781*	*14,141*	*14,536*
Total (Potable + Non-Potable)	***19,561***	***27,141***	***28,130***	***28,694***	***29,054***	***30,569***

Sources: Camrosa Water District UWMP, 2010

As indicated in Tables 17 through 20, Camrosa is currently able to supply enough total water to meet projected demand within its service area through the year 2035 under normal, single dry year, and multiple dry year scenarios.

The District's existing water distribution system consists of approximately 190 miles of 6-inch through 20-inch diameter pipelines. Other components of the District's water distribution system include: six reservoirs (four above ground and two underground) with a total combined capacity of 13.4 million gallons, four groundwater wells, eight connections for importing water from CMWD, three pumping stations, and 11 pressure reducing valve locations. Water service to the project site is proposed to be provided by a 10-inch diameter Camrosa potable water line located within Camino Ruiz and the 12-inch diameter potable Camrosa water line in Verdugo Way.

In June 2009, in response to the severe reductions in State Water Project water availability, Camrosa's Board of Directors declared a moratorium on new development water services within the District's service area that results in no unmitigated growth in the use of potable, non-potable, and recycled water (Camrosa Water District, 2014). The moratorium was made permanent in 2012. As currently proposed, total water demand for the Project will be supplied by the Camrosa Water District through development of new potable water resources utilizing a mitigation plan prepared by the applicant that must first be approved by Camrosa. All mitigation is the responsibility of the Applicant. In order for domestic water service and fire flow for protection to be made, conditions such as a Water Master Plan and Mitigation Plan offsetting total maximum water day demands must be met. The project must demonstrate a way to reduce its water demand in the District by the same amount the project will increase it, thereby having a zero net impact on water demand and use in the District (Camrosa, 2013) and comply with the City's Water Efficient Landscape Ordinance (Chapter 14.14). Camrosa Water District has issued a Conditional Water Availability Letter for the project (dated May 22, 2014), which includes all of the conditions required in order for domestic water service and fire flow for protection to be provided to the project site. The Conditional Water Availability Letter is included in Appendix G. As such time as the mitigation plan is developed and approved, the developer is required to not exceed maximum day demands as shown in the Water Master Plan as 144,028 GPD.

Table 18
Normal Year Projected Supply/Demand Comparison (AFY)

	2015	2020	2025	2030	2035
Potable Water					
Projected Supply	12,926	13,501	13,501	13,501	14,173
Projected Demand	11,238	10,921	10,585	9,868	9,781
Surplus	*1,688*	*2,580*	*2,916*	*3,633*	*4,392*
Non-Potable Water					
Projected Supply	14,215	14,629	15,193	15,553	16,396
Projected Demand	7,642	8,800	9,652	10,415	10,415
Surplus	*6,114*	*5,829*	*5,541*	*5,138*	*5,981*
Total Water (Potable + Non-Potable Water)					
Projected Supply	27,141	28,130	28,694	29,054	30,569
Projected Demand	18,203	18,990	19,464	19,475	19,475
Surplus	***8,938***	***9,140***	***9,230***	***9,579***	***11,094***

Source: Camrosa Water District UWMP, 2010

Table 19
Single Dry Year Projected Supply/Demand Comparison (AFY)

	2015	**2020**	**2025**	**2030**	**2035**
Potable Water					
Supply	12,296	13,501	13,501	13,501	14,173
Demand	11,912	11,576	11,220	10,461	10,368
Surplus	*1,014*	*1,925*	*2,281*	*3,040*	*3,805*
Non-Potable Water					
Supply	14,215	14,629	15,193	15,553	16,396
Demand	8,101	9,328	10,231	11,040	11,040
Surplus	*6,114*	*5,301*	*4,962*	*4,513*	*5,356*
Total Water (Potable + Non-Potable Water)					
Supply	27,141	28,130	28,694	29,054	30,569
Demand	19,296	20,129	20,632	20,643	20,643
Surplus	***7,845***	***8,001***	***8,062***	***8,411***	***9,926***

Source: Camrosa Water District UWMP, 2010

Table 20
Multiple Dry Year Projected Supply/Demand Comparison (AFY)

	2015	2020	2025	2030	2035
Potable Water					
Supply	12,926	13,501	13,501	13,501	14,173
Demand	11,912	11,576	11,220	10,461	10,368
Surplus	1,014	1,925	2,281	3,040	3,805
Non-Potable Water					
Supply	14,215	14,629	15,193	15,553	16,396
Demand	9,018	10,384	11,389	12,290	12,290
Surplus	5,197	4,245	3,804	3,263	4,106
Total Water (Potable + Non-Potable Water)					
Supply	27,141	28,130	28,694	29,054	30,569
Demand	20,752	21,648	22,189	22,201	22,201
Surplus	**6,389**	**6,482**	**6,505**	**6,853**	**8,368**

Source: Camrosa Water District UWMP, 2010

Wastewater

Wastewater generated by the proposed project would be treated by the Camrosa Water District. The Camrosa Water District operates a Water Reclamation Facility 3.5 miles northeast of the project site with a capacity of 1.5 Million Gallons per day (Camrosa Water District). The facility has an average daily flow of 1.3 million gallons per day (MGD) and generates 474.5 million gallons of tertiary filtered disinfected water per year (California Regional Water Quality Control Board 2003).

As stated in the Sewer Master Plan Letter prepared for the project by Penfield and Smith (Appendix F), the preliminary onsite sewer conveyance system design is proposed as part of the project. The proposed onsite sewer conveyance system would utilize 8-inch sewer pipe set at a slope of approximately 0.006 feet per foot. The onsite sewer conveyance system would connect to the existing public sewer system at the southern manhole of Camino Ruiz Drive. The public sewer line in Camino Ruiz is an 8-inch main, which flows north. The complete Wastewater Studies can be found in Appendix G.

Solid Waste

Solid waste disposal services in the City of Camarillo are provided by private contract through E.J. Harrison & Sons (City of Camarillo, 2011). Solid waste collected in Camarillo is taken to the Gold Coast Recycling Facility in Ventura where recoverable materials are removed from the waste stream for recycling (E.J. Harrison & Sons, 2011). Typical recyclable materials include aluminum, glass, paper, metals, plastics, cardboard, and yard waste. Materials not recovered at this facility are transported to the landfills described below.

The City of Camarillo is served by four landfills; Calabasas Sanitary Landfill, Chiquita Canyon Sanitary Landfill, Simi Valley Landfill and Toland Landfill. The Calabasas Sanitary Landfill is located at 5300 Lost Hills Road in Calabasas. The landfill has a permitted daily intake of 3,500

tons per day and currently receives 1,044 tons per day. The Chiquita Canyon Sanitary Landfill is located at 29201 Henry Mayo Drive in the City of Valencia. The landfill has a permitted daily intake 6,000 tons per day and currently receives 2,645 tons per day. The Simi Valley Landfill is located at 2801 Madera Road, in Simi Valley. The landfill has a permitted daily intake of 3,000 tons and currently receives 2,294 tons per day. The Toland landfill is located at 3500 Toland Road in Santa Paula. The landfill has a permitted daily intake of 1,500 tons/day and currently receives an average of 1,075 tons per day. Table 21 summarizes the capacity and intake of each landfill.

Table 21
Existing Landfill Capacity and Intake

Landfill	Estimated Closure Date	Permitted max daily intake (tons/day)	Average Daily Intake (tons/day)	Remaining Permitted Daily Intake (tons/day)
Calabasas Sanitary Landfill	2028	3,500	1,044	2,456
Chiquita Canyon Sanitary Landfill	2019	6,000	2,645	3,355
Simi Valley Landfill	2034	3,000	2,294	706
Toland Road Landfill	2027	1,500	1,075	425
Totals		**14,000**	**7,058**	**6,942**

Source: Final Environmental Impact Report, City of Camarillo Tentative Tract 5812, Springville LLC SCH#2010081043, June 2011.

a, b, e) Project development would involve new residences that would generate wastewater for disposal to the Camrosa sewer system. The project would not generate any wastewater that would require any additional treatment. Therefore, the project would not exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board. **Impacts would be less than significant.**

Implementation of the proposed project would increase the wastewater generation on the project site above existing conditions. Based on the Camrosa Water District Sanitary Sewer Design and Construction Standards, the site will have an expected residential density and sewer load of 2.15 persons per multi-family unit and 100 gallons per day per capita, respectively. As such the proposed 129 unit multi-family project will generate an average flow of approximately 27,735 gallons per day (or approximately 30.51 acre feet per year) of wastewater. This represents a 2.1% increase in wastewater treatment, and would use 13.8% of the CWRF unused treatment capacity. Therefore, existing wastewater treatment facilities would have sufficient capacity to handle wastewater generated by the proposed project. **Impacts would be less than significant.**

c) The proposed project site is currently undeveloped and will undergo grading. The proposed project would increase the total impervious surfaces on the project site through the development of the 129 residential townhomes and parking areas. However, as identified in *Section IX Hydrology and Water Quality*, the project proposes to construction a bioretention basin at the southwest corner of the project site, which would help reduce the effective imperviousness of the site by treating and retaining onsite storm water runoff. The Minimum Maintenance Requirements for Post-Construction Treatment Devices includes annual and semiannual inspections and control for soil quality and erosion. Adherence to the Minimum

Maintenance Requirements combined with the construction of bioretention basin would reduce impacts to a less than significant level.

d) Project development would involve new residences that would generate water demand from within the Camrosa Water District. Based on Camrosa water standards of 2.1 persons per multi-family unit and 220 gallons per day capita water use, the proposed 129 unit multi-family project will demand approximately 59,598 gallons per day (65.5 Acre-feet per year). The design average day demand (ADD) for the project is 46.5 gallons per minute (gpm). Using Table 2.6 of the Camrosa Water Standards indicating maximum day demand (MDD) and peak hour demand (PHD) factors of 2.15 and 4.50 of the ADD, respectively, the following demands loads are estimated for the proposed project:

ADD = 46.5 gpm
MDD = 100 gpm
PHD = 209 gpm

As discussed above, during Normal Year through Multiple Dry Year conditions, the 2010 Camrosa Water District UWMP had projected a surplus capacity ranging from 8,938 to 6,389 acre feet per year (AFY) in 2015 and new water demand from the proposed project would account for less than 1% of the Camrosa Water District surplus. However, further information resulting from reduced non-potable supplies, groundwater safe yield studies, and recent drought restrictions on imported water have resulted in lower overall future water supplies. Therefore, existing water supplies are not sufficient to service the proposed project without mitigation. **Impacts would be potentially significant, unless mitigated**. **With implementation of the mitigation measures UTL-1 through UTL-5, impacts to water services would be less than significant.**

UTL-1 **Water Master Plan.** Prior to issuance of a building permit, the applicant must submit a Water Master Plan and obtain approval of the Water Master Plan from Camrosa Water District. The Master Plan shall analyze and include water demands (both potable & non-potable) for both domestic and common areas, general pipe sizing and alignment for potable and non-potable service, fire flow analysis, service pressures for each lot, and any distribution and storage infrastructure.

UTL-2 **Easements.** Prior to recordation of tract or parcel maps, the applicant will grant to Camrosa Water Distrct appropriate on-site easements for the purpose of constructing, serving, and maintaining potable and non-potable and water lines and facilities, including areas that may be beneficial for water service to adjacent properties.

UTL-3 **Granting of Rights.** Prior to issuance of a Water Will-Serve Letter, the applicant must grant all underlying water rights and wells to the District.

UTL-4 **Mitigation Plan.** Prior to issuance of a Water Will-Serve Letter, the applicant shall provide the District with a Mitigation Plan to offset total maximum day water demands, as outlined below. Demand supplied by the Camrosa Water District shall be offset through the development of new water resources. The development of the Mitigation Plan and the financing of mitigation projects therein are the responsibility of the applicant. Mitigation cannot negatively affect the existing customer base, and the Mitigation Plan must be reviewed and approved by the District. The following is a list of required conditions for the Mitigation Plan:

a. New demand, potable and non-potable, must be mitigated by developing new water.
b. Mitigation cannot increase the use of existing water supplies.
c. Mitigation cannot reduce the District's self-reliance.
d. Mitigation cannot increase the financial burden of the existing customer base.

UTL-5 **Initial Payment.** Prior to issuance of a Water Will-Serve Letter, the applicant must pay 20% of the estimated cost of the project described in the Mitigation Plan or enter into a sub-division improvement agreement as approved and accepted by the General Manager.

f, g) Operation of the proposed project would generate solid waste. Table 22 estimates the solid waste generated by the proposed project.

Table 22
Estimated Solid Waste Generation

Project Lot Size	Generation Rate	Annual Generation	Daily Generation [a]
377,230 sf	0.0013 tons/sf/year	490 tons	1.34 tons

Source: Ventura County Solid Waste Management Department, Guidelines for Preparation of Environmental Assessments for Solid Waste Impacts, May 1998.
Note: Project Lot Size is converted from 8.66 acres to 377,230 square feet

As identified above in Table 22, the proposed project would generate an estimated 490 tons of solid waste per year or 1.34 tons per day. This would incrementally contribute to cumulative solid waste generated in Camarillo, which is first sorted at the Del Norte MRF and then taken to either the Toland Road Landfill east of Santa Paula or the Simi Valley Landfill. The project's contribution of 1.34 tons per day would represent approximately 0.1 percent of the Del Norte MRF's excess daily permitted capacity of 1,300 tons per day. Assuming a 50 percent solid waste diversion rate as required by AB 939, the project's solid waste contribution would represent approximately 0.27 percent of the Toland Road Landfills average daily 250 ton excess capacity and 0.17 percent of the Simi Valley Landfill's average 400 ton daily excess capacity. Therefore, sufficient capacity exists to accommodate the proposed project. **Impacts to solid waste would be less than significant.**

	Potentially Significant Impact	Potentially Significant Unless Mitigation Incorporated	Less than Significant Impact	No Impact
XVIII. Mandatory Findings of Significance				
a) Does the project have the potential to substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) Construction activities would occur within a vacant parcel, which includes limited biological resources. However, mitigation measures have been identified (**Mitigation Measures BIO-1(a) and BIO-1(b))** to reduce potential impacts to biological resources to a less than significant level. Although the project area is not anticipated to contain any known paleontological or archaeological resources, it may contain previously undetected subsurface archaeological resources. Mitigation measures have been identified (**Mitigation Measures CR-1)** to mitigate any impacts associated with the discovery of previously undetected subsurface cultural resources during excavation activities. Adherence to this measure would reduce cultural impacts to a less than significant level. **After mitigation, potential impacts of the project on these resources would be less than significant**.

b) As presented in the discussion of environmental checklist Sections I through XVII, the project would have no impact, a less than significant impact, or a less than significant impact after mitigation with respect to all environmental issues. Due to the limited scope of direct physical impacts to the environment associated with the proposed project, the impacts are project-specific in nature. **Consequently, the project along with other cumulative projects would result in a less than significant cumulative impact with respect to all environmental issues.**

c) In general, impacts to human beings are associated with air quality, hazards and hazardous materials, and noise impacts. The development of the proposed project would contribute to air

pollutant emissions on a short-term basis. As a result, the project would be required to comply with regional rules that assist in reducing short-term air pollutant emissions. The purpose of SDAQMD Rule 403 is to reduce the amount of particulate matter in the atmosphere resulting from man-made fugitive dust sources. In addition, **Mitigation Measures AQ-1 and AQ-2** are required to reduce construction related air quality impacts. Adherence to these measures would reduce short-term construction air quality impacts to a less than significant level. Construction related noise and exterior noise levels were found to exceed applicable thresholds. **Mitigation Measures N-1 and N-2 are required to reduce noise impacts to less than significant levels. With implementation of these measures, potential impacts on human beings would be less than significant.**

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Mitigation and Monitoring Program

MITIGATION MONITORING AND REPORTING PROGRAM

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). The Mitigation Monitoring and Reporting Program (MMRP) is designed to ensure compliance with adopted mitigation measures during project implementation. For each mitigation measure recommended in the Initial Study-Mitigated Negative Declaration (IS-MND), specifications are made herein that identify the action required and the monitoring that must occur. In addition, a responsible agency is identified for verifying compliance with individual conditions of approval contained in the MMRP.

The following table will be used as the checklist to determine compliance with each required mitigation measure.

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
Air Quality							
AQ-1 Ventilation Filter Screens. The following note shall appear on building permits issued for the site and compliance shall be verified prior to issuances of final occupancy permits for the site. • Forced air ventilation with filter screens on outside air intake ducts shall be provided for all residential units proposed on the project site. The filter screens shall be capable of removing at least 95% of the particulate matter including fine particulate matter (PM<2.5 micron).	Review building permits for presence of ventilation filter screen note	Prior to issuance of final occupancy permit	Once	City of Camarillo			
AQ-2 Resident Notification A brochure notifying the future residents of the property owner's responsibility for maintaining the filter screens shall be prepared and provided at the time of occupancy. A sample of this brochure shall be provided to the City for review and approval prior to issuance of final occupancy permits for the Project. In addition, a notice of the diesel particulates risk hazard and the need for screen maintenance shall be placed in the property title.	Review and approve final brochure for resident notification	Prior to issuance of final occupancy permits	Once	City of Camarillo			
AQ-3 Weatherproofing. The following note shall appear on all building permits issued for the project site. • Windows and doors shall be fully weatherproofed with caulking and weather-stripping that is rated to last at least 20 years.	Review building permits for presence of weatherproofing note	Prior to issuance of all building permits	Once	City of Camarillo			
AQ-4 Construction Equipment Controls. The following shall be implemented during construction to minimize emissions of ROG, NO_x and PM associated with off-road diesel construction equipment. • *Heavy-duty diesel-powered construction equipment shall be compliant with federally mandated clean diesel engines (EPA Tier 4) shall be*	Monitor construction to ensure compliance with mitigation measure	Prior to and during construction	As needed during construction	City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
utilized wherever feasible. • *Construction contractors shall minimize equipment idling time throughout construction. Engines shall be turned off if idling would be for more than five minutes.* • *Equipment engines shall be maintained in good condition and in proper tune as per manufacturers' specifications.* • *The number of pieces of equipment operating simultaneously shall be minimized.* • *Construction contractors shall use alternatively fueled construction equipment (such as compressed natural gas, liquefied natural gas, or electric) when feasible.* • *The engine size of construction equipment shall be the minimum practical size.*							
AQ-5 Fugitive Dust Control Measures. The following shall be implemented during construction to minimize fugitive dust emissions: • *Water trucks must be used during construction to keep all areas of vehicle movements damp enough to prevent dust from leaving the site. At a minimum, this will require three daily applications (once in the morning, once at midday and once at the end of the workday). The construction site watering frequency shall be increased whenever the sustained wind speed exceeds 15 mph. All clearing, grading, earth moving, or excavation activities must cease during periods of high winds (i.e., greater than 25 mph averaged over one hour) so as to prevent excessive amounts of dust.* • *Soil with 5% or greater silt content*	Monitor construction to ensure compliance with mitigation measure	Prior to and during construction	As needed during construction	City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
that is stockpiled for more than two days must be covered, kept moist, or treated with soil binders to prevent dust generation. • *Trucks transporting material must be tarped from the point of origin or must maintain at least two feet of freeboard.* • *Soil stabilizers must be applied to unpaved roads to prevent excess amounts of dust.* • *All material excavated or graded must be treated with soil binders or must be sufficiently watered at least three times daily with complete coverage, preferably in the morning, midday and after work is done for the day.* • *Ground cover must be replaced in disturbed areas as quickly as possible.* • *The contractor must provide adequate loading/unloading areas that limit track-out onto adjacent roadways through the utilization of wheel washing, rumble plates, or another method achieving the same intent.* • *All material transported off-site must be securely covered to prevent excessive amounts of dust.* • *All property owners and building occupants located within 500 feet of the construction site must be sent a notice regarding the construction schedule of the proposed project. A sign, legible at a distance of 50 feet must also be posted in a prominent and visible location at the construction site, and must be maintained throughout the construction process. All notices and the signs must*							

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
indicate the dates and duration of construction activities, as well as provide a telephone number where interested parties can inquire about the construction process and register complaints. • *These control techniques must be indicated in project specifications. Compliance with the measure must be subject to periodic site inspections by the City.*							
BIOLOGICAL RESOURCES							
BIO-1(a) Nesting Birds. Nesting Birds. If vegetation clearing or other project construction is to be initiated during the bird breeding season (February 1 through August 31), pre-construction/grading surveys shall be conducted by a qualified biologist. Surveys shall cover the entire site and shall be conducted no more than three days prior to the initiation of clearance/construction work. If a nesting bird or special-status species is located, consultation with the local CDFW representative shall occur to determine what avoidance actions may be taken. If any active *non-raptor* bird nests are found, a suitable buffer area (varying from 250-300 feet), depending on the particular species found, shall be established from the nest, and that area shall be avoided until the nest becomes inactive (vacated). If any active *raptor* bird nests are found, a suitable buffer area of typically 250-500 feet from the nest shall be established, and that area shall be avoided until the nest becomes inactive (vacated). The limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area by a qualified biologist hired by the project proponent and endorsed by the City of Camarillo's Department of Community Development. Encroachment into buffers around active	Pre-Construction Survey to identify nesting birds. Buffers shall be established if nesting birds are identified.	Prior to and during construction	As needed during construction	Project Applicant			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
nests must be conducted at the discretion of a qualified biologist. The applicant shall record the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of nesting birds.							
BIO-1(b) Burrowing Owl Pre-construction Surveys, Avoidance, and / or Exclusion. A qualified biologist shall conduct pre-construction clearance surveys prior to ground disturbance activities within all suitable burrowing owl habitat to confirm the presence/absence of burrowing owls. The surveys shall be consistent with the recommended survey methodology provided by CDFW (2012). Clearance surveys shall be conducted within 14 days prior to construction and ground disturbance activities. If no burrowing owls are observed, no further actions are required. If burrowing owls are detected during the pre-construction clearance surveys, avoidance buffers shall be implemented in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993) minimization mitigation measures. If Burrowing owls are detected, prior to ground disturbance, coordination with the CDFW by a qualified biologist shall occur to establish the appropriate avoidance buffer distances specific for the project's activities and level of expected disturbance. If avoidance of burrowing owls is not feasible, a Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall be developed by a qualified biologist in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993). The Plan shall be provided to the applicable local CDFW office prior to implementation. A qualified biologist shall coordinate with the CDFW to determine the appropriate exclusion methods (passive or active relocation) for the project to relocate burrowing owls to a suitable offsite location.	Pre-Construction Survey to identify presence or absence of burrowing owl. If present, buffers shall be established to avoid burrowing owl. If avoidance is not feasible, qualified biologist shall prepare Burrowing Owl Exclusion Plan.	Prior to Construction. If present, during construction	As needed during construction	Project Applicant and/or their qualified biologist.			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
Relocation of owls can only occur during the non-breeding season. A report of all pre-construction survey efforts shall be submitted to the Camarillo Planning Department and CDFW within 30 days of completion of the survey effort to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys and monitoring. The report shall also include each observed special status animal, the UTM coordinates and habitat descriptions. If relocation is required, separate reporting as required within the Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall also be submitted to the Camarillo Planning Department and CDFW.							
CULTURAL RESOURCES							
CR-1 If unanticipated cultural resources are encountered during construction activities (any permitted action requiring physical digging or grading of a project area using mechanical equipment or hand tools, including core sampling, soil borings, work required for placing caissons or footings, planting trees, disking, grubbing, trenching and installation of poles, underground electrical systems, sewers, water mains, or other utilities, or geological/geotechnical testing) work shall cease until the nature, extent, and possible significance of any cultural remains can be assessed and, if found to be significant pursuant to Section 15064.5 of the California Code of Regulations (CEQA Guidelines), remediated. Such assessment and remediation shall be implemented by the City through consultation with a qualified cultural resources professional prior to	Monitor construction for presence of archaeological resources and to ensure further compliance with mitigation measure if any such resources are discovered	Ongoing during all grading, excavation, and trenching activities below the depths of previous disturbance	As needed during construction	Qualified Cultural Resource professional, reporting to City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
recommencement with onsite construction/grading activities. If remediation is necessary, possible techniques include removal, documentation, curation, or avoidance of the resource, depending upon the nature of the find. Cultural resource remains may include artifacts, shell, bone, features, foundations, trash pits and privies, etc.							
GEOLOGY AND SOILS							
GEO-1 Prior to any grading or building permit review, the developer shall prepare and submit to the City Engineer a soils and geologic study in accordance with the City of Camarillo Guidelines for the Preparation of Geotechnical and Geologic Studies and any other applicable standards. The study shall include, but not limited to, fault trenching (if structures are planned within the City of Camarillo fault hazard zone area), liquefaction and hydroconsolidation, and seismically induced settlement testing and analysis. The fault study shall be performed under the direct supervision of a Certified Engineering Geologist (CEG).	Review soils and geologic study to ensure compliance with mitigation measure	Prior to grading or building permit review	Once	City Engineer			
GEO-2 All future habitable structures on the project site shall be located beyond the limits of any Structural Setback Zone established by the applicant's geotechnical consultant.	Review geotechnical engineering investigation	Prior to approval of building plans	Once	City of Camarillo			
GEO-3 Prior to the design and construction of any structural improvements, the Project developers shall have comprehensive design level geotechnical evaluations conducted that include subsurface exploration and laboratory testing. Recommendations for grading/earthwork, surface and subsurface drainage, foundations, pavement structural sections, and other pertinent geotechnical design considerations shall be formulated	Monitor comprehensive design level geotechnical evaluation	Prior to design and construction of structural improvements	Once	City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
and implemented based on the findings of this evaluation. This comprehensive design level geotechnical evaluation shall be performed under the direct supervision of a Registered Geotechnical Engineer (GE) and shall be prepared in accordance with the City of Camarillo Guidelines for the Preparation of Geotechnical and Geologic Studies and any other applicable standards.							
GEO-4 In order to safeguard against major seismic-related failures, all buildings within the Project site shall be constructed in conformance with the Uniform Building Code, as adopted by the City of Camarillo.	Monitor construction to ensure compliance with Building Code	Ongoing prior to and during construction	As needed prior to and during construction	City of Camarillo			
GEO-5 The fault hazard area and Structural Setback Zone shall be identified on the site plans or other appropriate document for the project developer to provide notice to property purchasers of any limitations for use of the property.	Review site plans to ensure compliance with mitigation measure	Prior to approval of site plans	Once	City of Camarillo			
HAZARDS AND HAZARDOUS MATERIALS							
HAZ-1 Aerially-Deposited Lead (ADL) Soil Analysis and Remediation. Prior to issuance of grading permits for the project site, soil samples shall be collected within all areas of the project site located within 100 feet of the US-101 Freeway off-ramp. The soil samples shall be analyzed for soluble lead using the soluble threshold limit concentration (STLC) extraction procedure. If soluble lead concentrations using the STLC extraction procedure exceed 5 mg/L, then these soil samples shall be further analyzed for soluble lead using the toxicity characteristic leaching procedure (TCLP) extraction procedure. The results of the STLC and TCLP analysis, if any, will determine the classification of the soil in these areas as non-hazardous or hazardous waste. If lead levels are detected above the hazardous material thresholds, the soil shall be hauled and disposed of by a transportation company licensed to transport	Review documentation of the sampling, transportation and disposal of soil	Prior to issuance of grading permits	Once	City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
hazardous materials material. In addition, the material shall be taken to a landfill or receiving facility licensed to accept hazardous waste. Documentation of the appropriate sampling, transportation and disposal must be prepared and include the volume of soil removed, where the material was moved to, and include soil profiling, and transportation and disposal manifests. The soil removal documentation shall be prepared for the property owner or other responsible party, with a copy submitted to the City of Camarillo.							
NOISE							
N-1 Exterior Noise. The proposed project should include the following mitigations to achieve an acceptable exterior noise level below 55 dBa: • Relocate private balconies on building facades that are shielded from Ventura Freeway traffic noise	Review site plans to ensure compliance with mitigation measure	Prior to approval of building plans	Once	City of Camarillo			
N-2 Interior Noise. The residential units with interior noise impacts greater than 45 dBa should feature the following mitigations to achieve an acceptable interior noise level below 45 dBa: • Install mechanical ventilation that meets all Code requirements, including the capability to provide sufficient air exchanges, without depending on open windows or leakage through windows and doors. The ventilation system shall not compromise the sound insulation capability of the exterior façade assembly. • Install STC 30 windows, sliding doors, and French doors for all units.	Review site plans to ensure compliance with mitigation measure	Prior to approval of building plans	Once	City of Camarillo			
N-2(a) Mufflers. During all project site excavation and grading, all construction equipment, fixed or mobile, shall be operated with closed engine doors and shall be equipped with properly operating and maintained mufflers consistent with manufacturers' standards.	Monitor construction for compliance with mitigation measure	Ongoing during all grading, excavation, and construction activities	As needed during construction	City of Camarillo			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
N-2(b) Stationary Equipment and Equipment Staging. All equipment staging and stationary construction equipment shall be located near the southern boundary of the project site adjacent to the Ventura Freeway, or in a location that establishes at least a 100 foot setback between the adjacent sensitive receptor and construction staging areas and stationary construction equipment.	Monitor construction to ensure compliance with mitigation measure	Ongoing prior to and during construction	As needed prior to and during construction	City of Camarillo			
N-2(c) Electrically-Powered Tools and Facilities. To the extent practical, electrical power shall be used to run air compressors and similar power tools and to power any temporary structures, such as construction trailers or caretaker facilities.	Monitor construction to ensure compliance with mitigation measure	Ongoing prior to and during construction	As needed prior to and during construction	City of Camarillo			
N-2(d) City Enforcement - Noise. The Building Official and/or the Director of the Department of Community Development of the City of Camarillo shall enforce noise-attenuating construction requirements. • *Excavation, grading, and other construction activities related to the proposed project shall comply with City restrictions on hours of construction activity.* • *All construction vehicles, such as bulldozers and haul trucks, shall be prohibited from idling in excess of 5 minutes.* • *The contractor shall inspect construction equipment to ensure that such equipment is in proper operating condition and fitted with standard factory silencing features. Construction equipment shall utilize all standard factory silencing features, such as equipment mufflers, enclosures, and barriers.*	Monitor construction to ensure compliance with mitigation measure	Ongoing prior to and during construction	As needed prior to and during construction	City of Camarillo Building Official and/or Department of Community Development			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
TRANSPORTATION AND TRAFFIC							
T-1 Fair Share Contribution Towards Traffic Signal Installation. Prior to issuance of a grading permit for the first residential unit, the applicant shall contribute 17% of the design and installation costs associated with the construction of a traffic signal at the Verdugo Way/Camino Ruiz intersection and 5% of the design and installation costs associated with the construction of a traffic signal at the Adolfo Road/Camino Ruiz intersection. The costs associated with the design and installation of the traffic signals shall be calculated by the City of Camarillo Public Works Department prior to issuance of any grading permits for the site.	Review proof of payment of the City of Camarillo Transportation design and installation costs for traffic signal	Prior to issuance of grading permit	Once	City of Camarillo Public Works Department			
T-2 Camino Ruiz Parking Restriction. Prior to issuance of final occupancy permits for the project, the applicant shall install signs prohibiting on-street parking on both sides of Camino Ruiz from Verdugo Way to the Ventura Freeway.	Monitor project site for signs prohibiting on-street parking	Prior to issuance of final occupancy permits	Once	City of Camarillo			
UTILITIES							
UTL-1 Water Master Plan. Prior to issuance of a building permit, the applicant must submit a Water Master Plan and obtain approval of the Water Master Plan from Camrosa Water District. The Master Plan shall analyze and include water demands (both potable & non-potable) for both domestic and common areas, general pipe sizing and alignment for potable and non-potable service, fire flow analysis, service pressures for each lot, and any distribution and storage infrastructure.	Review and approve Water Master Plan	Prior to issuance of building permit	Once	Camrosa Water District			
UTL-2 Easements. Prior to recordation of tract or parcel maps, the applicant will grant to Camrosa Water District appropriate on-site	Ensure appropriate on-site easements	Prior to recordation of tract or parcel	Once	Camrosa Water District			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
easements for the purpose of constructing, serving, and maintaining potable and non-potable and water lines and facilities, including areas that may be beneficial for water service to adjacent properties.	granted	maps					
UTL-3 Granting of Rights. Prior to issuance of a Water Will-Serve Letter, the applicant must grant all underlying water rights and wells to the District.	Ensure underlying water rights and wells grants	Prior to issuance of Water Will-Serve Letter	Once	Camrosa Water District			
UTL-4 Mitigation Plan. Prior to issuance of a Water Will-Serve Letter, the applicant shall provide the District with a Mitigation Plan to offset total maximum day water demands, as outlined below. Demand supplied by the Camrosa Water District shall be offset through the development of new water resources. The development of the Mitigation Plan and the financing of mitigation projects therein are the responsibility of the applicant. Mitigation cannot negatively affect the existing customer base, and the Mitigation Plan must be reviewed and approved by the District. The following is a list of required conditions for the Mitigation Plan: a. New demand, potable and non-potable, must be mitigated by developing new water. b. Mitigation cannot increase the use of existing water supplies. c. Mitigation cannot reduce the District's self-reliance. d. Mitigation cannot increase the financial burden of the existing customer base.	Review and approve Mitigation Plan	Prior to issuance of Water Will-Serve Letter	Once	Camrosa Water District			
UTL-5 Initial Payment. Prior to issuance of a Water Will-Serve Letter, the applicant must pay 20% of the estimated cost of the project described in the Mitigation Plan or enter into	Review proof of payment of initial payment or review and	Prior to issuance of Water Will-Serve Letter	Once	Camrosa Water District			

Mitigation Measure/Condition of Approval	Monitoring Action Required	When Monitoring to Occur	Monitoring Frequency	Agency or Party Responsible For Monitoring	Compliance Verification		
					Initial	Date	Comments
a sub-division improvement agreement as approved and accepted by the General Manager.	approve sub-division improvement agreement						

Responses to Comments on the Draft IS-MND

RESPONSES to COMMENTS on the DRAFT IS-MND

This section includes comments received during the circulation of the Draft Initial Study and Mitigated Negative Declaration (IS-MND) prepared for the Mission Oaks Townhomes project.

The Draft IS-MND was circulated for a 30-day public review period that began on December 5, 2014 and concluded on January 5, 2015. The City received seven (7) comment letters on the Draft IS-MND. The commenter and the page number on which each commenter's letter appears are listed below.

	Letter No. and Commenter	Page No.
1.	P.A. Sliney, SSM III and R.D. Cohan, California Highway Patrol	2
2.	Mel Johnson, St Francis BBQ	5
3.	Bill Golubics, City of Camarillo Department of Public Works	7
4.	Corey E. Taylor, Attorney at Law	9
5.	Alicia Stratton, Ventura County Air Pollution Control District	12
6.	Betty J. Courtney, Environmental Program Manager I, South Coast Region, California Department of Fish and Wildlife	15
7.	Scott Morgan, Director State Clearinghouse, State of California Clearinghouse and Planning Unit	21

The comment letters and responses follow. Each comment letter has been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment Letter 1).

State of California

Transportation Agency

CUE+R
1-5-15
6

Memorandum

Date: December 18, 2014

Letter 1

RECEIVED
JAN 05 2015
STATE CLEARING HOUSE

To: Moorpark Area (770)

From: **DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**
Special Projects Section

File No.: 063.A04575.A14630.Noc.Doc

Subject: ENVIRONMENTAL DOCUMENT REVIEW AND RESPONSE
SCH# 2014121020

Special Projects Section (SPS) recently received a "Notice of Completion" environmental document from the State Clearinghouse outlining the information contained in the attached profile.

After a preliminary review, we believe this project will not have a significant impact on statewide departmental operations. However, because of your geographical proximity to the site, you are in a better position to provide a more accurate assessment of any traffic-related matters that may affect your local Area operations. Information and procedures outlined in the *Transportation Planning Manual,* HPM 41.1, Chapter 6, "Environmental Impact Documents," should serve as a guideline when reviewing transportation-related documents. 1.1

If you determine departmental input is advisable, please provide your written comments referencing the above SCH number to the State Clearinghouse, 1400 Tenth Street, Room 121, Sacramento, CA 95814. Your comments must be received no later than January 5, 2015. Please forward a copy of your written comments to SPS. If you determine there is no departmental impact, please notify SPS by electronic mail (e-mail) or memorandum.

If you have any questions, please call Associate Governmental Program Analyst Leah Mora at (916) 843-3374, or e-mail at lemora@chp.ca.gov.

P. A. SLINEY, SSM III
Commander

Attachment

cc: Coastal Division
Assistant Commissioner, Field

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
Moorpark Area
610 Spring Road
Moorpark, CA 93021-1278
(805) 553-0800
(800) 735-2929 (TT/TDD)
(800) 735-2922 (Voice)

RECEIVED
JAN 05 2015
STATE CLEARING HOUSE

December 30, 2014

State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

RE: SCH# 2014121020, Mission Oaks Townhomes IS-MND

Dear Sir/Madam:

Thank you for the opportunity to review and comment on the proposed Mission Oaks Townhomes IS-MND project, Verdugo Way and Camino Ruiz, in Camarillo. This project is located within the boundaries of the California Highway Patrol (CHP) Ventura Area office but the documents were mistakenly received at the CHP's Moorpark Area office today and a response is due by January 5, 2015. Since there is insufficient time for the CHP Ventura Area to receive the information and respond by the deadline, the CHP Moorpark Area will comment. The received documents describe the project's south boundary as the Ventura Freeway, which we assume means the freeway's Department of Transportation (Caltrans) right-of-way. The CHP has primary investigative responsibility for incidents related to the US 101 (Ventura Freeway), to include on-ramps and off-ramps. Upon our cursory review of the proposed project there does not appear to be any significant negative potential impact to US 101. 1.1 cont'd

Given the project's proximity to US 101, a major southern California freeway, we request the project's managers be acutely aware of any potential project activity that could disrupt, interfere or compromise the safe and efficient utilization of US 101 by motorists. Should any circumstance arise where project activity could potentially affect vehicles travelling on US 101, the project's managers or supervisors are requested to immediately contact the CHP's Ventura Communications Center by telephoning (805) 477-4174.

Sincerely,

R. D. COHAN, Lieutenant
Commander

c.c. Coastal Division
Special Projects Section
Ventura Area

Letter 1

COMMENTER: P.A. Sliney, SSM III and R.D. Cohan, California Highway Patrol

DATE: December 18, 2014

Response 1.1

The commenter states that the project would not cause any significant negative impacts to traffic on the US 101 Freeway. The commenter requests that the project applicant be aware of any potential project activity that could disrupt, interfere, or compromise the safe and efficient utilization of US 101 Freeway by motorists and that the applicant contact CHP if project activity could affect vehicles. This request is noted and will be forwarded to the project applicant for consideration.

Date: December 29, 2014 Letter 2

Subject: Proposed Mission Oaks Townhomes Project

Reference: Draft IS-MND

To: Steve Mitchell, Principal Planner
smitchell@cityofcamarillo.org

I support the project in theory, however, I am not in agreement with the proposed traffic flow connection to the existing shopping center.

Any proposed connection to the existing surface parking lot drive aisle to the west, adjacent to Pardee Plaza (Plaza at Mission Oaks) is a non-starter.

Even in the present configuration the parking and access configuration is grossly inadequate to accommodate existing traffic flow for customers at the Plaza, especially during noon time hours. This situation/condition already has a negative impact on sales to existing businesses. 2.1

With drive-thru access via the Plaza by the new proposed project tenants, it would potentially exacerbate an existing tenuous parking situation. In addition to traffic gridlock, it would be an invitation and convenient for project tenants to park extra vehicles and dispose of extra trash/garbage on the Plaza's property. The additional traffic flow would also add new security issues for the Plaza.

This project needs a private access road, possibly connecting to Verdugo Way. Thanks for allowing public comment on this proposed project.

Mel Johnson
St. Francis BBQ
4952 Verdugo Way
Camarillo, CA 93010

Copy via US Post Office

David J. Norman, Director
Department of Community Development
601 Carmen Drive
Camarillo, CA 93012

Letter 2

COMMENTER: Mel Johnson, St. Francis BBQ

DATE: December 29, 2014

Response 2.1

The commenter states that they are concerned with the traffic connection to the existing shopping center. The commenter asserts that the parking and access configuration is inadequate to accommodate existing traffic flow for customers and the project would exacerbate this problem. The commenter states that traffic is especially bad around noon. These comments are noted.

While the project proposes a connection to the adjacent commercial development, this connection would be one of three access points. Vehicles traveling to and from the site would primarily enter or exit the site from the two locations on Camino Ruiz, while the shopping center entrance/exit would provide secondary access in the event of an emergency. Additionally, most of the project generated vehicle trips would occur during the AM and PM peak hour periods, not during the noon hour. Therefore, the proposed project would not significantly exacerbate traffic flow and parking problems within the adjacent shopping center. The proposed project would be required to supply sufficient on-site parking to satisfy the Camarillo Municipal Code. It is not anticipated that the project or the access to the commercial area would encourage the use of the commercial parking spaces by residents or guests of the project. Therefore no significant impacts to traffic or parking within the adjacent shopping center would occur.

Letter 3

City of Camarillo

Department of Public Works

M E M O R A N D U M

DATE: December 30, 2014

TO: Steve Mitchell

FROM: Bill Golubics

SUBJECT: Mission Oaks Townhomes Project, PBC/GPA 2013-3

I have reviewed the *Draft* Initial Study- MND, dated December 2014, for the subject project. I find that the contents of the Transportation/Traffic section of the document are accurate and acceptable regarding the potential traffic impacts.

However, it may be necessary to discuss the adequacy of the number of onsite parking spaces. If the proposed onsite parking spaces do not conform to the new parking space requirements that the City Council is about to adopt, then the lack of adequate parking can be deemed a significant negative impact that requires mitigation. 3.1

Letter 3

COMMENTER: Bill Golubics, City of Camarillo Department of Public Works

DATE: December 30, 2014

Response 3.1

The commenter states that the contents of the Transportation/Traffic section of the IS/MND is accurate and acceptable regarding potential traffic impacts. The commenter requests that the adequacy of the number of onsite parking spaces be determined based on the new parking space requirements currently before the City Council for adoption.

The updated parking requirements were passed by the City Council on January 14, 2015. The code previously required two guest parking spaces for every five multi-family residential units. The updated code requires three guest parking spaces for every five multi-family residential units. The proposed project site plan included as Figure 3 in the IS/MND, includes sufficient parking spaces to satisfy the previous guest parking requirement of two spaces for every five multi-family residential units. Should the project be approved, the applicant would be required to submit an updated site plan that would comply with all applicable requirements including the number of guest parking spaces. The re-design of parking areas within the project site would not create a significant impact and traffic and circulation and therefore no additional analysis or mitigation is required.

COREY E. TAYLOR

ATTORNEY AT LAW

Letter 4

January 5, 2015

VIA EMAIL (smitchell@cityofcamarillo.org);
CONFIRMED VIA FIRST CLASS U.S. MAIL

Steve Mitchell
Principal Planner
601 Carmen Drive
Camarillo, CA 93010

Re: *Comments of Donahue Schriber Realty Group, L.P. ("DSRG"), owner of Pardee Plaza aka Plaza at Mission Oaks ("Center") concerning the Draft Initial Study – Mitigated Negative Declaration ("Draft IS-MND") for the general plan amendment, zoning change, and construction of a high density residential development ("Project") to the east of the Center.*

Dear Mr. Mitchell:

This firm represents DSRG in connection with comments on the Draft IS-MND for the Project. For additional reference, DSRG owns the Center, which is referred to in the Draft IS-MND as the "existing commercial development to the west" of the Project. DSRG is also a member of the business owners' association that operates and maintains the driveways and parking lots throughout the Center.

While DSRG is supportive of the Project for a number of reasons, it has serious concerns over the traffic, parking, circulation, and other vehicle-related symptoms that will result from the proposed connection of the Project to the east/west surface parking lot drive aisle within the Center. Per the Draft IS-MND, that drive aisle is being relied on to provide significant access to the Project. In fact, assuming that the Project would require re-configuration of that road to connect with Santa Rosa Road, it would serve as the only adjacent access point for the residents who will reside at the north side of Project to connect to Santa Rosa Road. Even if that connection is not made, those residents will surely use that road to connect to the Center and then head north through the Center to Verdugo Way. 4.1

The foregoing will significantly impact the Center in a number of negative ways, including:

- Increased traffic through the Center, which already suffers from some existing traffic congestion and has limited access points.
- Impacts on the two (2) access points to the Center on Verdugo Way, including impact on the existing traffic devices at Pardee Plaza drive.
- Parking of Project residents in the Center.
- Increased costs to DSRG to address and correct the parking of Project residents in the Center.
- Increased trash and garbage in the Center.
- Potential security issues in the Center.
- Increased costs to DSRG to address potential security issues in the Center.

27201 PUERTA REAL, SUITE 140 • MISSION VIEJO, CA • 92691
ph: (949) 429-3481 • fx: (949) 271-2704 e: corey@taylorlawoc.com

None of the foregoing are addressed in the Draft IS-MND. Rather, that document only addresses the impacts of the Project on City of Camarillo streets.

In sum, DSRG believes that the Project is a benefit to the community, but, as proposed, results in disparate negative impacts to DSRG and the business owners in the Center. The Project should be revised to address, and either eliminated or at least mitigate, those impacts. 4.1 cont'd

Thank you for your time. If you have any questions about this matter or would like to discuss it further, please do not hesitate to contact me.

Very truly yours,

Corey E. Taylor

cc: Mr. Tom Schriber, Jr.

27201 PUERTA REAL, SUITE 140 • MISSION VIEJO, CA • 92691
ph: (949) 429-3481 • fx: (949) 271-2704 e: corey@taylorlawoc.com

Letter 4

COMMENTER: Corey, E. Taylor, Attorney At Law

DATE: January 5, 2015

Response 4.1

The commenter states that he is a representative of Donahue Schriber Realty Group, L.P. (DSRG) which owns the shopping center ("Center") adjacent to the project site. The commenter states concerns regarding traffic, parking, circulation, trash, and other vehicle-related issues. The commenter is primarily concerned with the proposed driveway that would connect the parking lot of the adjacent Center with the proposed development.

The proposed common access route between the project and the existing Center is intended to provide enhanced emergency vehicle and police access to both developments. No negative security issues are anticipated to result from the proposed vehicular access connection. As shown on Table 14 on page 68 of Section XVI *Transportation/Traffic* of the IS/MND, the project would result in approximately 90 vehicle trips during the AM and PM peak hours. These trips would be spread between the three access points, the two on Camino Ruiz and the proposed driveway connection to the Center. If the 90 trips are spread evenly between the three access points during the AM and PM peak hours (which generally coincide with the morning and afternoon rush hours), approximately one car would pass through each access point every two minutes. These traffic volumes would be sufficiently conveyed by the three driveway entrances/exits and would not occur during the peak operational period of the shopping center. Therefore, the proposed western driveway connection through the Center is considered a less than significant impact.

Impacts on commercial solid waste disposal are not anticipated since the project would be required to provide on-site trash bins and enclosures as required by Section 19.50 of the Camarillo Municipal Code.

Residents of the project would likely not utilize parking spaces in the Center's parking lot since parking for residents and guests would be provided on-site in accordance with the Camarillo Municipal Code.

In summary, impacts related to vehicle traffic and trash would be less than significant.

VENTURA COUNTY
AIR POLLUTION CONTROL DISTRICT

Letter 5

Memorandum

TO: Steve Mitchell, Camarillo Community Development Department

DATE: January 5, 2015

FROM: Alicia Stratton

SUBJECT: Request for Review of MND 2013-09 for PB Companies, Mission Oaks Townhomes Project

Air Pollution Control District staff has reviewed the subject mitigated negative declaration, which is a proposal to amend the City's General Plan land use designation from Industrial to High-Density Residential. The zoning designation would be changed from Limited Manufacturing to Residential Planned Development, 30-units per acre. The applicant is proposing 129 multi-family residential units on the 8.66-acre site. The project includes 22 residential buildings, a pool, cabana, spa and other recreation areas. The project location is north of Highway 101 bounded by Verdugo Way to the north, Camino Ruiz to the east, and existing commercial development to the west.

Section III of the mitigated negative declaration addresses air quality issues. We concur with the findings of this discussion that long-term, operational air quality impacts would not result from the project. Air quality impacts will be below the 25 pounds per day threshold for reactive organic compounds and oxides of nitrogen as described in the Ventura County Air Quality Assessment Guidelines (Mitigated Negative declaration Table 2, *Estimated Operational Emissions:* 7.7 lbs/day and 9.9 lbs/day, respectively). Short-term, construction air quality impacts would likely result from the project; however, because these are temporary they are not counted toward air quality thresholds of impact significance. Air Quality Mitigation Measures AQ-4 and AQ-5 will reduce emissions of PM10, PM2.5 and ozone precursors during site preparation and construction. 5.1

Because the project is adjacent to a freeway, health risks for the proposed project were examined (Table 3, *Potential Health Risks at Receptors*). This analysis indicates that the propose development would potentially expose onsite residents to significant carcinogenic health risks associated with vehicle emissions, specifically diesel exhaust particulates. Impacts would be potentially significant unless mitigated. After implementation of Mitigation Measures AQ-1 through AQ-3 (resident ventilation filter screens, resident notification and weatherproofing), air quality impacts to onsite residents

would be less than significant. Other sensitive receptors (a hotel and a high school) were likewise evaluated and potential health risks to these are less than significant. No further air quality mitigation is required.

5.1 cont'd

Thank you for the opportunity to comment on this project. If you have any questions, please call me at (805) 645-1426.

Letter 5

COMMENTER: Alicia Stratton, Ventura County Air Pollution Control District

DATE: January 5, 2015

Response 5.1

The commenter accurately summarizes the findings of the IS/MND and states that the VCAPCD concurs with the findings of the report. These comments have been noted.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

Letter 6

January 6, 2015

Mr. Steve Mitchell, Principal Planner
City of Camarillo
601 Carmen Drive
Camarillo, CA 93010
smitchell@cityofcamarillo.org

Subject: Mission Oaks Townhomes Project Draft Initial Study and Mitigated Negative Declaration, City of Camarillo, Ventura County; SCH # 2014121020

Dear Mr. Mitchell:

The California Department of Fish and Wildlife (Department) received a Draft Initial Study and Mitigated Negative Declaration (MND) from the City of Camarillo (City) for the subject Project pursuant to the California Environmental Quality Act (CEQA).

Pursuant to the Guidelines for the Implementation of CEQA (Cal. Code Regs., tit. 14, § 15000 et seq.; hereafter CEQA Guidelines), the Department has reviewed the MND and offers comments and recommendations on those activities involved in the Project that are within the Department's area of expertise and germane to its statutory responsibilities, and/or which are required to be approved by the Department (CEQA Guidelines, §§ 15073 & 15204).

CEQA ROLE

6.1

The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (i.e., biological resources). The Department is a Trustee Agency with responsibility under CEQA for commenting on Projects that could affect biological resources. As a Trustee Agency, the Department is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from Project activities (CEQA Guidelines, § 15386; Fish & G. Code, § 1802).

PROJECT

The objective of the Project is to amend the City's General Plan land use designation for the Project site from Industrial to High-Density Residential. In addition, the zoning designation would be changed from Limited Manufacturing to Residential Planned Development. The Project applicant is proposing 129 multi-family residential units on an 8.66-acre site. The Project site is located in the eastern portion of Camarillo, north of U.S. Highway 101, and is bounded by Verdugo Way to the north, Camino Ruiz to the east, and existing commercial development to the west. The Project site has been previously graded and consists of annual grasses and forbs that have been periodically mowed. The Project site also contains several large landscaping trees located along the northern and eastern borders.

COMMENTS AND RECOMMENDATIONS

The Department offers comments and recommendations to assist the City in adequately identifying and/or mitigating the Project's significant, or potentially significant, impacts on biological resources. These comments and recommendations are based on the requirement for the environmental document to include the following information:

- Identification of environmental impacts of the proposed Project (CEQA Guidelines, §§ 15063, 15065, 15126 & 15358); and
- A description of feasible mitigation measures to avoid potentially significant impacts, and/or mitigate significant impacts, of the proposed Project on the environment (CEQA Guidelines, §§ 15021, 15063, 15071 & 15370).

A site visit was conducted by Department staff on December 30, 2014, and habitat observations were made of the proposed Project site, which consists primarily of ruderal vegetation throughout the parcel and approximately 10 large landscaping trees on the north and east border. California ground squirrel (*Otospermophilus beecheyi*) and their burrows were observed within the Project site, and Audubon's cottontail (*Sylvilagus audubonii*), western meadowlark (*Sturnella neglecta*), killdeer (*Charadrius vociferus*), and common starling (*Sturnus vularis*) were observed foraging on the site. Based on these observations and with the current establishment of grasses and forbs within the ruderal, open space parcel, the Department recommends protocol level surveys for burrowing owl (*Athene cunicularia*) prior to Project construction, and language regarding the surveys to be included as a biological mitigation measure within the MND. Burrowing owl is a California Species of Special Concern and has been observed during the non-breeding season using the open field habitat on the Camarillo Airport, located south and west of the Project site. Burrowing owls will use abandoned ground squirrel burrows when available during winter migration and spring nesting season. The burrowing owl survey protocol and appropriate mitigation measures can be found at the following website: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds, listed as "Staff Report on Burrowing Owl Mitigation, California Department of Fish and Wildlife, March 7, 2012". 6.1 cont'd

The Department concurs with biological mitigation measure BIO-1, found on page 30 of the MND, which recommends surveys for nesting birds within the landscaping trees that border the Project site. The Department recommends surveys are also conducted within the ruderal, open space area for ground- nesting birds including western meadowlark, killdeer, and burrowing owl. The following language is provided to further develop biological mitigation measures that ensure nesting birds are not inadvertently impacted, and to facilitate movement of wildlife out of harm's way during project implementation.

1. <u>Nesting Birds</u>. Measures should be taken to avoid Project impacts to nesting birds using the landscape trees and open field habitats within the Project site. Migratory non-game native bird species are protected by international treaty under the Federal Migratory Bird Treaty Act (MBTA) of 1918 (Title 50, § 10.13, Code of Federal Regulations). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). Proposed Project activities (including, but not limited to, staging and disturbances to native and nonnative vegetation, structures, and substrates) should occur outside of the avian breeding season, which generally runs from February 1st through September 1st (as early as January 1st for some raptors) to avoid take of birds 6.2

or their eggs. If avoidance of the avian breeding season is not feasible, the Department recommends surveys by a qualified biologist with experience in conducting breeding bird surveys to detect protected native birds occurring in suitable nesting habitat that is to be disturbed and (as access to adjacent areas allows) any other such habitat within 300 feet of the disturbance areas (within 500 feet for raptors). Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

2. Moving out of Harm's Way. The proposed project is anticipated to result in clearing of ruderal, open space habitats that may support some species of indigenous wildlife. To avoid direct mortality, the Department recommends a qualified biological monitor be on site prior to and during ground and habitat disturbance activities to move out of harm's way special status species or other wildlife of low mobility that would be injured or killed by grubbing or Project-related construction activities. 6.2 cont'd

CONCLUSION

The Department recommends that the MND include biological mitigation measures to reduce potential impacts to burrowing owl, nesting birds, and small mammals. The language provided above and along with the report referenced above will help the City develop biological mitigation measures for this Project.

FUTURE COORDINATION

The Department appreciates this opportunity to comment on this MND. Questions regarding this letter or further coordination should be directed to Dan Blankenship, Senior Environmental Scientist (Specialist) at (661) 259-3750 or Daniel.Blankenship@wildlife.ca.gov.

Sincerely,

Betty J. Courtney
Environmental Program Manager I
South Coast Region

ec: Christine Found-Jackson, CDFW, Glendale
Scott Morgan, State Clearinghouse, Sacramento

Letter 6

COMMENTER: Betty J. Courtney, Environmental Program Manager I, South Coast Region, California Department of Fish and Wildlife

DATE: January 6, 2015

Response 6.1

The commenter accurately summarizes the project and the California Department of Fish and Wildlife's (CDFW's) review and responsibility. The commenter states that the CDFW conducted a site visit and recommends the completion of protocol level surveys for burrowing owls prior to commencement of construction activities on the site. The burrowing owl is a California Specifies of Special Concern.

Potential impacts to special status species are discussed on pages 25 and 26 of the IS/MND. The analysis on page 26 has been amended to include the following:

Suitable habitat is present for burrowing owls in the non-native grassland. Overwintering burrows owls have been recorded at the Camarillo Airport, approximately 5 miles to the southwest. However, given that the habitat surrounding the project site consists of urban development, burrowing owls would likely only occur on-site in low numbers and as winter transients.

Additionally, Mitigation Measure BIO-1(b) on page 26 of the IS/MND has been added to reduce potential impacts to Burrowing Owl to a less than significant level. The mitigation measure language is as follows:

BIO-1(b) **Burrowing Owl Pre-construction Surveys, Avoidance, and/or Exclusion.** A qualified biologist shall conduct pre-construction clearance surveys prior to ground disturbance activities within all suitable habitat to confirm the presence/absence of burrowing owls. The surveys shall be consistent with the recommended survey methodology provided by CDFW (2012). Clearance surveys shall be conducted within 14 days prior to construction and ground disturbance activities. If no burrowing owls are observed, no further actions are required.

If burrowing owls are detected during the pre-construction clearance surveys, avoidance buffers shall be implemented in accordance with the CDFW (2012) and Burrowing Owl Consortium (1993) minimization mitigation measures. If Burrowing owls are detected, prior to ground disturbance, coordination with the CDFW by a qualified biologist shall occur to establish the appropriate avoidance buffer distances specific for the project's activities and level of expected disturbance.

If avoidance of burrowing owls is not feasible, a Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall be developed by a qualified biologist in accordance with the CDFW

(2012) and Burrowing Owl Consortium (1993). The Plan shall be provided to the applicable local CDFW office prior to implementation. A qualified biologist shall coordinate with the CDFW to determine the appropriate exclusion methods (passive or active relocation) for the project to relocate burrowing owls to a suitable offsite location. Relocation of owls can only occur during the non-breeding season.

A report of all pre-construction survey efforts shall be submitted to the Camarillo Planning Department and CDFW within 30 days of completion of the survey effort to document compliance. The report shall include the dates, times, weather conditions, and personnel involved in the surveys and monitoring. The report shall also include each observed special status animal, the UTM coordinates and habitat descriptions. If relocation is required, separate reporting as required within the Burrowing Owl Exclusion Plan and Mitigation and Monitoring Plan shall also be submitted to the Camarillo Planning Department and CDFW.

After mitigation, impacts would remain be less than significant.

Response 6.2

The commenter states that they concur with Mitigation Measure BIO-1 on page 26 of the IS/MND. However, CDFW recommends that the surveys required by BIO-1 be expanded from just the existing trees so that they cover the entire site. Therefore, Mitigation Measure BIO-1(a) has been clarified to read as follows:

BIO-1(a) **Nesting Birds.** If vegetation clearing or other project construction is to be initiated during the bird breeding season (February 1 through August 31), pre-construction/grading surveys shall be conducted by a qualified biologist. Surveys shall cover the entire site and shall be conducted no more than three days prior to the initiation of clearance/construction work. If a nesting bird or special-status species is located, consultation with the local CDFW representative shall occur to determine what avoidance actions may be taken. If any active *non-raptor* bird nests are found, a suitable buffer area (varying from 250-300 feet), depending on the particular species found, shall be established from the nest, and that area shall be avoided until the nest becomes inactive (vacated). If any active raptor bird nests are found, a suitable buffer area of typically 250-500 feet from the nest shall be established, and that area shall be avoided until the nest becomes inactive (vacated). The limits of construction to avoid a nest shall be established in the field with flagging and stakes or construction fencing. Construction personnel shall be instructed on the sensitivity of the area by a qualified biologist hired by the project proponent and endorsed by the City of Camarillo's Department of Community Development. Encroachment into buffers around active nests must be

> conducted at the discretion of a qualified biologist. The applicant shall record the results of the recommended protective measures described above to document compliance with applicable State and federal laws pertaining to the protection of nesting birds.

Impacts would remain less than significant after mitigation.

STATE OF CALIFORNIA

Governor's Office of Planning and Research

State Clearinghouse and Planning Unit

Edmund G. Brown Jr.
Governor

Ken Alex
Director

January 6, 2015

Letter 7

Steve Mitchell
City of Camarillo
601 Carmen Drive
P.O. Box 248
Camarillo, CA 93010-0248

Subject: Mission Oaks Townhomes IS-MND
SCH#: 2014121020

Dear Steve Mitchell:

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. On the enclosed Document Details Report please note that the Clearinghouse has listed the state agencies that reviewed your document. The review period closed on January 5, 2015, and the comments from the responding agency (ies) is (are) enclosed. If this comment package is not in order, please notify the State Clearinghouse immediately. Please refer to the project's ten-digit State Clearinghouse number in future correspondence so that we may respond promptly.

Please note that Section 21104(c) of the California Public Resources Code states that:

> "A responsible or other public agency shall only make substantive comments regarding those activities involved in a project which are within an area of expertise of the agency or which are required to be carried out or approved by the agency. Those comments shall be supported by specific documentation." 7.1

These comments are forwarded for use in preparing your final environmental document. Should you need more information or clarification of the enclosed comments, we recommend that you contact the commenting agency directly.

This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act. Please contact the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Enclosures
cc: Resources Agency

1400 TENTH STREET P.O. BOX 3044 SACRAMENTO, CALIFORNIA 95812-3044
TEL (916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

JAN 08 2015

Document Details Report
State Clearinghouse Data Base

SCH#	2014121020
Project Title	Mission Oaks Townhomes IS-MND
Lead Agency	Camarillo, City of

Type	**MND** Mitigated Negative Declaration
Description	The proposed project would construct 129 residential dwellings on a vacant 8.66 acre site. The project site is surrounded by existing commercial uses and the US 101 Freeway. The applicant would construct 22 residential buildings, a pool, a cabana, spa, parking areas, internal roadways, and other recreation areas. The maximum building height would be 43 feet. Access to the site would be provided by Verdugo Way and Camino Ruiz.

Lead Agency Contact

Name	Steve Mitchell		
Agency	City of Camarillo		
Phone	805 388 5370	*Fax*	
email			
Address	601 Carmen Drive P.O. Box 248		
City	Camarillo	*State* CA	*Zip* 93010-0248

Project Location

County	Ventura		
City	Camarillo		
Region			
Lat / Long	34° 12' 54" N / 119° 0' 12" W		
Cross Streets	Verdugo Way and Camino Ruiz		
Parcel No.			
Township	*Range*	*Section*	*Base*

Proximity to:

Highways	US 101
Airports	
Railways	
Waterways	Conejo Creek / Calleguas Creek
Schools	
Land Use	Vacant Site. Industrial/Limited Manufacturing

Project Issues	Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Drainage/Absorption; Flood Plain/Flooding; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Landuse; Cumulative Effects
Reviewing Agencies	Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Office of Emergency Services, California; California Highway Patrol; Caltrans, District 7; Air Resources Board; Regional Water Quality Control Board, Region 4; Native American Heritage Commission

Date Received	12/05/2014	*Start of Review*	12/05/2014	*End of Review*	01/05/2015

Letter 7

COMMENTER: Scott Morgan, Director State Clearinghouse, State of California Clearinghouse and Planning Unit

DATE: January 6, 2015

Response 7.1

The commenter acknowledges receipt for the Draft IS/MND and states that the comment period ended on January 5, 2015. These comments have been noted.

Appendix A

CalEEMod Analysis Results

Camarillo IS

Ventura County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	53.00	Space	0.48	21,200.00	0
Condo/Townhouse	129.00	Dwelling Unit	8.06	129,000.00	395

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Start painting during construction

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	153.00
tblConstructionPhase	PhaseEndDate	8/1/2016	1/15/2016
tblConstructionPhase	PhaseEndDate	2/12/2016	1/27/2016
tblConstructionPhase	PhaseStartDate	12/31/2015	6/17/2015
tblConstructionPhase	PhaseStartDate	1/16/2016	12/31/2015

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.2041	4.6240	3.6681	5.4900e-003	0.2765	0.3033	0.5799	0.1156	0.2853	0.4009	0.0000	485.6651	485.6651	0.0928	0.0000	487.6139
2016	0.0711	0.2268	0.1618	2.5000e-004	2.0400e-003	0.0131	0.0151	5.4000e-004	0.0121	0.0127	0.0000	23.1657	23.1657	6.2800e-003	0.0000	23.2976
Total	**1.2752**	**4.8508**	**3.8299**	**5.7400e-003**	**0.2786**	**0.3164**	**0.5950**	**0.1162**	**0.2974**	**0.4135**	**0.0000**	**508.8308**	**508.8308**	**0.0991**	**0.0000**	**510.9115**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2015	1.2041	4.6240	3.6681	5.4900e-003	0.2765	0.3033	0.5799	0.1156	0.2853	0.4009	0.0000	485.6647	485.6647	0.0928	0.0000	487.6135
2016	0.0711	0.2268	0.1618	2.5000e-004	2.0400e-003	0.0131	0.0151	5.4000e-004	0.0121	0.0127	0.0000	23.1657	23.1657	6.2800e-003	0.0000	23.2975
Total	**1.2752**	**4.8508**	**3.8299**	**5.7400e-003**	**0.2786**	**0.3164**	**0.5950**	**0.1162**	**0.2974**	**0.4135**	**0.0000**	**508.8304**	**508.8304**	**0.0991**	**0.0000**	**510.9110**

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

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6850	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007
Energy	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	273.9241	273.9241	9.6700e-003	3.5700e-003	275.2328
Mobile	0.6330	1.6615	6.6602	0.0120	0.8862	0.0214	0.9076	0.2365	0.0197	0.2562	0.0000	1,003.4373	1,003.4373	0.0472	0.0000	1,004.4282
Waste						0.0000	0.0000		0.0000	0.0000	12.0455	0.0000	12.0455	0.7119	0.0000	26.9947
Water						0.0000	0.0000		0.0000	0.0000	2.6665	48.1644	50.8308	0.2761	6.9200e-003	58.7753
Total	**1.3290**	**1.7672**	**7.6819**	**0.0126**	**0.8862**	**0.0342**	**0.9204**	**0.2365**	**0.0325**	**0.2690**	**14.7120**	**1,327.0913**	**1,341.8032**	**1.0465**	**0.0105**	**1,367.0317**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6850	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007
Energy	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	273.9241	273.9241	9.6700e-003	3.5700e-003	275.2328
Mobile	0.6330	1.6615	6.6602	0.0120	0.8862	0.0214	0.9076	0.2365	0.0197	0.2562	0.0000	1,003.4373	1,003.4373	0.0472	0.0000	1,004.4282
Waste						0.0000	0.0000		0.0000	0.0000	12.0455	0.0000	12.0455	0.7119	0.0000	26.9947
Water						0.0000	0.0000		0.0000	0.0000	2.6665	48.1644	50.8308	0.2760	6.9100e-003	58.7711
Total	**1.3290**	**1.7672**	**7.6819**	**0.0126**	**0.8862**	**0.0342**	**0.9204**	**0.2365**	**0.0325**	**0.2690**	**14.7120**	**1,327.0913**	**1,341.8032**	**1.0464**	**0.0105**	**1,367.0275**

	ROG	NOx	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**	**0.10**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/14/2015	5	10	
2	Grading	Grading	1/15/2015	2/11/2015	5	20	
3	Building Construction	Building Construction	2/12/2015	12/30/2015	5	230	
4	Architectural Coating	Architectural Coating	6/17/2015	1/15/2016	5	153	
5	Paving	Paving	12/31/2015	1/27/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 261,225; Residential Outdoor: 87,075; Non-Residential Indoor: 954; Non-Residential Outdoor: 318 (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	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	102.00	17.00	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	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.2132	2.0000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	18.6506	18.6506	5.5700e-003	0.0000	18.7675
Total	**0.0263**	**0.2845**	**0.2132**	**2.0000e-004**	**0.0903**	**0.0154**	**0.1058**	**0.0497**	**0.0142**	**0.0639**	**0.0000**	**18.6506**	**18.6506**	**5.5700e-003**	**0.0000**	**18.7675**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.3000e-004	4.2500e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6645	0.6645	4.0000e-005	0.0000	0.6653
Total	**3.5000e-004**	**4.3000e-004**	**4.2500e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6645**	**0.6645**	**4.0000e-005**	**0.0000**	**0.6653**

3.2 Site Preparation - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0263	0.2845	0.2132	2.0000e-004		0.0154	0.0154		0.0142	0.0142	0.0000	18.6505	18.6505	5.5700e-003	0.0000	18.7675
Total	**0.0263**	**0.2845**	**0.2132**	**2.0000e-004**	**0.0903**	**0.0154**	**0.1058**	**0.0497**	**0.0142**	**0.0639**	**0.0000**	**18.6505**	**18.6505**	**5.5700e-003**	**0.0000**	**18.7675**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5000e-004	4.3000e-004	4.2500e-003	1.0000e-005	7.3000e-004	1.0000e-005	7.3000e-004	1.9000e-004	1.0000e-005	2.0000e-004	0.0000	0.6645	0.6645	4.0000e-005	0.0000	0.6653
Total	**3.5000e-004**	**4.3000e-004**	**4.2500e-003**	**1.0000e-005**	**7.3000e-004**	**1.0000e-005**	**7.3000e-004**	**1.9000e-004**	**1.0000e-005**	**2.0000e-004**	**0.0000**	**0.6645**	**0.6645**	**4.0000e-005**	**0.0000**	**0.6653**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0383	0.4042	0.2667	3.0000e-004		0.0233	0.0233		0.0214	0.0214	0.0000	28.3860	28.3860	8.4700e-003	0.0000	28.5639
Total	**0.0383**	**0.4042**	**0.2667**	**3.0000e-004**	**0.0655**	**0.0233**	**0.0888**	**0.0337**	**0.0214**	**0.0551**	**0.0000**	**28.3860**	**28.3860**	**8.4700e-003**	**0.0000**	**28.5639**

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	5.9000e-004	7.1000e-004	7.0800e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1075	1.1075	6.0000e-005	0.0000	1.1088
Total	**5.9000e-004**	**7.1000e-004**	**7.0800e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1075**	**1.1075**	**6.0000e-005**	**0.0000**	**1.1088**

3.3 Grading - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0655	0.0000	0.0655	0.0337	0.0000	0.0337	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0383	0.4042	0.2667	3.0000e-004		0.0233	0.0233		0.0214	0.0214	0.0000	28.3859	28.3859	8.4700e-003	0.0000	28.5639
Total	**0.0383**	**0.4042**	**0.2667**	**3.0000e-004**	**0.0655**	**0.0233**	**0.0888**	**0.0337**	**0.0214**	**0.0551**	**0.0000**	**28.3859**	**28.3859**	**8.4700e-003**	**0.0000**	**28.5639**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	7.1000e-004	7.0800e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.1075	1.1075	6.0000e-005	0.0000	1.1088
Total	**5.9000e-004**	**7.1000e-004**	**7.0800e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.1075**	**1.1075**	**6.0000e-005**	**0.0000**	**1.1088**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4208	3.4534	2.1556	3.0800e-003		0.2434	0.2434		0.2289	0.2289	0.0000	280.5935	280.5935	0.0704	0.0000	282.0719
Total	**0.4208**	**3.4534**	**2.1556**	**3.0800e-003**		**0.2434**	**0.2434**		**0.2289**	**0.2289**	**0.0000**	**280.5935**	**280.5935**	**0.0704**	**0.0000**	**282.0719**

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	0.0208	0.2236	0.2574	4.4000e-004	0.0127	3.8900e-003	0.0165	3.6000e-003	3.5700e-003	7.1700e-003	0.0000	39.9285	39.9285	3.1000e-004	0.0000	39.9349
Worker	0.0458	0.0554	0.5539	1.1000e-003	0.0946	7.8000e-004	0.0954	0.0251	7.2000e-004	0.0258	0.0000	86.6056	86.6056	4.7000e-003	0.0000	86.7044
Total	**0.0666**	**0.2790**	**0.8113**	**1.5400e-003**	**0.1072**	**4.6700e-003**	**0.1119**	**0.0287**	**4.2900e-003**	**0.0330**	**0.0000**	**126.5341**	**126.5341**	**5.0100e-003**	**0.0000**	**126.6393**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.4208	3.4534	2.1556	3.0800e-003		0.2434	0.2434		0.2289	0.2289	0.0000	280.5932	280.5932	0.0704	0.0000	282.0716
Total	**0.4208**	**3.4534**	**2.1556**	**3.0800e-003**		**0.2434**	**0.2434**		**0.2289**	**0.2289**	**0.0000**	**280.5932**	**280.5932**	**0.0704**	**0.0000**	**282.0716**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0208	0.2236	0.2574	4.4000e-004	0.0127	3.8900e-003	0.0165	3.6000e-003	3.5700e-003	7.1700e-003	0.0000	39.9285	39.9285	3.1000e-004	0.0000	39.9349
Worker	0.0458	0.0554	0.5539	1.1000e-003	0.0946	7.8000e-004	0.0954	0.0251	7.2000e-004	0.0258	0.0000	86.6056	86.6056	4.7000e-003	0.0000	86.7044
Total	**0.0666**	**0.2790**	**0.8113**	**1.5400e-003**	**0.1072**	**4.6700e-003**	**0.1119**	**0.0287**	**4.2900e-003**	**0.0330**	**0.0000**	**126.5341**	**126.5341**	**5.0100e-003**	**0.0000**	**126.6393**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6155					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.1825	0.1350	2.1000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	18.1281	18.1281	2.3600e-003	0.0000	18.1777
Total	**0.6444**	**0.1825**	**0.1350**	**2.1000e-004**		**0.0157**	**0.0157**		**0.0157**	**0.0157**	**0.0000**	**18.1281**	**18.1281**	**2.3600e-003**	**0.0000**	**18.1777**

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	5.5400e-003	6.7100e-003	0.0671	1.3000e-004	0.0115	9.0000e-005	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.4842	10.4842	5.7000e-004	0.0000	10.4962
Total	**5.5400e-003**	**6.7100e-003**	**0.0671**	**1.3000e-004**	**0.0115**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.4842**	**10.4842**	**5.7000e-004**	**0.0000**	**10.4962**

3.5 Architectural Coating - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.6155					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0289	0.1825	0.1350	2.1000e-004		0.0157	0.0157		0.0157	0.0157	0.0000	18.1281	18.1281	2.3600e-003	0.0000	18.1777
Total	**0.6444**	**0.1825**	**0.1350**	**2.1000e-004**		**0.0157**	**0.0157**		**0.0157**	**0.0157**	**0.0000**	**18.1281**	**18.1281**	**2.3600e-003**	**0.0000**	**18.1777**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.5400e-003	6.7100e-003	0.0671	1.3000e-004	0.0115	9.0000e-005	0.0115	3.0400e-003	9.0000e-005	3.1300e-003	0.0000	10.4842	10.4842	5.7000e-004	0.0000	10.4962
Total	**5.5400e-003**	**6.7100e-003**	**0.0671**	**1.3000e-004**	**0.0115**	**9.0000e-005**	**0.0115**	**3.0400e-003**	**9.0000e-005**	**3.1300e-003**	**0.0000**	**10.4842**	**10.4842**	**5.7000e-004**	**0.0000**	**10.4962**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0477					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0131	0.0104	2.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	1.4043	1.4043	1.7000e-004	0.0000	1.4078
Total	**0.0497**	**0.0131**	**0.0104**	**2.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**1.4043**	**1.4043**	**1.7000e-004**	**0.0000**	**1.4078**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	4.7000e-004	4.6600e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7834	0.7834	4.0000e-005	0.0000	0.7843
Total	**3.9000e-004**	**4.7000e-004**	**4.6600e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7834**	**0.7834**	**4.0000e-005**	**0.0000**	**0.7843**

3.5 Architectural Coating - 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	tons/yr										MT/yr					
Archit. Coating	0.0477					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0300e-003	0.0131	0.0104	2.0000e-005		1.0800e-003	1.0800e-003		1.0800e-003	1.0800e-003	0.0000	1.4043	1.4043	1.7000e-004	0.0000	1.4078
Total	**0.0497**	**0.0131**	**0.0104**	**2.0000e-005**		**1.0800e-003**	**1.0800e-003**		**1.0800e-003**	**1.0800e-003**	**0.0000**	**1.4043**	**1.4043**	**1.7000e-004**	**0.0000**	**1.4078**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	4.7000e-004	4.6600e-003	1.0000e-005	8.9000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.4000e-004	0.0000	0.7834	0.7834	4.0000e-005	0.0000	0.7843
Total	**3.9000e-004**	**4.7000e-004**	**4.6600e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**8.9000e-004**	**2.4000e-004**	**1.0000e-005**	**2.4000e-004**	**0.0000**	**0.7834**	**0.7834**	**4.0000e-005**	**0.0000**	**0.7843**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1600e-003	0.0126	7.4900e-003	1.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	1.0614	1.0614	3.2000e-004	0.0000	1.0680
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1900e-003**	**0.0126**	**7.4900e-003**	**1.0000e-005**		**7.1000e-004**	**7.1000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**1.0614**	**1.0614**	**3.2000e-004**	**0.0000**	**1.0680**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0554	0.0554	0.0000	0.0000	0.0554
Total	**3.0000e-005**	**4.0000e-005**	**3.5000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0554**	**0.0554**	**0.0000**	**0.0000**	**0.0554**

3.6 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1600e-003	0.0126	7.4900e-003	1.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	1.0614	1.0614	3.2000e-004	0.0000	1.0680
Paving	3.0000e-005					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1900e-003**	**0.0126**	**7.4900e-003**	**1.0000e-005**		**7.1000e-004**	**7.1000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**1.0614**	**1.0614**	**3.2000e-004**	**0.0000**	**1.0680**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	4.0000e-005	3.5000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0554	0.0554	0.0000	0.0000	0.0554
Total	**3.0000e-005**	**4.0000e-005**	**3.5000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0554**	**0.0554**	**0.0000**	**0.0000**	**0.0554**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0199	0.2127	0.1408	2.1000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	19.9631	19.9631	6.0200e-003	0.0000	20.0896
Paving	6.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0205**	**0.2127**	**0.1408**	**2.1000e-004**		**0.0120**	**0.0120**		**0.0110**	**0.0110**	**0.0000**	**19.9631**	**19.9631**	**6.0200e-003**	**0.0000**	**20.0896**

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	5.0000e-004	6.0000e-004	6.0400e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	1.0149	1.0149	5.0000e-005	0.0000	1.0160
Total	**5.0000e-004**	**6.0000e-004**	**6.0400e-003**	**1.0000e-005**	**1.1500e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0149**	**1.0149**	**5.0000e-005**	**0.0000**	**1.0160**

3.6 Paving - 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	tons/yr										MT/yr					
Off-Road	0.0199	0.2127	0.1408	2.1000e-004		0.0120	0.0120		0.0110	0.0110	0.0000	19.9631	19.9631	6.0200e-003	0.0000	20.0896
Paving	6.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0205**	**0.2127**	**0.1408**	**2.1000e-004**		**0.0120**	**0.0120**		**0.0110**	**0.0110**	**0.0000**	**19.9631**	**19.9631**	**6.0200e-003**	**0.0000**	**20.0896**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	6.0000e-004	6.0400e-003	1.0000e-005	1.1500e-003	1.0000e-005	1.1600e-003	3.1000e-004	1.0000e-005	3.1000e-004	0.0000	1.0149	1.0149	5.0000e-005	0.0000	1.0160
Total	**5.0000e-004**	**6.0000e-004**	**6.0400e-003**	**1.0000e-005**	**1.1500e-003**	**1.0000e-005**	**1.1600e-003**	**3.1000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0149**	**1.0149**	**5.0000e-005**	**0.0000**	**1.0160**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6330	1.6615	6.6602	0.0120	0.8862	0.0214	0.9076	0.2365	0.0197	0.2562	0.0000	1,003.4373	1,003.4373	0.0472	0.0000	1,004.4282
Unmitigated	0.6330	1.6615	6.6602	0.0120	0.8862	0.0214	0.9076	0.2365	0.0197	0.2562	0.0000	1,003.4373	1,003.4373	0.0472	0.0000	1,004.4282

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	850.11	923.64	783.03	2,351,462	2,351,462
Parking Lot	0.00	0.00	0.00		
Total	850.11	923.64	783.03	2,351,462	2,351,462

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
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475873	0.063741	0.180085	0.160840	0.068896	0.010406	0.012442	0.015456	0.000807	0.000660	0.005504	0.000319	0.004970

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	164.9847	164.9847	7.5800e-003	1.5700e-003	165.6304
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	164.9847	164.9847	7.5800e-003	1.5700e-003	165.6304
NaturalGas Mitigated	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	108.9394	108.9394	2.0900e-003	2.0000e-003	109.6024
NaturalGas Unmitigated	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	108.9394	108.9394	2.0900e-003	2.0000e-003	109.6024

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.04145e+006	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	108.9394	108.9394	2.0900e-003	2.0000e-003	109.6024
Total		**0.0110**	**0.0941**	**0.0400**	**6.0000e-004**		**7.6100e-003**	**7.6100e-003**		**7.6100e-003**	**7.6100e-003**	**0.0000**	**108.9394**	**108.9394**	**2.0900e-003**	**2.0000e-003**	**109.6024**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	2.04145e+006	0.0110	0.0941	0.0400	6.0000e-004		7.6100e-003	7.6100e-003		7.6100e-003	7.6100e-003	0.0000	108.9394	108.9394	2.0900e-003	2.0000e-003	109.6024
Total		**0.0110**	**0.0941**	**0.0400**	**6.0000e-004**		**7.6100e-003**	**7.6100e-003**		**7.6100e-003**	**7.6100e-003**	**0.0000**	**108.9394**	**108.9394**	**2.0900e-003**	**2.0000e-003**	**109.6024**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	557877	159.6460	7.3400e-003	1.5200e-003	160.2708
Parking Lot	18656	5.3387	2.5000e-004	5.0000e-005	5.3596
Total		**164.9847**	**7.5900e-003**	**1.5700e-003**	**165.6304**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Condo/Townhouse	557877	159.6460	7.3400e-003	1.5200e-003	160.2708
Parking Lot	18656	5.3387	2.5000e-004	5.0000e-005	5.3596
Total		**164.9847**	**7.5900e-003**	**1.5700e-003**	**165.6304**

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	tons/yr										MT/yr					
Mitigated	0.6850	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007
Unmitigated	0.6850	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007

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	0.0663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0321	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007
Total	**0.6850**	**0.0116**	**0.9818**	**5.0000e-005**		**5.2100e-003**	**5.2100e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**1.5656**	**1.5656**	**1.6700e-003**	**0.0000**	**1.6007**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0663					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.5866					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0321	0.0116	0.9818	5.0000e-005		5.2100e-003	5.2100e-003		5.2100e-003	5.2100e-003	0.0000	1.5656	1.5656	1.6700e-003	0.0000	1.6007
Total	**0.6850**	**0.0116**	**0.9818**	**5.0000e-005**		**5.2100e-003**	**5.2100e-003**		**5.2100e-003**	**5.2100e-003**	**0.0000**	**1.5656**	**1.5656**	**1.6700e-003**	**0.0000**	**1.6007**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	50.8308	0.2760	6.9100e-003	58.7711
Unmitigated	50.8308	0.2761	6.9200e-003	58.7753

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.40487 / 5.29872	50.8308	0.2761	6.9200e-003	58.7753
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**50.8308**	**0.2761**	**6.9200e-003**	**58.7753**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Condo/Townhouse	8.40487 / 5.29872	50.8308	0.2760	6.9100e-003	58.7711
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**50.8308**	**0.2760**	**6.9100e-003**	**58.7711**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	12.0455	0.7119	0.0000	26.9947
Unmitigated	12.0455	0.7119	0.0000	26.9947

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	59.34	12.0455	0.7119	0.0000	26.9947
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.0455**	**0.7119**	**0.0000**	**26.9947**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Condo/Townhouse	59.34	12.0455	0.7119	0.0000	26.9947
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**12.0455**	**0.7119**	**0.0000**	**26.9947**

9.0 Operational Offroad

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

10.0 Vegetation

Camarillo IS

Ventura County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	53.00	Space	0.48	21,200.00	0
Condo/Townhouse	129.00	Dwelling Unit	8.06	129,000.00	395

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Start painting during construction

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	153.00
tblConstructionPhase	PhaseEndDate	8/1/2016	1/15/2016
tblConstructionPhase	PhaseEndDate	2/12/2016	1/27/2016
tblConstructionPhase	PhaseStartDate	12/31/2015	6/17/2015
tblConstructionPhase	PhaseStartDate	1/16/2016	12/31/2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	13.3787	56.9647	43.4904	0.0455	18.2141	3.0895	21.3036	9.9699	2.8423	12.8122	0.0000	4,389.6451	4,389.6451	1.2355	0.0000	4,415.5902
2016	11.3150	24.8891	18.2057	0.0287	0.2875	1.4598	1.7473	0.0763	1.3587	1.4350	0.0000	2,884.1352	2,884.1352	0.7460	0.0000	2,899.8017
Total	**24.6936**	**81.8538**	**61.6960**	**0.0742**	**18.5016**	**4.5493**	**23.0509**	**10.0462**	**4.2011**	**14.2472**	**0.0000**	**7,273.7803**	**7,273.7803**	**1.9815**	**0.0000**	**7,315.3919**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	13.3787	56.9647	43.4904	0.0455	18.2141	3.0895	21.3036	9.9699	2.8423	12.8122	0.0000	4,389.6451	4,389.6451	1.2355	0.0000	4,415.5902
2016	11.3150	24.8891	18.2057	0.0287	0.2875	1.4598	1.7473	0.0763	1.3587	1.4350	0.0000	2,884.1352	2,884.1352	0.7460	0.0000	2,899.8017
Total	**24.6936**	**81.8538**	**61.6960**	**0.0742**	**18.5016**	**4.5493**	**23.0509**	**10.0462**	**4.2011**	**14.2472**	**0.0000**	**7,273.7803**	**7,273.7803**	**1.9815**	**0.0000**	**7,315.3919**

	ROG	NOx	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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Energy	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Mobile	3.7298	9.2365	38.4643	0.0739	5.3829	0.1274	5.5103	1.4346	0.1170	1.5516		6,822.9804	6,822.9804	0.3105		6,829.5010
Total	**7.7239**	**9.8812**	**49.5919**	**0.0777**	**5.3829**	**0.2270**	**5.6099**	**1.4346**	**0.2165**	**1.6511**	**0.0000**	**7,500.1558**	**7,500.1558**	**0.3436**	**0.0121**	**7,511.1107**

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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Energy	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Mobile	3.7298	9.2365	38.4643	0.0739	5.3829	0.1274	5.5103	1.4346	0.1170	1.5516		6,822.9804	6,822.9804	0.3105		6,829.5010
Total	**7.7239**	**9.8812**	**49.5919**	**0.0777**	**5.3829**	**0.2270**	**5.6099**	**1.4346**	**0.2165**	**1.6511**	**0.0000**	**7,500.1558**	**7,500.1558**	**0.3436**	**0.0121**	**7,511.1107**

	ROG	NOx	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/14/2015	5	10	
2	Grading	Grading	1/15/2015	2/11/2015	5	20	
3	Building Construction	Building Construction	2/12/2015	12/30/2015	5	230	
4	Architectural Coating	Architectural Coating	6/17/2015	1/15/2016	5	153	
5	Paving	Paving	12/31/2015	1/27/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 261,225; Residential Outdoor: 87,075; Non-Residential Indoor: 954; Non-Residential Outdoor: 318 (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	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	102.00	17.00	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	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

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

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	0.0706	0.0750	0.8586	1.7600e-003	0.1479	1.2000e-003	0.1491	0.0392	1.1000e-003	0.0403		152.6436	152.6436	7.9500e-003		152.8106
Total	**0.0706**	**0.0750**	**0.8586**	**1.7600e-003**	**0.1479**	**1.2000e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**152.6436**	**152.6436**	**7.9500e-003**		**152.8106**

3.2 Site Preparation - 2015

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	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0706	0.0750	0.8586	1.7600e-003	0.1479	1.2000e-003	0.1491	0.0392	1.1000e-003	0.0403		152.6436	152.6436	7.9500e-003		152.8106
Total	**0.0706**	**0.0750**	**0.8586**	**1.7600e-003**	**0.1479**	**1.2000e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**152.6436**	**152.6436**	**7.9500e-003**		**152.8106**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0588	0.0625	0.7155	1.4700e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.2030	127.2030	6.6300e-003		127.3421
Total	**0.0588**	**0.0625**	**0.7155**	**1.4700e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.2030**	**127.2030**	**6.6300e-003**		**127.3421**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0588	0.0625	0.7155	1.4700e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.2030	127.2030	6.6300e-003		127.3421
Total	**0.0588**	**0.0625**	**0.7155**	**1.4700e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.2030**	**127.2030**	**6.6300e-003**		**127.3421**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

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

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	0.1654	1.8734	1.8719	3.7900e-003	0.1117	0.0336	0.1453	0.0317	0.0309	0.0626		384.0358	384.0358	2.9200e-003		384.0970
Worker	0.3998	0.4250	4.8654	9.9800e-003	0.8379	6.7900e-003	0.8447	0.2223	6.2300e-003	0.2285		864.9802	864.9802	0.0451		865.9265
Total	**0.5652**	**2.2984**	**6.7373**	**0.0138**	**0.9496**	**0.0404**	**0.9900**	**0.2540**	**0.0371**	**0.2911**		**1,249.0160**	**1,249.0160**	**0.0480**		**1,250.0235**

3.4 Building Construction - 2015

Mitigated Construction On-Site

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

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	0.1654	1.8734	1.8719	3.7900e-003	0.1117	0.0336	0.1453	0.0317	0.0309	0.0626		384.0358	384.0358	2.9200e-003		384.0970
Worker	0.3998	0.4250	4.8654	9.9800e-003	0.8379	6.7900e-003	0.8447	0.2223	6.2300e-003	0.2285		864.9802	864.9802	0.0451		865.9265
Total	**0.5652**	**2.2984**	**6.7373**	**0.0138**	**0.9496**	**0.0404**	**0.9900**	**0.2540**	**0.0371**	**0.2911**		**1,249.0160**	**1,249.0160**	**0.0480**		**1,250.0235**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**9.0760**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

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	0.0784	0.0833	0.9540	1.9600e-003	0.1643	1.3300e-003	0.1656	0.0436	1.2200e-003	0.0448		169.6040	169.6040	8.8400e-003		169.7895
Total	**0.0784**	**0.0833**	**0.9540**	**1.9600e-003**	**0.1643**	**1.3300e-003**	**0.1656**	**0.0436**	**1.2200e-003**	**0.0448**		**169.6040**	**169.6040**	**8.8400e-003**		**169.7895**

3.5 Architectural Coating - 2015

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	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**9.0760**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

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	0.0784	0.0833	0.9540	1.9600e-003	0.1643	1.3300e-003	0.1656	0.0436	1.2200e-003	0.0448		169.6040	169.6040	8.8400e-003		169.7895
Total	**0.0784**	**0.0833**	**0.9540**	**1.9600e-003**	**0.1643**	**1.3300e-003**	**0.1656**	**0.0436**	**1.2200e-003**	**0.0448**		**169.6040**	**169.6040**	**8.8400e-003**		**169.7895**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**9.0378**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0711	0.0748	0.8595	1.9600e-003	0.1643	1.2700e-003	0.1656	0.0436	1.1700e-003	0.0448		163.6059	163.6059	8.0800e-003		163.7756
Total	**0.0711**	**0.0748**	**0.8595**	**1.9600e-003**	**0.1643**	**1.2700e-003**	**0.1656**	**0.0436**	**1.1700e-003**	**0.0448**		**163.6059**	**163.6059**	**8.0800e-003**		**163.7756**

3.5 Architectural Coating - 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					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**9.0378**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0711	0.0748	0.8595	1.9600e-003	0.1643	1.2700e-003	0.1656	0.0436	1.1700e-003	0.0448		163.6059	163.6059	8.0800e-003		163.7756
Total	**0.0711**	**0.0748**	**0.8595**	**1.9600e-003**	**0.1643**	**1.2700e-003**	**0.1656**	**0.0436**	**1.1700e-003**	**0.0448**		**163.6059**	**163.6059**	**8.0800e-003**		**163.7756**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3801**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

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	0.0588	0.0625	0.7155	1.4700e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.2030	127.2030	6.6300e-003		127.3421
Total	**0.0588**	**0.0625**	**0.7155**	**1.4700e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.2030**	**127.2030**	**6.6300e-003**		**127.3421**

3.6 Paving - 2015

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	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3801**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

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	0.0588	0.0625	0.7155	1.4700e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		127.2030	127.2030	6.6300e-003		127.3421
Total	**0.0588**	**0.0625**	**0.7155**	**1.4700e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**127.2030**	**127.2030**	**6.6300e-003**		**127.3421**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1527**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0534	0.0561	0.6446	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		122.7044	122.7044	6.0600e-003		122.8317
Total	**0.0534**	**0.0561**	**0.6446**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**122.7044**	**122.7044**	**6.0600e-003**		**122.8317**

3.6 Paving - 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					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1527**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0534	0.0561	0.6446	1.4700e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		122.7044	122.7044	6.0600e-003		122.8317
Total	**0.0534**	**0.0561**	**0.6446**	**1.4700e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**122.7044**	**122.7044**	**6.0600e-003**		**122.8317**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.7298	9.2365	38.4643	0.0739	5.3829	0.1274	5.5103	1.4346	0.1170	1.5516		6,822.9804	6,822.9804	0.3105		6,829.5010
Unmitigated	3.7298	9.2365	38.4643	0.0739	5.3829	0.1274	5.5103	1.4346	0.1170	1.5516		6,822.9804	6,822.9804	0.3105		6,829.5010

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	850.11	923.64	783.03	2,351,462	2,351,462
Parking Lot	0.00	0.00	0.00		
Total	850.11	923.64	783.03	2,351,462	2,351,462

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
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475873	0.063741	0.180085	0.160840	0.068896	0.010406	0.012442	0.015456	0.000807	0.000660	0.005504	0.000319	0.004970

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
NaturalGas Unmitigated	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5593.01	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Total		**0.0603**	**0.5154**	**0.2193**	**3.2900e-003**		**0.0417**	**0.0417**		**0.0417**	**0.0417**		**658.0006**	**658.0006**	**0.0126**	**0.0121**	**662.0051**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.59301	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Total		**0.0603**	**0.5154**	**0.2193**	**3.2900e-003**		**0.0417**	**0.0417**		**0.0417**	**0.0417**		**658.0006**	**658.0006**	**0.0126**	**0.0121**	**662.0051**

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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Unmitigated	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2143					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3561	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579		19.1749	19.1749	0.0205		19.6047
Total	**3.9338**	**0.1293**	**10.9083**	**5.6000e-004**		**0.0579**	**0.0579**		**0.0579**	**0.0579**	**0.0000**	**19.1749**	**19.1749**	**0.0205**	**0.0000**	**19.6047**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2143					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3561	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579		19.1749	19.1749	0.0205		19.6047
Total	**3.9338**	**0.1293**	**10.9083**	**5.6000e-004**		**0.0579**	**0.0579**		**0.0579**	**0.0579**	**0.0000**	**19.1749**	**19.1749**	**0.0205**	**0.0000**	**19.6047**

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

Camarillo IS

Ventura County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Parking Lot	53.00	Space	0.48	21,200.00	0
Condo/Townhouse	129.00	Dwelling Unit	8.06	129,000.00	395

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	31
Climate Zone	8			**Operational Year**	2014
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	630.89	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Start painting during construction

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	20.00	153.00
tblConstructionPhase	PhaseEndDate	8/1/2016	1/15/2016
tblConstructionPhase	PhaseEndDate	2/12/2016	1/27/2016
tblConstructionPhase	PhaseStartDate	12/31/2015	6/17/2015
tblConstructionPhase	PhaseStartDate	1/16/2016	12/31/2015

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	13.4500	56.9774	43.5032	0.0449	18.2141	3.0895	21.3036	9.9699	2.8423	12.8122	0.0000	4,336.9616	4,336.9616	1.2355	0.0000	4,362.9067
2016	11.3248	24.9115	18.2205	0.0285	0.2875	1.4598	1.7473	0.0763	1.3587	1.4350	0.0000	2,870.4034	2,870.4034	0.7460	0.0000	2,886.0699
Total	**24.7747**	**81.8889**	**61.7237**	**0.0735**	**18.5016**	**4.5493**	**23.0509**	**10.0462**	**4.2011**	**14.2472**	**0.0000**	**7,207.3650**	**7,207.3650**	**1.9815**	**0.0000**	**7,248.9766**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2015	13.4500	56.9774	43.5032	0.0449	18.2141	3.0895	21.3036	9.9699	2.8423	12.8122	0.0000	4,336.9616	4,336.9616	1.2355	0.0000	4,362.9067
2016	11.3248	24.9115	18.2205	0.0285	0.2875	1.4598	1.7473	0.0763	1.3587	1.4350	0.0000	2,870.4034	2,870.4034	0.7460	0.0000	2,886.0699
Total	**24.7747**	**81.8889**	**61.7237**	**0.0735**	**18.5016**	**4.5493**	**23.0509**	**10.0462**	**4.2011**	**14.2472**	**0.0000**	**7,207.3650**	**7,207.3650**	**1.9815**	**0.0000**	**7,248.9766**

	ROG	NOx	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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Energy	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Mobile	4.0675	10.0032	41.6834	0.0710	5.3829	0.1285	5.5114	1.4346	0.1179	1.5525		6,559.8381	6,559.8381	0.3107		6,566.3619
Total	**8.0616**	**10.6480**	**52.8110**	**0.0749**	**5.3829**	**0.2281**	**5.6109**	**1.4346**	**0.2175**	**1.6521**	**0.0000**	**7,237.0136**	**7,237.0136**	**0.3437**	**0.0121**	**7,247.9717**

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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Energy	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Mobile	4.0675	10.0032	41.6834	0.0710	5.3829	0.1285	5.5114	1.4346	0.1179	1.5525		6,559.8381	6,559.8381	0.3107		6,566.3619
Total	**8.0616**	**10.6480**	**52.8110**	**0.0749**	**5.3829**	**0.2281**	**5.6109**	**1.4346**	**0.2175**	**1.6521**	**0.0000**	**7,237.0136**	**7,237.0136**	**0.3437**	**0.0121**	**7,247.9717**

	ROG	NOx	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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/1/2015	1/14/2015	5	10	
2	Grading	Grading	1/15/2015	2/11/2015	5	20	
3	Building Construction	Building Construction	2/12/2015	12/30/2015	5	230	
4	Architectural Coating	Architectural Coating	6/17/2015	1/15/2016	5	153	
5	Paving	Paving	12/31/2015	1/27/2016	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 261,225; Residential Outdoor: 87,075; Non-Residential Indoor: 954; Non-Residential Outdoor: 318 (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	1	8.00	162	0.38
Grading	Graders	1	8.00	174	0.41
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Grading	Tractors/Loaders/Backhoes	3	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	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	102.00	17.00	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	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2015

Unmitigated Construction On-Site

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

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	0.0764	0.0878	0.8715	1.6800e-003	0.1479	1.2000e-003	0.1491	0.0392	1.1000e-003	0.0403		145.3304	145.3304	7.9500e-003		145.4974
Total	**0.0764**	**0.0878**	**0.8715**	**1.6800e-003**	**0.1479**	**1.2000e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**145.3304**	**145.3304**	**7.9500e-003**		**145.4974**

3.2 Site Preparation - 2015

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	5.2609	56.8897	42.6318	0.0391		3.0883	3.0883		2.8412	2.8412	0.0000	4,111.7444	4,111.7444	1.2275		4,137.5224
Total	**5.2609**	**56.8897**	**42.6318**	**0.0391**	**18.0663**	**3.0883**	**21.1545**	**9.9307**	**2.8412**	**12.7719**	**0.0000**	**4,111.7444**	**4,111.7444**	**1.2275**		**4,137.5224**

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	0.0764	0.0878	0.8715	1.6800e-003	0.1479	1.2000e-003	0.1491	0.0392	1.1000e-003	0.0403		145.3304	145.3304	7.9500e-003		145.4974
Total	**0.0764**	**0.0878**	**0.8715**	**1.6800e-003**	**0.1479**	**1.2000e-003**	**0.1491**	**0.0392**	**1.1000e-003**	**0.0403**		**145.3304**	**145.3304**	**7.9500e-003**		**145.4974**

3.3 Grading - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421		3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**		**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0636	0.0731	0.7262	1.4000e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		121.1087	121.1087	6.6300e-003		121.2478
Total	**0.0636**	**0.0731**	**0.7262**	**1.4000e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**121.1087**	**121.1087**	**6.6300e-003**		**121.2478**

3.3 Grading - 2015

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					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	3.8327	40.4161	26.6731	0.0298		2.3284	2.3284		2.1421	2.1421	0.0000	3,129.0158	3,129.0158	0.9341		3,148.6328
Total	**3.8327**	**40.4161**	**26.6731**	**0.0298**	**6.5523**	**2.3284**	**8.8807**	**3.3675**	**2.1421**	**5.5096**	**0.0000**	**3,129.0158**	**3,129.0158**	**0.9341**		**3,148.6328**

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	0.0636	0.0731	0.7262	1.4000e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		121.1087	121.1087	6.6300e-003		121.2478
Total	**0.0636**	**0.0731**	**0.7262**	**1.4000e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**121.1087**	**121.1087**	**6.6300e-003**		**121.2478**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

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

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	0.1973	1.9294	2.5432	3.7700e-003	0.1117	0.0341	0.1458	0.0317	0.0313	0.0631		380.9195	380.9195	3.0000e-003		380.9825
Worker	0.4327	0.4974	4.9382	9.5100e-003	0.8379	6.7900e-003	0.8447	0.2223	6.2300e-003	0.2285		823.5388	823.5388	0.0451		824.4851
Total	**0.6301**	**2.4268**	**7.4814**	**0.0133**	**0.9496**	**0.0409**	**0.9905**	**0.2540**	**0.0376**	**0.2915**		**1,204.4582**	**1,204.4582**	**0.0481**		**1,205.4676**

3.4 Building Construction - 2015

Mitigated Construction On-Site

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

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	0.1973	1.9294	2.5432	3.7700e-003	0.1117	0.0341	0.1458	0.0317	0.0313	0.0631		380.9195	380.9195	3.0000e-003		380.9825
Worker	0.4327	0.4974	4.9382	9.5100e-003	0.8379	6.7900e-003	0.8447	0.2223	6.2300e-003	0.2285		823.5388	823.5388	0.0451		824.4851
Total	**0.6301**	**2.4268**	**7.4814**	**0.0133**	**0.9496**	**0.0409**	**0.9905**	**0.2540**	**0.0376**	**0.2915**		**1,204.4582**	**1,204.4582**	**0.0481**		**1,205.4676**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**9.0760**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

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	0.0849	0.0975	0.9683	1.8600e-003	0.1643	1.3300e-003	0.1656	0.0436	1.2200e-003	0.0448		161.4782	161.4782	8.8400e-003		161.6638
Total	**0.0849**	**0.0975**	**0.9683**	**1.8600e-003**	**0.1643**	**1.3300e-003**	**0.1656**	**0.0436**	**1.2200e-003**	**0.0448**		**161.4782**	**161.4782**	**8.8400e-003**		**161.6638**

3.5 Architectural Coating - 2015

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	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209	0.0000	281.4481	281.4481	0.0367		282.2177
Total	**9.0760**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**	**0.0000**	**281.4481**	**281.4481**	**0.0367**		**282.2177**

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	0.0849	0.0975	0.9683	1.8600e-003	0.1643	1.3300e-003	0.1656	0.0436	1.2200e-003	0.0448		161.4782	161.4782	8.8400e-003		161.6638
Total	**0.0849**	**0.0975**	**0.9683**	**1.8600e-003**	**0.1643**	**1.3300e-003**	**0.1656**	**0.0436**	**1.2200e-003**	**0.0448**		**161.4782**	**161.4782**	**8.8400e-003**		**161.6638**

3.5 Architectural Coating - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966		281.4481	281.4481	0.0332		282.1449
Total	**9.0378**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**		**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0767	0.0876	0.8680	1.8600e-003	0.1643	1.2700e-003	0.1656	0.0436	1.1700e-003	0.0448		155.7592	155.7592	8.0800e-003		155.9289
Total	**0.0767**	**0.0876**	**0.8680**	**1.8600e-003**	**0.1643**	**1.2700e-003**	**0.1656**	**0.0436**	**1.1700e-003**	**0.0448**		**155.7592**	**155.7592**	**8.0800e-003**		**155.9289**

3.5 Architectural Coating - 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					
Archit. Coating	8.6694					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.3685	2.3722	1.8839	2.9700e-003		0.1966	0.1966		0.1966	0.1966	0.0000	281.4481	281.4481	0.0332		282.1449
Total	**9.0378**	**2.3722**	**1.8839**	**2.9700e-003**		**0.1966**	**0.1966**		**0.1966**	**0.1966**	**0.0000**	**281.4481**	**281.4481**	**0.0332**		**282.1449**

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	0.0767	0.0876	0.8680	1.8600e-003	0.1643	1.2700e-003	0.1656	0.0436	1.1700e-003	0.0448		155.7592	155.7592	8.0800e-003		155.9289
Total	**0.0767**	**0.0876**	**0.8680**	**1.8600e-003**	**0.1643**	**1.2700e-003**	**0.1656**	**0.0436**	**1.1700e-003**	**0.0448**		**155.7592**	**155.7592**	**8.0800e-003**		**155.9289**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3801**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

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	0.0636	0.0731	0.7262	1.4000e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		121.1087	121.1087	6.6300e-003		121.2478
Total	**0.0636**	**0.0731**	**0.7262**	**1.4000e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**121.1087**	**121.1087**	**6.6300e-003**		**121.2478**

3.6 Paving - 2015

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	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016	0.0000	2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3801**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**	**0.0000**	**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

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	0.0636	0.0731	0.7262	1.4000e-003	0.1232	1.0000e-003	0.1242	0.0327	9.2000e-004	0.0336		121.1087	121.1087	6.6300e-003		121.2478
Total	**0.0636**	**0.0731**	**0.7262**	**1.4000e-003**	**0.1232**	**1.0000e-003**	**0.1242**	**0.0327**	**9.2000e-004**	**0.0336**		**121.1087**	**121.1087**	**6.6300e-003**		**121.2478**

3.6 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601		2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1527**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**		**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0575	0.0657	0.6510	1.4000e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		116.8194	116.8194	6.0600e-003		116.9467
Total	**0.0575**	**0.0657**	**0.6510**	**1.4000e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**116.8194**	**116.8194**	**6.0600e-003**		**116.9467**

3.6 Paving - 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					
Off-Road	2.0898	22.3859	14.8176	0.0223		1.2610	1.2610		1.1601	1.1601	0.0000	2,316.3767	2,316.3767	0.6987		2,331.0495
Paving	0.0629					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.1527**	**22.3859**	**14.8176**	**0.0223**		**1.2610**	**1.2610**		**1.1601**	**1.1601**	**0.0000**	**2,316.3767**	**2,316.3767**	**0.6987**		**2,331.0495**

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	0.0575	0.0657	0.6510	1.4000e-003	0.1232	9.5000e-004	0.1242	0.0327	8.8000e-004	0.0336		116.8194	116.8194	6.0600e-003		116.9467
Total	**0.0575**	**0.0657**	**0.6510**	**1.4000e-003**	**0.1232**	**9.5000e-004**	**0.1242**	**0.0327**	**8.8000e-004**	**0.0336**		**116.8194**	**116.8194**	**6.0600e-003**		**116.9467**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.0675	10.0032	41.6834	0.0710	5.3829	0.1285	5.5114	1.4346	0.1179	1.5525		6,559.8381	6,559.8381	0.3107		6,566.3619
Unmitigated	4.0675	10.0032	41.6834	0.0710	5.3829	0.1285	5.5114	1.4346	0.1179	1.5525		6,559.8381	6,559.8381	0.3107		6,566.3619

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Condo/Townhouse	850.11	923.64	783.03	2,351,462	2,351,462
Parking Lot	0.00	0.00	0.00		
Total	850.11	923.64	783.03	2,351,462	2,351,462

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
Condo/Townhouse	10.80	7.30	7.50	32.90	18.00	49.10	86	11	3
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.475873	0.063741	0.180085	0.160840	0.068896	0.010406	0.012442	0.015456	0.000807	0.000660	0.005504	0.000319	0.004970

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
NaturalGas Unmitigated	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051

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					
Condo/Townhouse	5593.01	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0603**	**0.5154**	**0.2193**	**3.2900e-003**		**0.0417**	**0.0417**		**0.0417**	**0.0417**		**658.0006**	**658.0006**	**0.0126**	**0.0121**	**662.0051**

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					
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Condo/Townhouse	5.59301	0.0603	0.5154	0.2193	3.2900e-003		0.0417	0.0417		0.0417	0.0417		658.0006	658.0006	0.0126	0.0121	662.0051
Total		**0.0603**	**0.5154**	**0.2193**	**3.2900e-003**		**0.0417**	**0.0417**		**0.0417**	**0.0417**		**658.0006**	**658.0006**	**0.0126**	**0.0121**	**662.0051**

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	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047
Unmitigated	3.9338	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579	0.0000	19.1749	19.1749	0.0205	0.0000	19.6047

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2143					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3561	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579		19.1749	19.1749	0.0205		19.6047
Total	**3.9338**	**0.1293**	**10.9083**	**5.6000e-004**		**0.0579**	**0.0579**		**0.0579**	**0.0579**	**0.0000**	**19.1749**	**19.1749**	**0.0205**	**0.0000**	**19.6047**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.3634					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.2143					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.3561	0.1293	10.9083	5.6000e-004		0.0579	0.0579		0.0579	0.0579		19.1749	19.1749	0.0205		19.6047
Total	**3.9338**	**0.1293**	**10.9083**	**5.6000e-004**		**0.0579**	**0.0579**		**0.0579**	**0.0579**	**0.0000**	**19.1749**	**19.1749**	**0.0205**	**0.0000**	**19.6047**

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 B

Health Risk Assessment

City of Camarillo

Mission Oaks Townhomes Project PBC/GPA 2013-3

Health Risk Assessment

August 2014

rincon

Environmental Scientists Planners Engineers

Missions Oaks Townhomes Project PBC/GPA 2013-3 Health Risk Assessment

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Appendix

Emissions Estimates (adapted from the UC Davis-Caltrans MSAT model) and HARP Model Output

MISSION OAKS TOWNHOMES PROJECT PBC/GPA 2013-3 CITY OF CAMARILLO, VENTURA COUNTY HEALTH RISK ASSESSMENT

This health risk assessment (HRA) analyzes the possible health effects associated with existing air pollution sources at the proposed Mission Oaks Townhomes project in the City of Camarillo, which is in Ventura County. The report has been prepared by Rincon Consultants, Inc. under contract to the City of Camarillo, in support of the environmental documentation being prepared pursuant to the California Environmental Quality Act (CEQA). The purpose of this study is to estimate the potential health risk on the project site associated with diesel particulate emissions from the adjacent U.S. Highway 101.

SUMMARY

The proposed multi-family residential units would be located on an 8.66 acre site bounded by Verdugo Way to the north, Camino Ruiz to the east, Ventura Freeway (U.S. Highway 101, "Highway 101") to the south, and existing commercial development to the west in the City of Camarillo, California. The project site is located approximately 60 feet north of Highway 101 at the boundary closest to the northern edge of the highway. The California Air Resources Board (CARB) currently recommends that local agencies avoid siting new sensitive land uses within 500 feet of freeways or high-volume roadways (CARB, *Air Quality and Land Use Handbook*, April 2005). The primary concern with respect to freeway adjacency is the long-term effect of diesel exhaust particulates, a toxic air contaminant, on sensitive uses. The primary sources of diesel exhaust particulates are heavy-duty trucks on high-volume arterial roadways. This analysis also examines five other vehicle exhaust pollutants of concern that are emitted from both diesel and gasoline-fueled vehicles: acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene.

Cancer risk is expressed as the maximum number of new cases of cancer projected to occur in a population of one million people due to exposure to the cancer-causing substance, typically over a 70-year lifetime (California EPA, 2001). For example, a cancer risk of one in one million means that in a population of one million people, not more than one additional person would be expected to develop cancer as the result of the exposure to the substance causing that risk.

An analysis using the CARB Hotspots Analysis and Reporting Program (HARP) determined that sensitive receptors nearest to the highway would be exposed to a 70-year excess cancer risk of up to 26 in one million (2.57E-05), and a 30-year cancer risk of up to 11 in one million (1.10E-05), both of which exceed the Ventura County Air Pollution Control District (VCAPCD) recommended health risk criteria of one excess case of cancer in 100,000 individuals (1.0E-05 or 10 in one million) (VCAPCD 1993). This analysis is based on outdoor air concentrations and assumes that interior concentrations would be the same as the outdoor concentration, to provide a conservative approach to assessing risk. The maximum estimated health effects risk level for the average (50-percentile) residency of 9 years for an adult would be less than 4 in one million (3.31E-06), and for that of a child (9-years) would be less than 5 in one million (4.89E-06). Potential chronic health risks for on-site residential units were also determined to be lower than VCAPCD health risk criteria (VCAPCD, 1993).

USEPA activity factors show that people in a residential environment spend only a small portion of the day on an average basis outdoors. Therefore, a mitigation measure is recommended that includes forced air ventilation with filter screens on outside air intake ducts to be provided for all residential units on the project site. This would provide a clean interior environment and reduce the future residents' exposure to toxic air contaminants associated with Highway to below the 10 in one million level.

PROJECT DESCRIPTION

The proposed project would amend the City's General Plan land use designation for the project site from Industrial to High-Density Residential. In addition the zoning is proposed to be changed from Limited Manufacturing (LM) to Residential Planned Development, 30 units per acre (RPD-30U).

The project proponent is proposing 145 multi-family residential units on an 8.66 acre site. The project includes a total of 23 buildings, with 22 townhome buildings, a pool, cabana, spa, and other recreation areas. Primary vehicle access is proposed from two points on Camino Ruiz. Secondary access would be provided through a point in the existing surface parking lot drive aisle to the west adjacent to 139 Pardee Plaza.

The site is proposed to be divided into two neighborhoods, the north neighborhood and the south neighborhood. The north neighborhood consists of 8 buildings designated for 2-story townhomes and flats. Three buildings are centered in the northern neighborhood, while the other five form a U-shape shell around the three buildings in the center. The primary access route is proposed to traverse the center of the site and connecting Camino Ruiz on the east to the existing commercial shopping center to the west. The south neighborhood consists of 15 buildings that will be designated for three-story townhomes. Two of the buildings in the southern neighborhood are lined up parallel to Camino Ruiz, and another three buildings parallel the southern border of the site, approximately 85 feet north of US 101 Freeway.

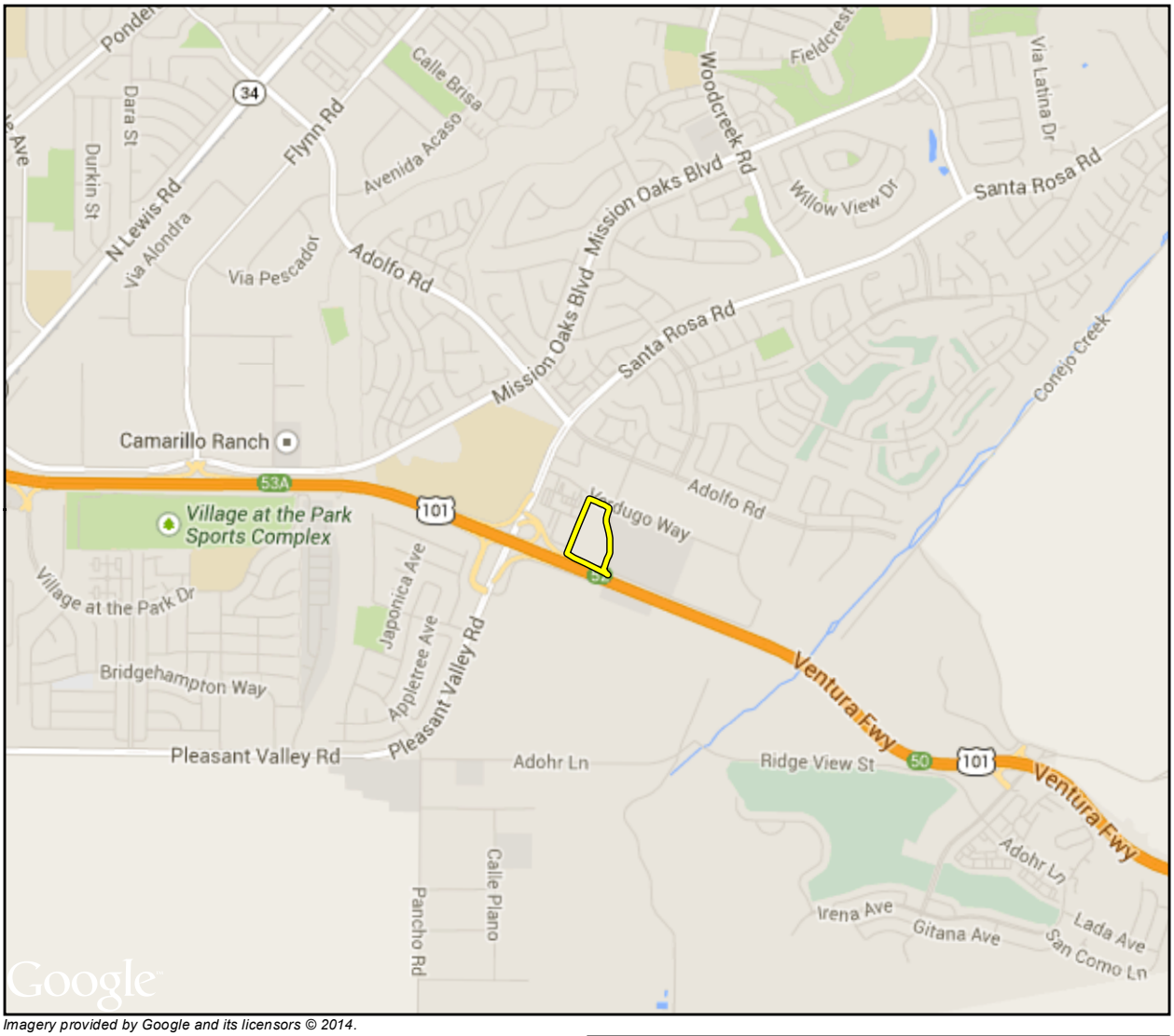
All of the buildings are proposed to be up to three stories in height and to be Spanish in style with balconies on the upper floors. Two car tandem garages are proposed on the bottom floor of the buildings with additional guest parking provided in surface lots for a total of 348 parking spaces. The maximum building height is approximately 43 feet.

AIR QUALITY BACKGROUND

Local Climate and Meteorology

The proposed project site is located in the South Central Coast Air Basin, in the portion that is within the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD).
The regional climate within the SCAB is considered semi-arid and is characterized by warm summers, mild winters, infrequent seasonal rainfall, moderate daytime onshore breezes, and moderate humidity. The air quality within the SCAB is primarily influenced by meteorology and a wide range of emissions sources, such as dense population centers, substantial vehicular traffic, and industry.

Air pollutant emissions within the SCCAB are generated primarily by stationary and mobile sources. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment such as when high winds suspend fine dust particles.



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Project Boundary

N

0 1,250 2,500
Feet

Regional Vicinity

Figure 1

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Project Location

Figure 2

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Sensitive Receptor Locations

Figure 3

Air Pollutants of Concern

The primary air pollutants of concern in the VCAPCD are ozone (O_3) and suspended particulates (PM_{10} and $PM_{2.5}$), as described below (VCAPCD, 2003).

Ozone. Ozone is produced by a photochemical reaction (triggered by sunlight) between nitrogen oxides (NO_X) and reactive organic compounds (ROC[1]). Nitrogen oxides are formed during the combustion of fuels, while reactive organic compounds are formed during combustion and evaporation of organic solvents. Because ozone requires sunlight to form, it mostly occurs in serious concentrations between the months of May and October. Ozone is a pungent, colorless toxic gas with direct health effects on humans including respiratory and eye irritation and possible changes in lung functions. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors.

Suspended Particulates. PM_{10} is small particulate matter measuring no more than 10 microns in diameter. It is mostly composed of dust particles, nitrates, and sulfates. PM_{10} is a by-product of fuel combustion and wind erosion of soil and unpaved roads, and is directly emitted into the atmosphere through these processes. PM_{10} is also created in the atmosphere through chemical reactions. PM_{10} poses a health concern because they can be inhaled into and accumulate in the respiratory system. Particles less than 2.5 micrometers in diameter ($PM_{2.5}$) are referred to as "fine" particles and are believed to pose the greatest health risks. Because of their small size (approximately 1/30th the average width of a human hair), fine particles can lodge deeply into the lungs. Fine particulate matter is composed primarily as a by-product of combustion, while matter between 2.5 and 10 microns is mostly dust from roads and grinding or crushing operations. Fine particulate matter poses a serious health threat to all groups, but particularly to the elderly, children, and those with respiratory problems. More than half of the fine particulate matter that is inhaled into the lungs remains there, which can cause permanent lung damage. These materials can damage health by interfering with the body's mechanisms for clearing the respiratory tract or by acting as carriers of an absorbed toxic substance.

An important fraction of the particulate matter emission inventory is that formed by diesel engine fuel combustion. Particulates in diesel emissions are very small and readily respirable. The particles have hundreds of chemicals adsorbed onto their surfaces, including many known or suspected mutagens and carcinogens. The California Office of Environmental Health Hazard Assessment (OEHHA) reviewed and evaluated the potential for diesel exhaust to affect human health, and the associated scientific uncertainties (California EPA, ARB, April 1998). Based on the available scientific evidence, it was determined that a level of diesel PM exposure below which no carcinogenic effects are anticipated has not been identified. The Scientific Review Panel that approved the OEHHA report determined based on studies to date that 3.0E-04

[1] *Organic compound precursors of ozone are routinely described by a number of variations of three terms: hydrocarbons (HC), organic gases (OG), and organic compounds (OC). These terms are often modified by adjectives such as total, reactive, or volatile, and result in a rather confusing array of acronyms: HC, THC (total hydrocarbons), RHC (reactive hydrocarbons), TOG (total organic gases), ROG (reactive organic gases), TOC (total organic compounds), ROC (reactive organic compounds), and VOC (volatile organic compounds). While most of these differ in some significant way from a chemical perspective, from an air quality perspective two groups are important: non-photochemically reactive in the lower atmosphere, or photochemically reactive in the lower atmosphere (HC, RHC, ROG, ROC, and VOC).*

$(\mu g/m^3)^{-1}$ is a reasonable estimate of the unit risk for diesel PM. This means that a person exposed to a diesel PM concentration of 1 $\mu g/m^3$ continuously over the course of a lifetime has a 3 per 10,000 chance (or 300 in one million chance) of contracting cancer due to this exposure. Based on an estimated Year 2000 statewide average concentration of 1.26 $\mu g/m^3$ for indoor and outdoor ambient air, about 380 excess cancers per one million population could be expected if diesel PM concentrations remained the same (CARB, October 2000). Therefore, these particulate emissions have been determined by the CARB to be a toxic air contaminant (TAC).

Compared to other air toxics that the CARB has identified and controlled, diesel PM emissions are estimated to be responsible for about 70% of the total ambient air toxics risk. In addition to these general risks, diesel PM can also be responsible for elevated localized or near-source exposures ("hot-spots"). Depending on the activity and nearness to receptors, these potential risks can range from small to 1,500 per million or more (CARB, October 2000). Risk characterization scenarios have been conducted by the CARB staff to determine the potential excess cancer risks involved due to the location of individuals near to various sources of diesel engine emissions, ranging from school buses to high volume freeways. The purpose of the risk characterization was to estimate, through air dispersion modeling, the cancer risk associated with typical diesel-fueled engine or vehicle activities based on modeled PM concentration at the point of maximum impact (PMI). The study included various sources of diesel PM emissions, including idling school buses, truck stops, low and high volume freeways, and other sources. High volume freeways were estimated to cause 800-1,700 per million potential excess cancers, while low volume freeways (similar to Highway 101 at the site) were estimated to cause about 100 – 200 per million potential excess cancers. Please see further discussion concerning risk levels below in the Analysis Methodology section.

Besides diesel PM, several other pollutants are emitted by vehicle exhausts that are a public health concern. The U.S. Environmental Protection Agency (USEPA) has identified six pollutants of highest priority: diesel particulate matter (DPM), acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. The latter five pollutants are part of the total organic gases emitted by vehicles both diesel and gasoline fueled. The following is a brief description of these chemicals:

Acrolein. Acrolein is the simplest unsaturated aldehyde. It is a widely produced substance with a piercing, disagreeable, acrid smell similar to that of burning fat. Acrolein is an unstable toxic substance that can burn the nose and throat and is a severe pulmonary irritant. It is a flammable and poisonous substance prepared industrially by the oxidation of propene. Small amounts of acrolein are formed and enter the air when trees, tobacco, other plants, gasoline, and oil are burned.

Acetaldehyde. Acetaldehyde, sometimes known as ethanal, is an organic chemical compound used as an intermediate in the production of acetic acid, certain esters, and a number of other chemicals. It is a flammable liquid with a fruity smell. Acetaldehyde is toxic when applied externally for prolonged periods, an irritant, and a probable carcinogen.

Formaldehyde. Formaldehyde is an organic chemical compound containing a terminal carbonyl group. It is produced in the atmosphere by the action of sunlight and oxygen on atmospheric methane and other hydrocarbons; thus, it becomes part of smog. Additionally,

formaldehyde is an intermediate in the oxidation (or combustion) of methane as well as other carbon compounds including automobile exhaust. Formaldehyde is a flammable substance that can be toxic, allergenic, and a carcinogen. It is naturally made in small amounts in human bodies and is found in small amounts in household sources, such as fiberglass, carpets, permanent press fabrics, paper products, and some household cleaners.

Benzene. Benzene, or benzol, is an organic chemical compound and a known carcinogen. It is a colorless and highly flammable liquid with a sweet smell and a relatively high melting point. Benzene is an important industrial solvent and precursor in the production of drugs, plastics, synthetic rubber, and dyes. Benzene is a natural constituent of crude oil, and may be synthesized from other compounds present in petroleum, and is found in gasoline, and cigarette smoke. Natural sources of benzene include emissions from volcanoes and forest fires.

1,3-Butadiene. 1,3-Butadiene is an important industrial chemical used in the production of synthetic rubber (about 75% of the manufactured 1,3-butadiene), which is then used primarily in the production of automobile tires. It is a colorless gas with a mild gasoline-like odor and small amounts are contained in gasoline and exhausted into the air after the combustion process. It is a carcinogen and highly irritative and flammable.

Air Quality Regulation

The federal and state governments have been empowered by the federal and state Clean Air Acts to regulate emissions of airborne pollutants and have established ambient air quality standards for the protection of public health. The U.S. Environmental Protection Agency (EPA) is the federal agency designated to administer air quality regulation, while the California Air Resources Board (ARB) is the state equivalent under the California Environmental Protection Agency (CalEPA). Local control in air quality management is provided by the ARB through county-level or regional (multi-county) air pollution control districts (APCDs). The ARB establishes statewide air quality standards and is responsible for control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. The ARB has established 15 air basins statewide. The proposed project site is located in the South Central Coast Air Basin, in the portion that is within the jurisdiction of the Ventura County Air Pollution Control District (VCAPCD).

Federal and state standards have been established for seven criteria pollutants, including ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulates less than 10 and 2.5 microns in diameter (PM10 and PM2.5), and lead (Pb) (refer to Table 1). California air quality standards are identical to or stricter than federal standards for all criteria pollutants. Table 1 illustrates the current federal and state Ambient Air Quality Standards.

Table 1
Current Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standards	California Standard
Ozone	1-Hour	---	0.09 ppm
	8-Hour	0.075 ppm	0.070 ppm
Carbon Monoxide	8-Hour	9.0 ppm	9.0 ppm
	1-Hour	35.0 ppm	20.0 ppm
Nitrogen Dioxide	Annual	0.053 ppm	0.030 ppm
	1-Hour	0.100 ppm	0.18 ppm
Sulfur Dioxide	Annual	0.075 ppm	---
	24-Hour	0.14 ppm	0.04 ppm
	1-Hour	0.075 ppm	0.25 ppm
PM_{10}	Annual	---	20 $\mu g/m^3$
	24-Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
$PM_{2.5}$	Annual	12 $\mu g/m^3$	12 $\mu g/m^3$
	24-Hour	35 $\mu g/m^3$	---
Lead	30-Day Average	---	1.5 $\mu g/m^3$
	Rolling 3-Month Average	0.15 $\mu g/m^3$	---

ppm = parts per million;
$\mu g/m^3$ = micrograms per cubic meter
Source: California Air Resources Board, June 7, 2013. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Current Air Quality

The SCCAB monitoring station located nearest to the project site is the El Rio monitoring station located approximately 8 miles northwest of the project site. Table 2 indicates the number of days each of the standards has been exceeded at this station in each of the last three years for which data is available.

Table 2
Ambient Air Quality at the El Rio Monitoring Station

Pollutant	2011	2012	2013
Ozone, ppm - Worst Hour	0.081	0.082	0.067
Number of days of State exceedances (>0.09 ppm)	0	0	0
Ozone, ppm – Worst 8 Hours	0.068	0.065	0.062
Number of days of State exceedances (>0.070)	0	0	0
Number of days of Federal exceedances (>0.075)	0	0	0
Carbon Monoxide, ppm - Worst 8 Hours	N/A	N/A	N/A
Number of days of State/Federal exceedances (>9.0 ppm)	N/A	N/A	N/A

Table 2
Ambient Air Quality at the El Rio Monitoring Station

Pollutant	2011	2012	2013
Nitrogen Dioxide, ppm - Worst Hour	90.0	57.0	40.0
Number of days of State exceedances (>0.18 ppm)	0	0	0
Particulate Matter <10 microns, $\mu g/m^3$ Worst 24 Hours*	50.6	56.3	45.9
Estimated Number of Days of State exceedances (>50 $\mu g/m^3$) *	1	1	0
Estimated Number of Days of Federal exceedances (>150 $\mu g/m^3$) *	0	0	0
Particulate Matter <2.5 microns, $\mu g/m^3$ Worst 24 Hours*	28.7	30.8	22.2
Estimated Number of Days of Federal exceedances (>35 $\mu g/m^3$) *	0	0	0

N/A = not available
Source: California Air Resources Board, 2011, 2012, 2013 Annual Air Quality Data Summaries available at http://www.arb.ca.gov/adam/topfour/topfour1.php
** California standards for ozone, carbon monoxide, and particulate matter are not to be exceeded. Federal standard for CO not to be exceeded more than once per year. Federal ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.*

IMPACT ANALYSIS

Methodology and Significance Thresholds

Mobile source air toxics emissions associated with vehicle traffic on Highway 101 were estimated based on the methodology developed by the UC Davis-Caltrans Air Quality Project "*Estimating Mobile Source Air Toxics Emissions: A Step-By-Step Project Analysis Methodology*" (December 2006). This spreadsheet application was designed to generate the total amount of the above six pollutants of concern based on EMFAC2011 TOG emission factors and CARB speciation factors and the particulate emissions factors from EMFAC2011. These emission factors are then multiplied by traffic volumes for the segments of concern to obtain total emissions, which for this study, were based on grams per mile. Spreadsheet outputs adapted from the UC Davis-Caltrans MSAT model and composite emission rates are contained in the Appendix.
Emissions factors were reviewed for 45 miles per hour, 50 miles per hour, and 65 miles per hour, and 65 miles per hour was determined to be the worst reasonable case speed (highest emission levels); therefore emissions were based on an average speed of 65 miles per hour as a conservative approach. Traffic volumes for Highway 101 were obtained from Caltrans *2013 Annual Average Daily Traffic Volumes*. According to the Caltrans traffic data (2013) for Highway 101, the Annual Average Daily Traffic (AADT) volume for the section of the Highway that is between Pleasant Valley Road and Camarillo Spring Road is 130,000 vehicles. Truck traffic (2 axles or greater) is estimated to comprise 4.91% of the AADT based on Caltrans *2012 Annual Average Daily Truck Traffic*; the estimate of current truck travel is based on verified counts made by Caltrans in 2012 at other nearby post miles. The nearest verified count of truck travel was made in 2012 at the Pleasant Valley Road interchange, which is approximately 800 feet

northwest of the project site. It should also be noted that the proportion of heavy trucks in the overall fleet has decreased markedly from previous years. This is presumed to be a result of the recent recession, and it is unknown how long it will take for truck volumes to increase back to historical levels.

The HARP (ver. 1.4f) program includes a database within which to inventory the geographical location of the sources and receptors. In addition, the database maintains the emissions associated with the sources. The freeway was modeled as a series of volume sources and the emissions data entered into the HARP program database. The HARP program also includes the Industrial Source Complex (ISC3) dispersion model, which was used to calculate the concentrations along the highway resulting from the emissions contained in the database. Specific meteorology was input to the model using the nearest available meteorological files downloaded from the VCAPCD website. Terrain for the site was based on digital elevation models (DEMs) downloaded from the United States Geological Survey, with the freeway elevations obtained from Google™ Earth and appropriately adjusted to the DEM elevations. The freeway varies in elevation between approximately 114 feet and 151 feet above mean sea level along the length of the approximately one-mile segment. The project site is located at an elevation of approximately 121 feet. These differences in topography are considered by the dispersion model.

It should be noted that ISC3 was not developed to analyze sources that move through an area over time; therefore, the use of the volume methodology provides for several simplifying assumptions that may overestimate actual concentrations. In addition, past examination of the Gaussian plume methodology on which ISC3 is based indicates that, due to underlying assumptions, ISC3 tends to overestimate concentrations by 2.5 to 10 times. Nonetheless, it provides a reasonable estimate of possible impacts for the purposes of CEQA.

The ISC3 model provides X/Q (CHI/Q = chi/q = χ/q) values, which are the concentration estimated by the air quality model based on an emission rate of one gram per second. HARP then uses the X/Q values to estimate actual concentration by multiplying this value against the emission rate in grams per second. The carcinogenic health risk is then calculated by the HARP model based on the emission concentration at each sensitive or grid receptor using the toxicity data contained in the HARP database. The chronic health risk value is calculated by the HARP model using the California Environmental Protection Agency, OEHHA method of dividing the annual average concentration by the chronic inhalation reference exposure level (REL) (HARP, 2012).

Three exposure pathways are considered for health effects: ingestion, dermal contact, and inhalation. The first two generally require direct contact with the contaminated medium (usually soil), while the latter includes the inhalation of vapors and respirable dust (usually in the form of particulate matter less than 10 microns [PM_{10}]). Inhalation is the only available pathway for the exhaust vapors that contain acrolein, acetaldehyde, formaldehyde, benzene, and 1,3-butadiene. Diesel PM is a respirable dust that can potentially be both ingested (oral) or enter the body through contact with contaminated soil. Oral or non-inhalation exposure pathways include the ingestion of soil, fisher caught fish, drinking water from surface waters, mother's milk, homegrown produce, beef, pork, chicken, eggs and cow's milk. With respect to diesel PM, the oral pathway is available only through ingestion of contaminated soil, similar to

the dermal contact. Neither OEHHA nor the USEPA Integrated Risk Information System (IRIS) lists an oral slope toxicity for diesel PM, as ingestion of soil is uncommon and not generally a substantial contributor to carcinogenic health risk associated with diesel PM. Therefore, only the inhalation pathway is considered in this risk assessment.

Carcinogenic health risk was based on a stay-at-home adult resident present at proposed residential units for the recommended default time periods of 9, 30, and 70 years. These correspond to the central tendency for the average time spent in a single residence (50th percentile) and high-end estimate for residency time (95th percentile) recommended by the USEPA (August 1997, Volume 3), and a lifetime residency, respectively. The 9-year residency is also used by the OEHHA to calculate risk for child receptors. Per the SBCAPCD *Modeling Guidelines for Health Risk Assessments* (August 2012), the "Derived Adjusted" risk calculation method was used to estimate the 70-year cancer risk. That calculation method is not available for the 30-year and 9-year scenarios, so the average annual concentration was used to determine health risk for those scenarios. Chronic, non-cancer risks were calculated using the "Derived (OEHHA)" risk calculation method.

The USEPA considers for risk management those pollutants that could cause carcinogenic risks between one in 10,000 (1.0×10^{-4} or 1.0E-04) and one in one million (1.0×10^{-6} or 1.0E-06). Passage of Proposition 65 (encoded in California Health and Safety Code Section 25249.6) in 1986 prohibits a person in the course of doing business from knowingly and intentionally exposing any individual to a chemical that has been listed as known to the state to cause cancer or reproductive toxicity without first giving clear and reasonable warning. For a chemical that is listed as a carcinogen, the "no significant risk" level under Proposition 65 is defined as the level which is calculated to result in not more than one excess case of cancer in 100,000 individuals (1.0E-05) exposed over a 70-year lifetime. The "risk reduction level" for cancer burden, another method of reporting cancer risk, is defined as the level which is calculated to result in not more than 5 excess cancer cases in 10 individuals (0.5). For non-carcinogenic risk, the "no significant risk" level is defined as the level which is calculated to result in a Hazard Index less than 1. The VCAPD has adopted risk levels for purposes of notification pursuant to the AB 2588 program; the levels are summarized in Table 3 (VCAPCD, 1993).

Table 3
VCAPCD Public Notification Levels

Risk Variable	Public Notification Levels	Risk Reduction Levels
Cancer Risk	≥ 10 in a million	≥ 25 in a million
Non-Cancer Risk	Hazard Index > 1	Hazard Index > 3
Cancer Burden	--	≥ 0.5 excess cancer cases

Source: Air Toxics "Hot Spots" (AB 2588) Public Notification Procedures (1993).

To provide a conservative estimate of on-site health risks, this analysis uses the VCAPCD "public notification levels" for risk, which are consistent with the "no significant risk" level under Proposition 65 of one excess case of cancer in 100,000 individuals (1.0E-05) exposed over a 70-year lifetime.

To provide a perspective on risk, the American Cancer Society (2007) reports that in the U.S., men have a one in two chance (0.5 probability) and women about one in three chance (0.3) probability of developing cancer during a lifetime, with one in four deaths (0.23) in the U.S. attributed to cancer. Given this background carcinogenic risk level in the general population, application of a 1.0E-05 excess risk limit means that the contribution from a toxic hazard should not cause the resultant cancer risk for the exposed population to exceed 0.50001 for men and 0.33001 for women.

Results

Health risks for the proposed project were determined using eight receptors in the HARP model. The locations and height of the receptors were based on the property boundaries and the proposed building heights. Receptors were located at the point closest to Highway 101 where residents would reside, the point furthest from Highway 101 where residents would reside, and a center point where residents would reside. For each of the three distances from Highway 101, receptors on each potential floor of residential space were assessed, resulting in a total of eight receptors. The Point of Maximum Impact (PMI), which is typically at the border of the source (freeway fence), was not calculated since it is not relevant to the analysis based on the specific location of the proposed land uses. A receptor grid was used to evaluate whether or not the pattern of exposure appeared to be accurate as illustrated by the contour pattern developed by the HARP software.

The results of the health risk modeling are shown in Table 4, below. The risk for residents was very similar at each floor, so the maximum is included in this report and full results can be viewed in the Appendix.

Table 4
Potential Health Risks at Receptors

	Excess Cancer Risk	Exceed Criterion? (1E-05)	OEHHA Chronic Hazard Quotient[1]	Exceed Criterion? (>1)
Sensitive Receptor 0628 – Closest to Freeway, Third Floor				
9-year Resident				
Adult	2.53E-06	No	1.36E-03	No
Child	3.74E-06	No	--	--
30-year Adult	8.44E-06	No	1.36E-03	No
70-year Lifetime	1.97E-05	**YES**	1.36E-03	No
Sensitive Receptor 0631 – Center of Site, Third Floor				
9-year Resident				
Adult	3.31E-06	No	1.78E-03	No
Child	4.89E-06	No	--	--
30-year Adult	1.10E-05	**YES**	1.78E-03	No
70-year Lifetime	2.57E-05	**YES**	1.78E-03	No
Sensitive Receptor 0633 – Furthest from Freeway, Second Floor				
9-year Resident				
Adult	1.76E-06	No	9.45E-03	No
Child	2.60E-06	No	--	--
30-year Adult	5.87E-06	No	9.45E-03	No
70-year Lifetime	1.37E-05	**YES**	9.45E-03	No

See appendix for complete model results.
1: Note that chronic risk does not change with increase in years as calculation terms cancel out.

As shown in Table 4, no significant carcinogenic health risk was determined for the 9-year adult or child resident. However, a significant carcinogenic health risk would be present for the 70-year adult resident at each of the three receptor distances and for the 30-year adult resident the central location on the project site. Diesel exhaust particulates are the major source of this carcinogenic health risk as they are responsible for approximately 85% of the calculated risk. Chronic inhalation health hazards (such as lung inflammation, immune suppression, and immune sensitization) are below the VCAPCD threshold hazard index of 1.0. In addition, carcinogenic (cancer) health risk was below the VCAPCD excess cancer risk criterion of 1E-05 for all potential residents. Please see the Appendix for more detailed accounting of the risk at each site per pollutant of concern.

The proposed residential development on the site would potentially expose on-site residents to significant carcinogenic health risks associated with vehicle emissions, specifically diesel exhaust particulates, based upon VCAPCD health risk criteria. The calculated risk is based on exposure to outdoor air 24 hours per day, but the USEPA *Exposure Factors Handbook* indicates that the recommended daily activity pattern includes 16.4 hours per day spent inside and 2 hours per day outside (Volume III, Table 15-176 Summary of Recommended Values for Activity Factors). The remaining daily time is spent off-site. As a conservative simplifying assumption, this analysis presumes that residents would have the windows open sufficiently to equalize the concentration of pollutants between the indoor and outdoor environment. This simplifying assumption results in a calculated risk that is likely to be nearly an order of magnitude higher than actual indoor risk.

It should be noted that diesel particulates will settle out to some unknown extent on window screens and other surfaces as outdoor air enters into the indoor air environment, though at least a portion of this settled material would become re-suspended during cleaning and other activities. Therefore, it is likely that this analysis over-estimates the carcinogenic health risk. Furthermore, current regulatory action by the CARB is intended to reduce the amount of diesel exhaust particulates associated with on-road diesel trucks in the future (note that the analysis was based on year 2014 composite emission factors). Because the carcinogenic health risk for 70-year and 30-year residency is greater than 10 in one million, it is concluded that the potential effect of exposure to diesel particulate air pollutants at this site under current conditions is significant under CEQA.

Mitigation

Based on the above analysis and the fact that the site is at the margin of the significance criteria for carcinogenic risk, the potential carcinogenic health hazard can be mitigated to a less than significant level (below 10 in one million) by reducing the amount of diesel exhaust particulates that the residents are exposed to in the indoor environment. Therefore, we recommend the following actions:

- Forced air ventilation with filter screens on outside air intake ducts shall be provided for all residential units proposed on the project site. The filter screens shall be capable of removing at least 95% of the particulate matter including fine particulate matter (PM<2.5 micron).

- For individual residential units with separate HVAC systems, a brochure notifying the future residents of the need for maintaining the filter screens shall be prepared and provided at the time of ownership exchange. In addition, a notice of the diesel particulates risk hazard and the need for screen maintenance shall be placed in the property title or lease.
- For residential units with conjoined HVAC (e.g. apartments), the agent (HOA, landlord) shall be responsible for maintaining the filter screens annually. In addition, a notice of the diesel particulates risk hazard and the need for screen maintenance shall be placed in the property title or lease.
- Windows and doors shall be fully weatherproofed with caulking and weather-stripping that is rated to last at least 20 years.

These actions would provide for the removal of particulates prior to entering into the indoor environment, thereby reducing the overall exposure of individual residents. The above actions would apply to all residential receptors on the project site. Table 5 below indicates the calculated carcinogenic risk associated with this mitigation measure for proposed residential units on the project site. The estimated reduction in cancer risk assumes removal of the DPM by the whole house filter (these filters have efficiency rates exceeding 95%), and continued exposure to outside air for a period of two hours daily (USEPA *Exposure Factors Handbook*).

Table 5
Mitigated Potential Carcinogenic Health Risks Within the Proposed Project Site

	Mitigated Excess Cancer Risk	Exceed Criterion? (10^{-5})
Closest Receptor		
9-year Resident		
Adult	2.11E-07	No
Child	3.12E-07	No
30-year Adult	7.03E-06	No
70-year Lifetime	1.64E-06	No
Center Receptor		
9-year Resident		
Adult	2.76E-07	No
Child	3.12E-07	No
30-year Adult	9.17E-07	No
70-year Lifetime	2.14E-06	No
Furthest Receptor		
9-year Resident		
Adult	1.47E-07	No
Child	2.17E-07	No
30-year Adult	4.89E-07	No
70-year Lifetime	1.14E-06	No

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Emissions Calculations

AADT	AADT per direction	Diesel Truck %	Number daily trucks	Diesel Truck *	Gas Truck *	LD Vehicles	LD Diesel **	All Gas
130,000	65,000	4.91%	3,192	824	2,368	61,808	3,333	60,843

Source: Caltrans Traffic Data Branch, 2013 AADT and Truck Traffic 2013

* "Translation Factors" (the fractions below identify % of trucks that are diesel-powered; they translate Caltrans truck data into an estimate of diesel vehicles)

Diesel Proportion: 25.8%

Non-Diesel Proportion: 74.2%

Translation Factors Source: UC Davis-Caltrans Air Quality Project, Project-Level Mobile Source Air Toxics Analysis

** Light Duty Diesel proportion based on vehicle miles traveled for LDA, LDT1, and LDT2 for Year 2014, South Coast Air Basin , EMFAC2011.

	Truck Diesel Vehicles		Light Duty Diesel Vehicles		All Gas Vehicles
Speed (miles/hour)	**hot stabilized exhaust PM (grams/mile)**	**hot stabilized exhaust TOG (grams/mile)**	**hot stabilized exhaust PM (grams/mile)**	**hot stabilized exhaust TOG (grams/mile)**	**hot stabilized exhaust TOG (grams/mile)**
65	0.1046	0.1862	0.0326	0.0520	0.1253

Source: EMFAC2011 Emissions Database

MSAT Speciation Factors

Analysis Year	**Diesel**					**Non-Diesel**				
	Hot Stabilized Exhaust					**Hot Stabilized Exhaust**				
	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde	benzene	1,3-butadiene	Acetaldehyde	Acrolein	Formaldehyde
2012	0.020009	0.001900	0.073526	n/a	0.147133	0.025656	0.005873	0.004370	0.001380	0.018500
Total Daily Emissions, g/mi	6.54	0.62	24.03	0.00	48.08	195.63	44.78	33.32	10.52	141.06

Speciation Source: California Department of Transportation, Division of Transportation Planning, "Project-Level Mobile Source Air Toxics Analysis Spreadsheet Tool," California Department of Transportation, Division of Transportation Planning, "Project-Level Mobile Source Air Toxics Analysis Spreadsheet Tool," http://aqp.engr.ucdavis.edu/Toxics/Toxics.html. 2006.

Derivation of Emission Rates for Area Sources

Freeway width	39.0	feet
Distance	6060	feet
sq ft/mile	236340	sf
sq m/mile	21968	sqm
Each segment at	390.0	feet long

Emissions

	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grams/mi/day *	442.4	202.2	45.4	57.4	10.5	189.1
grams/mi/sec	5.12E-03	2.34E-03	5.26E-04	6.64E-04	1.22E-04	2.19E-03
grms/sec/sqm	2.33E-07	1.07E-07	2.39E-08	3.02E-08	5.54E-09	9.97E-08

* Total emissions per mile calculated using the above speciation factors.

Emissions per Area Segment

	Diesel PM	Benzene	1,3-Butadiene	Acetaldehyde	Acrolein	Formaldehyde
grms/day	32.7	14.9	3.4	4.2	0.8	14.0
grms/hr	1.4	0.6	0.1	0.2	0.0	0.6
grms/sec *	3.782E-04	1.728E-04	3.882E-05	4.903E-05	8.996E-06	1.617E-04
lbs/year	26.29	12.02	2.70	3.41	0.63	11.24
lbs/hour	0.00300	0.00137	0.00031	0.00039	0.00007	0.00128

* Emission factor to be multiplied by X/Q to obtain concentration.

Appendix C

Noise Study Results

Veneklasen Associates
Consultants in Acoustics | AV | IT | Environmental Noise

February 19, 2014

PB Companies
3480 South Higuera Street, Suite 120
San Luis Obispo, California 93401

Attention: **Mr. John W. Belsher**

Subject: **Mission Oaks**
Camarillo, California
Exterior Envelope Acoustical Design
VA Project # 5314-001

Dear Mr. Belsher:

Veneklasen Associates (VA) has completed our acoustical review of the Mission Oaks Development Site located in Camarillo, California. VA's acoustical analysis was limited to the exterior noise and exterior facades of the buildings proposed for the site. This report represents the results of our findings.

1.0 INTRODUCTION

This study was conducted to determine the impact of the exterior noise sources on the Mission Oaks Residential Development. VA's scope of work included calculating the exterior noise levels impacting the site, determining the method required to lower the exterior sound levels to meet the applicable code requirement and review the planned exterior facade construction (including doors, windows, walls and roofs) to determine compliance of the interior sound levels with State of California and the City of Camarillo noise requirements. The results of VA's analysis are presented in this report.

The project reviewed consists of an 8.56 acre site containing five 3-story buildings (Buildings A-E), seven 3-story buildings (Buildings 1-7), and one 4-story building (Building 8) containing approximately 250 multi-family residential units. The project site is bounded by the 101 Freeway to the south, Camino Ruiz to the east, Verdugo Way to the north, and existing properties to the west.

2.0 NOISE CRITERIA

LDN is the 24-hour equivalent sound pressure level in which the nighttime noise levels, occurring between the hours of 10 pm and 7 am, are weighted by adding 10 dB of sound level to the measured hourly average. Since this is a 24 hour metric, single event noise levels (truck pass-bye, bus, trains, etc.) are smoothed over the time frame meaning that the single event noise levels are not as prominent in the analysis.

Leq (equivalent continuous sound level) is defined as the steady sound pressure level which, over a given period of time, has the same total energy as the actual fluctuating noise.

2.1 State of California Building Code and City of Camarillo Noise Element

The City of Camarillo Noise Standards require that the interior noise levels not exceed 45 LDN. This is consistent with the California State Building Code section 1207, "Sound Transmission Control."

If the interior noise level exceeds 45 LDN with windows open, then a mechanical ventilating system or other means of natural ventilation shall be provided.

The exterior noise goals for the City of Camarillo is 60 LDN, which is described in their General Plan. This applies to multi-family private patios.

3.0 EXTERIOR NOISE ENVIRONMENT

3.1 Noise Measurements

Vehicular movement on the surrounding streets is the dominant exterior sound source affecting the site. A site visit was performed to complete acoustical measurements of the existing sound exposure. VA performed short-term noise measurements on the project site on Wednesday, December 4, 2013. Figure 1 provides a Leq sound level and calculated LDN value for each monitor location. The CNEL values were estimated from the measurements.

Figure 1 –Aerial View of Project Site Showing Exterior Monitoring Locations

3.2 Computer Modeling

VA has utilized the Traffic Noise Model (TNM 2.5) computer software program developed by the FHWA (Federal Highway Administration) in order to predict vehicular noise levels at various locations. The primary purpose of the computer model was to determine how the noise environment will change due to traffic and site changes.

Current traffic conditions for Verdugo Way and Camino Ruiz were obtained from the City of Camarillo Traffic Department. The current traffic count on Verdugo Way is 14,000 ADT near Santa Rosa Road and it drops to 4,000 ADT on the east side of Camino Ruiz. Camino Ruiz has a traffic count of approximately 2,500 ADT. According to the City of Camarillo 2025 traffic map, the traffic counts for these roadways are not expected to increase.

Current traffic counts and traffic mix for 101 Freeway were obtained from the California Department of Transportation website. The current traffic count on 101 Freeway is 126,000 ADT. The off-ramp has a current (year 2007) count of 9,300 ADT.

Current traffic counts were adjusted to reflect 2013 counts. No future traffic counts were available for 101 Freeway and VA has estimated the growth in traffic using a 1% increase per year to determine future (year 2023) traffic. The increase in noise level due to traffic by 2024 is calculated to be between 0-1 dB.

3.3 Overall Exterior Noise

Based on our measurements, the computer model, and the project site plan provided by the Client, VA calculated the existing and future (year 2024) LDN noise levels at various locations within the project site. To simplify the analysis and presentation of our results, VA has separated the site into locations based on the sound exposure and required mitigation. The noise levels reported are worst-case for each location and some areas will be exposed to a lower noise level due to shielding from building facades and structures on site. The predicted sound levels at each location are listed in Table 1.

Table 1 – Future Exterior Noise Levels

Buildings	Facade	Future Average Noise Level, LDN
Buildings A, B, C, D, E (3-story)	South	75
	North	< 60
	East/West	72
Building 1	West	62
	North/South/East	< 60
Building 2	South	72
	North	< 60
	East	69-72
	West	62-68
Building 3	All	< 60
Building 4	South	70
	North	< 60
	East	60-64
	West	60-66
Building 5	South	67
	North	< 60
	East	62
	West	64
Building 6	South	65
	North	< 60
	East	60-62
	West	66-69
Building 7	West	62-64
	North/South/East	< 60
Building 8	North	62
	South/East/West	< 60
Spa/Pool	-	< 60

4.0 EXTERIOR NOISE LEVELS AT OUTDOOR USE AREAS

The project contains private balconies for each unit as well as a common outdoor use spa/pool area in the center of the project. As described in section 2.1, exterior noise levels at outdoor use areas acceptable up to 60 LDN.

4.1 Common Outdoor Use Areas

The future exterior noise level at the common outdoor spa/pool area will be less than 60 LDN. This will meet the City of Camarillo exterior noise criteria and no mitigation is required.

4.2 Private Balconies

As designed, the exterior noise levels will exceed 60 LDN at some of the building facades where balconies may be located. In order to reduce the noise impacts to the balconies, they should be located on the facades that are shielded from the 101 Freeway. VA recommends the balconies be located on the facades as shown in Table 2, below.

Table 2 – Future Exterior Noise Impacts to Balconies by Facade

Buildings	Façade	Future Average Noise Level, LDN	Conclusion
Buildings A, B, C, D, E	North	< 60	Acceptable
Building 1	North/South/East	< 60	Acceptable
Building 2	North	< 60	Acceptable
	West	62-68	Above General Plan goal
Building 3	All	< 60	Acceptable
Building 4	North	< 60	Acceptable
	East	60-64	Above General Plan goal
	West	60-66	Above General Plan goal
Building 5	North	< 60	Acceptable
Building 6	North	< 60	Acceptable
	East	60-62	Above General Plan goal
Building 7	North/South/East	< 60	Acceptable
Building 8	South/East/West	< 60	Acceptable

4.3 Private Balcony Mitigation

As shown in Table 2, the exterior noise levels at the balconies will exceed 60 LDN at some locations. VA recommends that a 25 foot high barrier be constructed between Buildings A-E. With this barrier, balcony noise impacts would be less than 60 LDN at all of the facades shown in Table 2.

5.0 INTERIOR NOISE CALCULATION

VA's calculations include the exterior wall, but indicate that the interior noise levels are determined by the acoustical performance of the glazing system. These calculations assume the presence of the 25 foot barrier as described in Section 4.3.

5.1 Exterior Wall Construction

VA assumes that the exterior wall at residential buildings will consist of 3 coat stucco on wood studs, a single layer of gypsum on the interior and batt insulation in the cavity.

5.2 Window and Door Assemblies

VA utilized the window and door assemblies (glass, frame and seals) shown in Table 3, below. The transmission loss values were based on typical glazing assemblies. The actual construction and STC ratings shown may differ for the project, but should be reviewed when submitted.

Table 3 – Example Glazing Assembly Descriptions

Assembly Rating	Thickness	Typical Glazing Construction
STC 30	1" dual	1/8" lite, 3/4" airspace, 1/8" lite

5.3 Interior Average Noise Level (LDN)

VA calculated the interior level within the residential units given the noise environment and the exterior façade construction described above. The calculations were based on the conceptual plans provided. No floor plans, elevations, or window schedules were available. The interior noise level increases with increased glazing area. Because the plans are still conceptual VA estimated the glazing area for the calculations. A glazing area of approximately 30% was used for bedrooms and 40% for other habitable rooms. Once window and door schedules are finalized, they should be submitted to VA for review. VA understands that there will be no openings or glazing on the south-facing facades of buildings A-E that face the freeway.

VA recommends that STC 30 glazing be utilized for all windows, sliding doors, and French doors on the project. With STC 30 glazing the interior noise level will be less than 45 LDN and will meet the City's interior noise criteria.

5.4 Mechanical Ventilation Requirement

Because the windows and doors must be kept closed to meet the noise requirements at some locations, mechanical ventilation is required. The residential units with noise impacts greater than 60 LDN will require mechanical ventilation. This is shown in Table 4, below. The mechanical ventilation shall meet all Code requirements, including the capability to provide sufficient fresh air exchanges, without depending on open windows or leakage through windows and doors. The ventilation system shall not compromise the sound insulation capability of the exterior facade assembly.

Table 4 – Mechanical Ventilation Requirements

Location	Façade	Mechanical Ventilation
Buildings A, B, C, D, E, 1, 2, 4, 5, 6, 7	All	Required
Building 3	All	Not Required
Building 8	North	Required
Building 8	South/East, West	Not Required

6.0 CONCLUSIONS

The following is a summary of the conclusions within this report.

- Exterior noise levels at the common outdoor pool/spa areas are acceptable.
- Exterior noise levels at some balconies will exceed the City's exterior noise criteria. A 25 foot high barrier will be constructed between Buildings A-E. With this barrier, balcony noise impacts would be less than 60 LDN at all of the facades shown in Table 2.
- VA assumes that the exterior wall will be stucco at the residential properties. No changes required to the design of the exterior wall construction.
- No changes required to the exterior roof construction.
- In order to meet the City's interior noise criteria, VA recommends STC 30 windows, sliding doors, and French doors for all units.
- Mechanical ventilation is required for all units with noise impacts greater than 60 LDN, as shown in Table 4.

Various noise mitigation methods may be utilized to satisfy the noise criteria described in this report. Alteration of mitigation methods that deviate from requirements should be reviewed by the acoustical consultant.

We trust this information is satisfactory. If you have any questions or comments regarding this report, please do not hesitate to contact us.

Sincerely,
Veneklasen Associates, Inc.

John LoVerde
Associate Principal

G:\5314-001\report2b

Appendix D

Traffic Study

Traffic Impact Analysis
Mission Oaks Residential Project
GPA 2013-03
City of Camarillo

Prepared for:

Mission Oaks Camarillo, LLC

PB Companies, LLC

3480 S. Higuera Street, Suite 140
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Prepared By:

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June 2014

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SUMMARY

The Mission Oaks Residential project is proposing a General Plan Amendment to provide residential housing on the project site. The existing General Plan assumed commercial/office/industrial uses on this site. The following analysis consists of existing conditions, existing plus approved projects, existing plus approved projects plus proposed project and 2030 General Plan conditions. The study area for the project consists of nine intersections located within Camarillo. Traffic signal warrants were evaluated for two study area intersections located on Camino Ruiz at Adolfo Road and at Verdugo Way. The project site plan was reviewed. Mitigation Measures are also recommended for any significant impact found.

INTRODUCTION

The project site is located easterly of Santa Rosa Road, north of US Highway 101. The project is located on the southwest corner of the intersection of Camino Ruiz and Verdugo Way. The proposed site plan is presented in Exhibit 1.

The Mission Oaks Residential project consists of 145 for sale condominium/townhomes located on an 8.8 acre project site. The overall density of the project is 16.5 dwelling units per acre. On-site parking for 348 vehicles is proposed in garage and surface parking areas. Access to the project site is proposed via two roadway connections to Camino Ruiz and one roadway connection to the hotel/commercial center to the west of the project site. The internal roadways and driveways would be designed in accordance with all City regulations, including those pertaining to emergency access.

EXISTING SETTING

The project analysis focused on nine nearby intersections that were selected by the City of Camarillo Traffic Engineering Department. Current traffic counts were required to be collected for each intersection during the AM and PM peak periods. The following is a general description of the area roadways, study area intersections, transit service and level of service methodology/thresholds of significance.

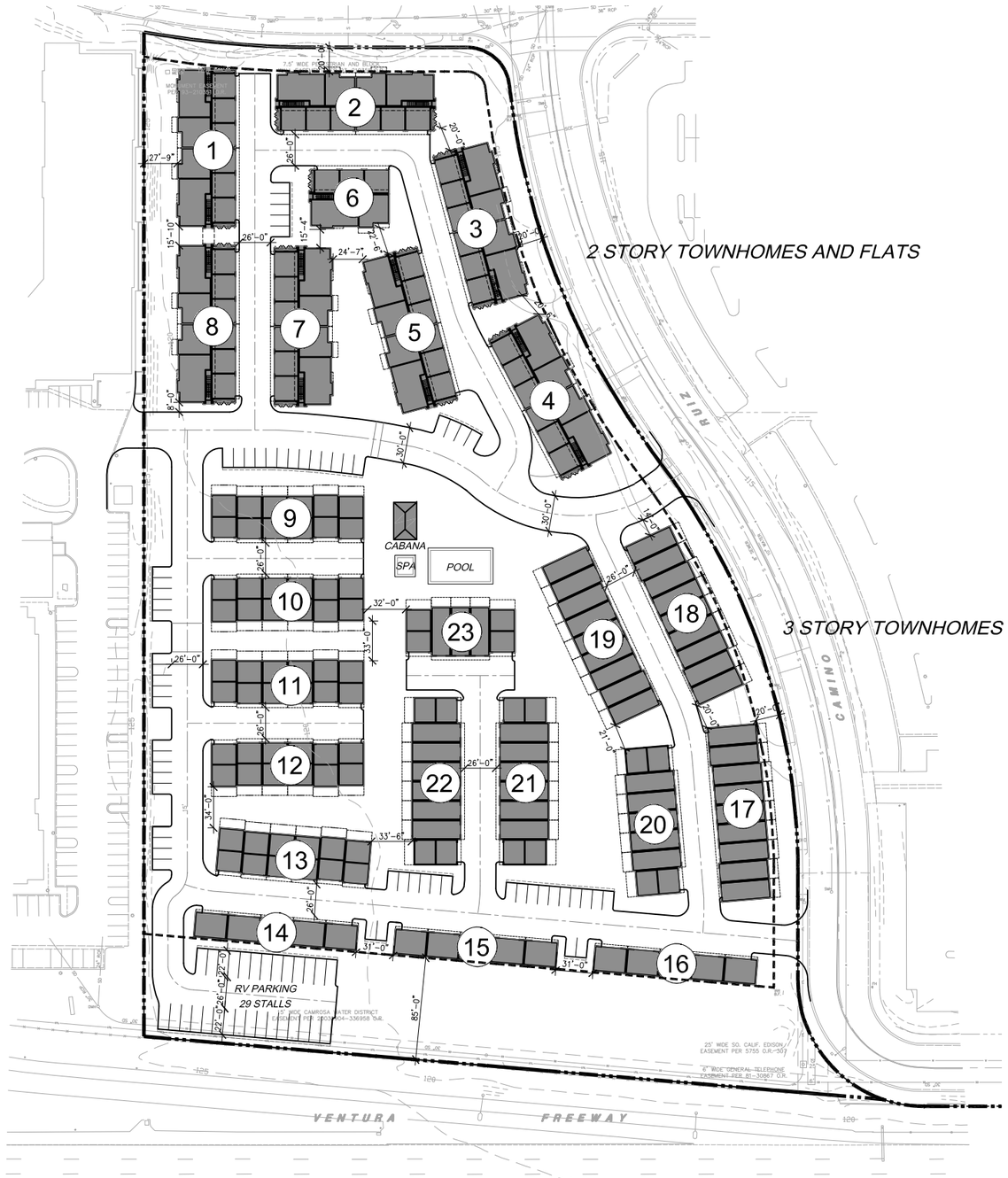
Existing Roadway Network Description

The project site is served by a circulation system comprised of highways, arterial streets, and collector streets, as shown in Exhibit 2. A description of the study-area roadways is provided below.

US Highway 101, located south of the project site, is a multi-lane freeway which serves as a major arterial for the City and is the principal intercity north-south route through Ventura County. Although it is a north-south highway in the State freeway system, U.S. 101 is aligned in the east-west direction in the vicinity of the Camarillo. US Highway 101 is a 6-lane freeway within the study area. US Highway 101 provides regional access to the project area via the Santa Rosa Road interchange.

Santa Rosa Road is a Primary Arterial that intersects US Highway 101 and travels northerly through Camarillo. Within the study area, Santa Rosa Road is a four lane arterial with traffic signal controlled intersections at major cross streets.

Pleasant Valley Road is a Primary Arterial that extends from Port Hueneme to US Highway 101 southerly of the project site. Within the study-area, Pleasant Valley Road is a four-lane roadway that extends south of US Highway 101, then bends east-west and provides access to Port Hueneme and Oxnard.



145 Townhomes and Flats
8.66 acres
16.7 du/ac
Parking required and provided
290 garages
58 open
348 total (2.4/du)
29 RV (0.2/du)

NORTH

0 50' 100' 150'

1" = 50'-0"

2014-187 MAY 15 2014

MISSION OAKS

5000 CAMINO RUIZ, CAMARILLO, CA

CONCEPTUAL SITE PLAN

HAWKEYE INVESTMENTS II

ARCHITECTS ORANGE

144 NORTH ORANGE ST., ORANGE, CALIFORNIA 92866 (714) 639-9860

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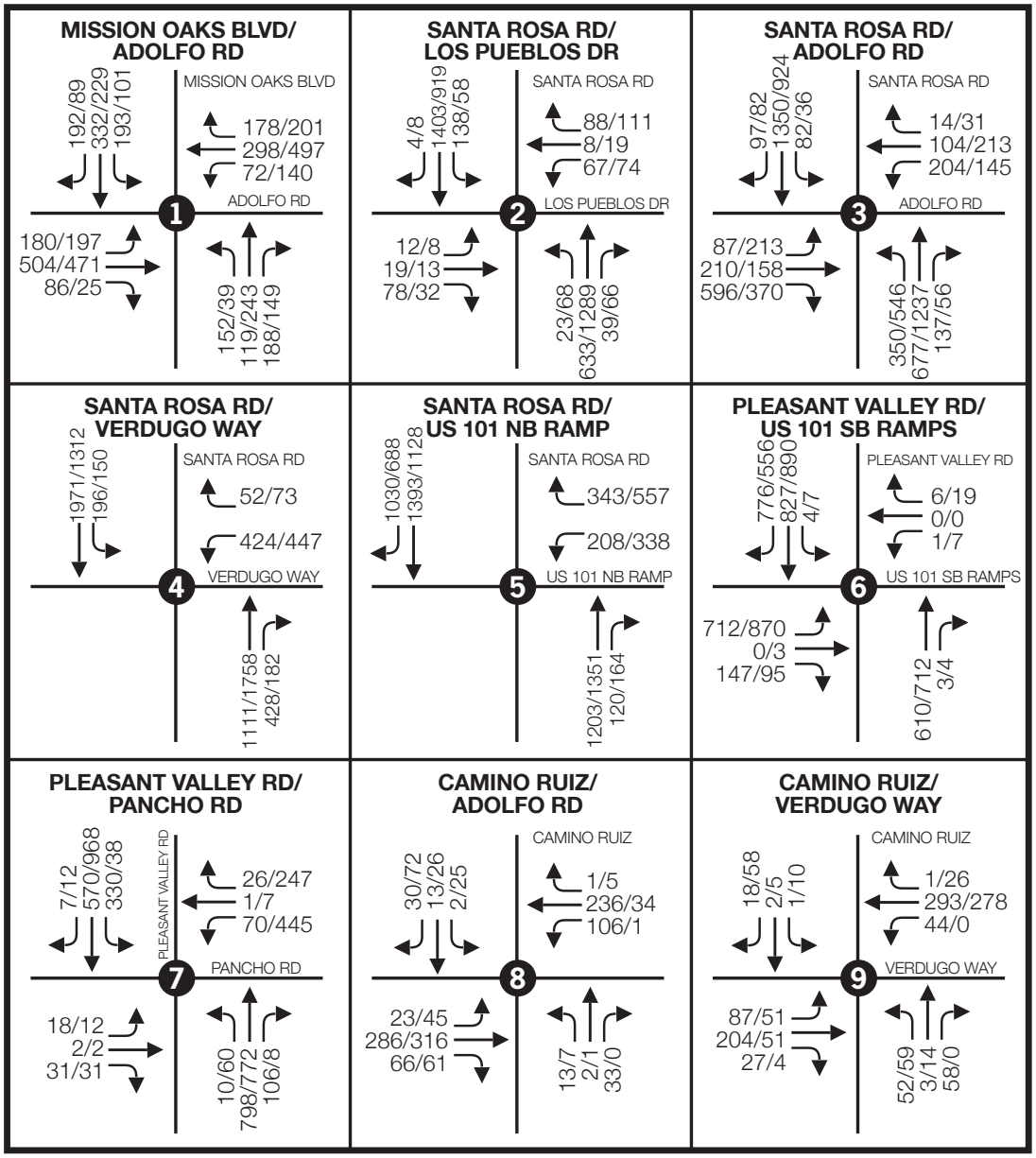
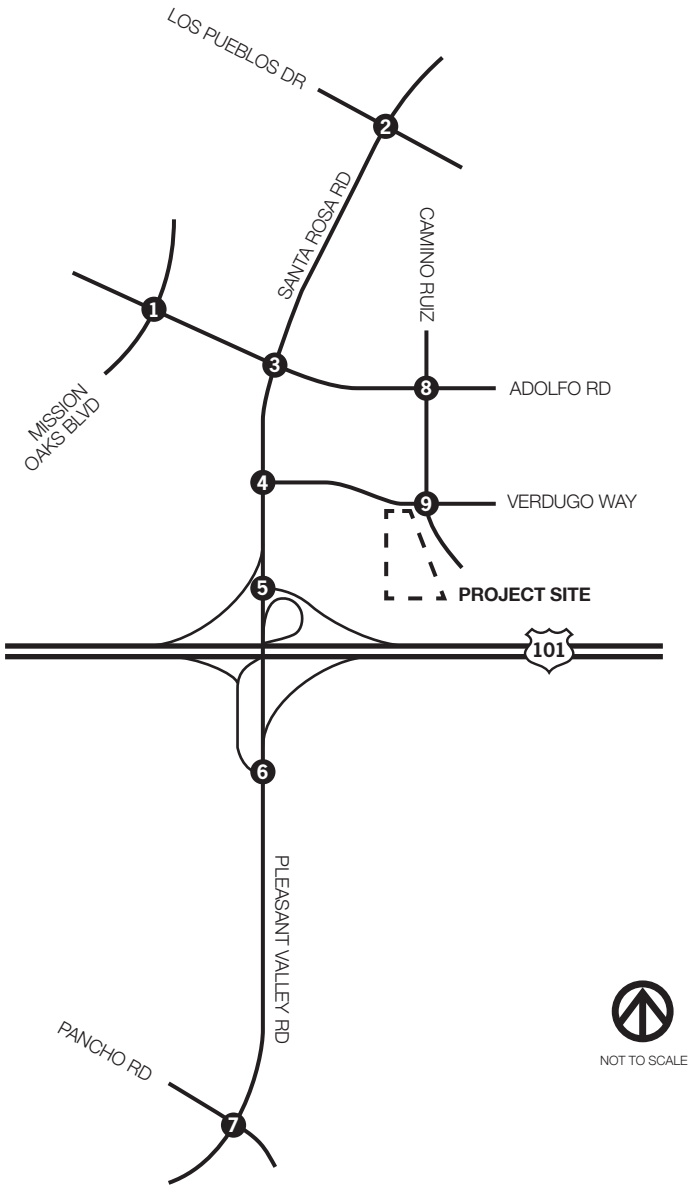




Orosz Engineering Group, Inc.

KEY
XX/YY = AM/PM PEAK HOUR VOLUMES
X = INTERSECTION NUMBER

2

EXISTING CONDITIONS
AM / PM PEAK HOUR TRAFFIC VOLUMES
MISSION OAKS RESIDENTIAL

Adolfo Road is a Primary Arterial that travels in an east-west orientation northerly of US Highway 101 and provides internal circulation for the City of Camarillo northerly of the freeway.

Verdugo Road is a primary collector roadway that serves the project site and surrounding light industrial/commercial area easterly of Santa Rosa Road and northerly of US Highway 101.

Camino Ruiz is a local collector providing direct access to the project site. There are two travel lanes, one in each direction, with on-street parking provided on both sides of the street.

Study Area Intersections

The City of Camarillo Traffic Engineering Department identified nine potentially impacted intersections within the vicinity of the project site. This traffic impact analysis evaluated the intersection operations at each location. The study area intersections for this analysis and the type of intersection traffic controls are summarized in Table 1 below.

Table 1
Study Area Intersections

Location	Traffic Control
Pleasant Valley Road at Pancho Road	Traffic Signal
Santa Rosa Road at	
EB Hwy 101 Ramps	Traffic Signal
WB Hwy 101 Ramps	Traffic Signal
Verdugo Way	Traffic Signal
Adolfo Road	Traffic Signal
Los Pueblos Drive	Traffic Signal
Mission Oaks Blvd at Adolfo Road	Traffic Signal
Camino Ruiz at	
Verdugo Way	2-way STOP
Adolfo Road	2-way STOP

Existing Public Transit

At the present time, the City of Camarillo operates an intra-city public transit system consisting of seven buses. The Camarillo Area Transit ("CAT") intra-city transit system has one fixed route bus. Dial-a-ride service providing curb-to-curb transportation is also available for all persons. The proposed project is not located along the current CAT fixed route.

The City also supports the Ventura Intercity Service Transit Authority ("VISTA") bus system and participates with other agencies in coordination as well as financial aid. The VISTA system connects Camarillo with surrounding cities and, thereby, provides access to major employment, commercial, governmental, and recreation centers, as well as California State University, Channel Islands.

Study Methodology

The traffic analysis focuses on the operating conditions at key intersections during peak travel periods which typically occur during the morning and afternoon commute hours. To determine the operating conditions at the study intersections, a level of service (LOS) rating scale is commonly used. The intersection operations are rated on a scale that compares traffic volumes to capacity and assigns a letter value to this relationship. The letter rating ranges from A to F with LOS A representing the best or free flow conditions and LOS F representing very congested conditions.

Pursuant to City requirements, the Intersection Capacity Utilization Methodology (ICU) was used to analyze signalized intersections and the results are shown in terms of a volume-to-capacity ratio with associated LOS rating. Intersection operations for unsignalized intersections were calculated using methodologies outlined in the Highway Capacity Manual (HCM) and the results are represented in terms of average seconds of delay for all approaches at the intersection. The level of service rating criteria and volume-to-capacity and delay relationships are summarized in Table 2 below.

Table 2
Intersection Level of Service Criteria

LOS	Signalized intersections (V/C Ratio)	Unsignalized intersections (Sec. of delay)	Definition
A	< 0.60	≤ 10	Conditions of free unobstructed flow, no delays and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and ≤ 15	Conditions of stable flow, very little delay, a few phases are unable to handle all approaching vehicles.
C	0.71- 0.80	> 15 and ≤ 25	Conditions of stable flow, delays are low to moderate; full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 25 and < 35	Conditions approaching unstable flow, delays are moderate to heavy, significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 35 and < 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, congestion exists for extended duration throughout the peak period.
F	> 1.00	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal

Source: *Highway Capacity Manual, 2010 Edition*

The City Circulation Element identifies the acceptable level of service for City roadways and intersections. Intersections operating at LOS C or better during the peak traffic hours are considered operating at acceptable levels. Brief periods of LOS D (up to a V/C ratio of 0.83) during AM or PM peak hours are generally considered acceptable.

Existing Intersection Operation

Traffic counts at the nine project intersections were collected specifically for the project during April of 2014 under normal traffic conditions. The intersection turning movement counts were collected during the 7-9 AM and 4-6 PM peak periods of a typical weekday. The resultant existing AM/PM peak hour traffic volumes are summarized in Exhibit 2. The actual traffic count data is provided in the Technical Appendix to this report.

A field inventory of the intersection traffic controls, lane geometry and speed information for each study location was conducted by OEG staff. Using this information and the intersection operation methodologies described above, the existing AM and PM peak hour intersection operation was calculated for each location. The results of this analysis are summarized in Table 3 and the LOS worksheets can be found in the Technical Appendix to this report.

As seen in Table 3, all of the study area intersections operate at LOS C or better during both AM and PM peak hours and meet the desired operating standards set by the City.

Table 3
Existing AM and PM Peak Hour Intersection Operation

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.58/LOS A	0.65/LOS B
Santa Rosa Road at			
EB Hwy 101 Ramps	Traffic Signal	0.64/LOS B	0.72/LOS C
WB Hwy 101 Ramps	Traffic Signal	0.52/LOS A	0.59/LOS A
Verdugo Way	Traffic Signal	0.64/LOS B	0.56/LOS A
Adolfo Road	Traffic Signal	0.70/LOS B	0.63/LOS B
Los Pueblos Drive	Traffic Signal	0.70/LOS B	0.67/LOS B
Mission Oaks Blvd at Adolfo Road	Traffic Signal	0.56/LOS A	0.57/LOS A
Camino Ruiz at			
Verdugo Way	2-way STOP	3.4 sec/LOS A	4.7 sec/LOS A
Adolfo Road	2-way STOP	2.9 sec/LOS A	4.0 sec/LOS A

Traffic Signal Warrants

Since the two unsignalized intersections have been identified by the City as candidates for future traffic signal installations, an analysis was conducted to determine if the warrants to install a traffic signal were met based on the existing conditions. The City utilizes the California Manual on Uniform Traffic Control Devices (CA-MUTCD) as a guide to determine if a traffic signal should be installed. The MUTCD has developed an evaluation system based on traffic volumes, pedestrian volumes, intersection safety, and other geometric factors to provide guidance on when to consider signalization of a specific location.

This analysis was conducted for the two unsignalized intersections and the results of this warrant evaluation are summarized in Table 4. As seen in this table, neither intersection meets the warrants for

consideration of the installation of a traffic signal under existing traffic operating conditions. The traffic signal warrant worksheets can be found in the Technical Appendix to this report.

Table 4
Traffic Signal Warrants - Existing Conditions

Intersection	Warrants Met
Camino Ruiz at Adolfo Road	NO
Camino Ruiz at Verdugo Way	NO

Future (Short Term) Conditions – Intersection Operations

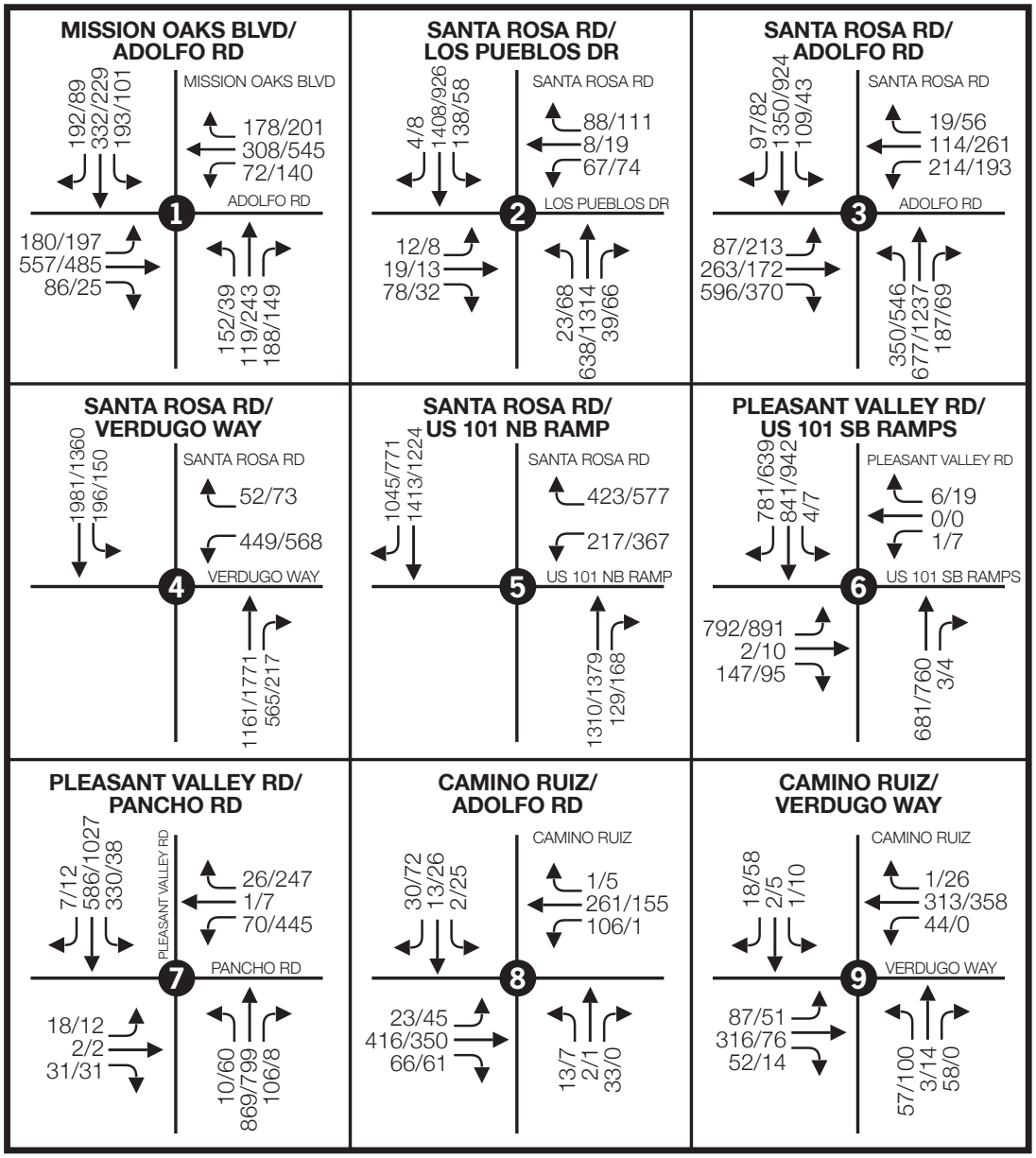
In addition to the proposed project, there are other approved projects that have not been completely built out and the traffic reflected in the existing conditions that were documented in April of 2014. The two projects are the Village at the Park (150 single family homes) and Triliad (344,515 SF combination of manufacturing, warehousing and office) developments. To account for the traffic generated by these developments, the traffic generated by the projects were documented using the CTAM (Camarillo Traffic Analysis Model) trip generation rates. Application of these trip rates to the intensity of the projects will provide an estimate of the potential trips generated by each project. The results of these calculations are summarized in Table 5.

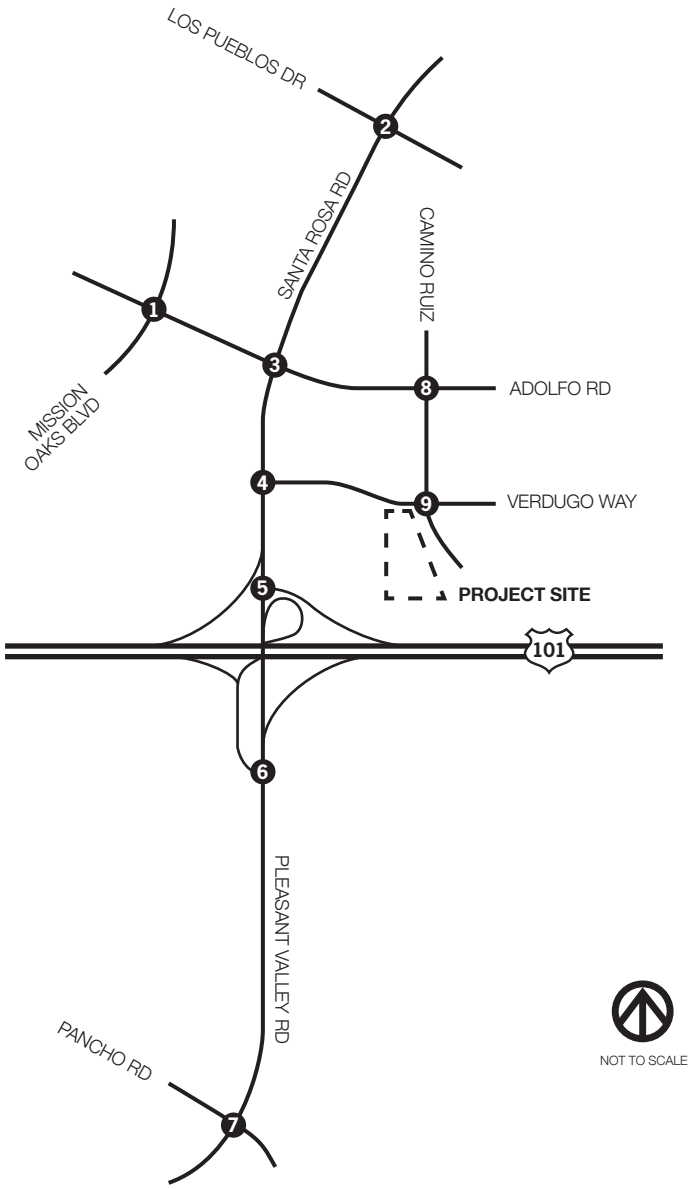
Table 5
Approved Projects Trip Generation

	Size		ADT	AM In	AM Out	PM In	PM Out
Village at the Park							
Residential	150	SFD	1350	21	87	71	39
Triliad							
Lt. Industrial							
(Bldgs 4-10)	344.515	KSF	2299	267	50	69	242

Previous studies were utilized in addition to our general knowledge of the area to determine the portions of the circulation system that will likely be used by vehicles generated by these projects. The assignment of the approved project traffic volumes was superimposed on the existing AM/PM peak hour traffic volumes to develop the short term future baseline traffic conditions. The resultant traffic volumes for the Existing plus Approved Project conditions are presented in Exhibit 3.

Using the traffic volumes depicted in Exhibit 3, the intersection operations were recalculated and the results are summarized in Table 6. As seen in Table 6, all of the study area intersections are forecast to continue to operate at LOS C or better during the AM and PM peak hours. The LOS worksheets for the Existing plus Approved Projects conditions are provided in the Technical Appendix to this report.





Orosz Engineering Group, Inc.

KEY
XX/YY = AM/PM PEAK HOUR VOLUMES
X = INTERSECTION NUMBER

3

EXISTING PLUS APPROVED PROJECTS CONDITIONS
AM / PM PEAK HOUR TRAFFIC VOLUMES
MISSION OAKS RESIDENTIAL

Table 6
Existing Plus Approved Project AM and PM Peak Hour Intersection Operation

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.60/LOS A	0.67/LOS B
Santa Rosa Road at			
EB Hwy 101 Ramps	Traffic Signal	0.67/LOS B	0.73/LOS C
WB Hwy 101 Ramps	Traffic Signal	0.53/LOS A	0.62/LOS B
Verdugo Way	Traffic Signal	0.65/LOS B	0.61/LOS B
Adolfo Road	Traffic Signal	0.74/LOS C	0.65/LOS B
Los Pueblos Drive	Traffic Signal	0.71/LOS C	0.68/LOS B
Mission Oaks Blvd at Adolfo Road	Traffic Signal	0.56/LOS A	0.58/LOS A
Camino Ruiz at			
Verdugo Way	2-way STOP	3.2 sec/LOS A	6.7 sec/LOS A
Adolfo Road	2-way STOP	2.7 sec/LOS A	2.8 sec/LOS A

Future (Short Term) Conditions – Traffic Signal Warrants

Using the existing plus approved projects traffic volumes and the CA-MUTCD warrants, the need to install traffic signals at the two unsignalized intersections was evaluated. The results of this evaluation are summarized in Table 7. Based on the warrant analysis, the installation of traffic signals at the two unsignalized study area intersections is not recommended. The traffic signal warrant worksheets are provided in the Technical Appendix.

Table 7
Traffic Signal Warrants - Existing + Approved Conditions

Intersection	Warrants Met
Camino Ruiz at Adolfo Road	NO
Camino Ruiz at Verdugo Way	NO

ENVIRONMENTAL SETTING

Traffic Impact Thresholds

The City of Camarillo has developed criteria to determine when a new project could have a potentially significant traffic or circulation impact. A potentially significant traffic or circulation impact would occur if any of the following situations were to occur:

(a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

(b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;

(c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks;

(d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

(e) Result in inadequate emergency access;

(f) Result in inadequate parking capacity; or

(g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

The City of Camarillo has defined the "substantial" impact in (a) to occur under one of the following conditions:

- The addition of 30 trips per lane during a peak hour critical movement trips for LOS D
- The addition of 20 trips per lane during a peak hour critical movement trips for LOS E
- The addition of 10 trips per lane during peak hour critical movement trips for LOS F

Mitigation measures must provide a level of service equal to or better than baseline conditions (Existing + Approved Projects scenario) when a significant impact occurs.

PROJECT IMPACTS AND MITIGATION MEASURES

Intersection Levels of Service

Threshold: Would the proposed project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).

Impact: The addition of project-generated traffic to all other study-area intersections would not be substantial or significant.

Analysis- Existing Plus Approved Projects Plus Project Conditions

To determine the potential impact on the intersection levels of service, an estimate of the proposed project trips is required. The project land use trip generation rate from the CTAM was applied to the number of housing units proposed to estimate the number of trips that may be generated by the project. The results of these calculations are summarized in Table 8. As seen in this table, the proposed project is expected to generate a total of 1,160 Average Daily Trips (ADT) with 91 AM and 94 PM peak hours trips.

Table 8
Proposed Project Trip Generation

Proposed Project			CTAM Trip rates				
			ADT	AM In	AM Out	PM In	PM Out
Residential Condo	145	du	8	0.12	0.51	0.42	0.23
					Project Trips		
Residential Condo	145	du	1,160	17	74	61	33

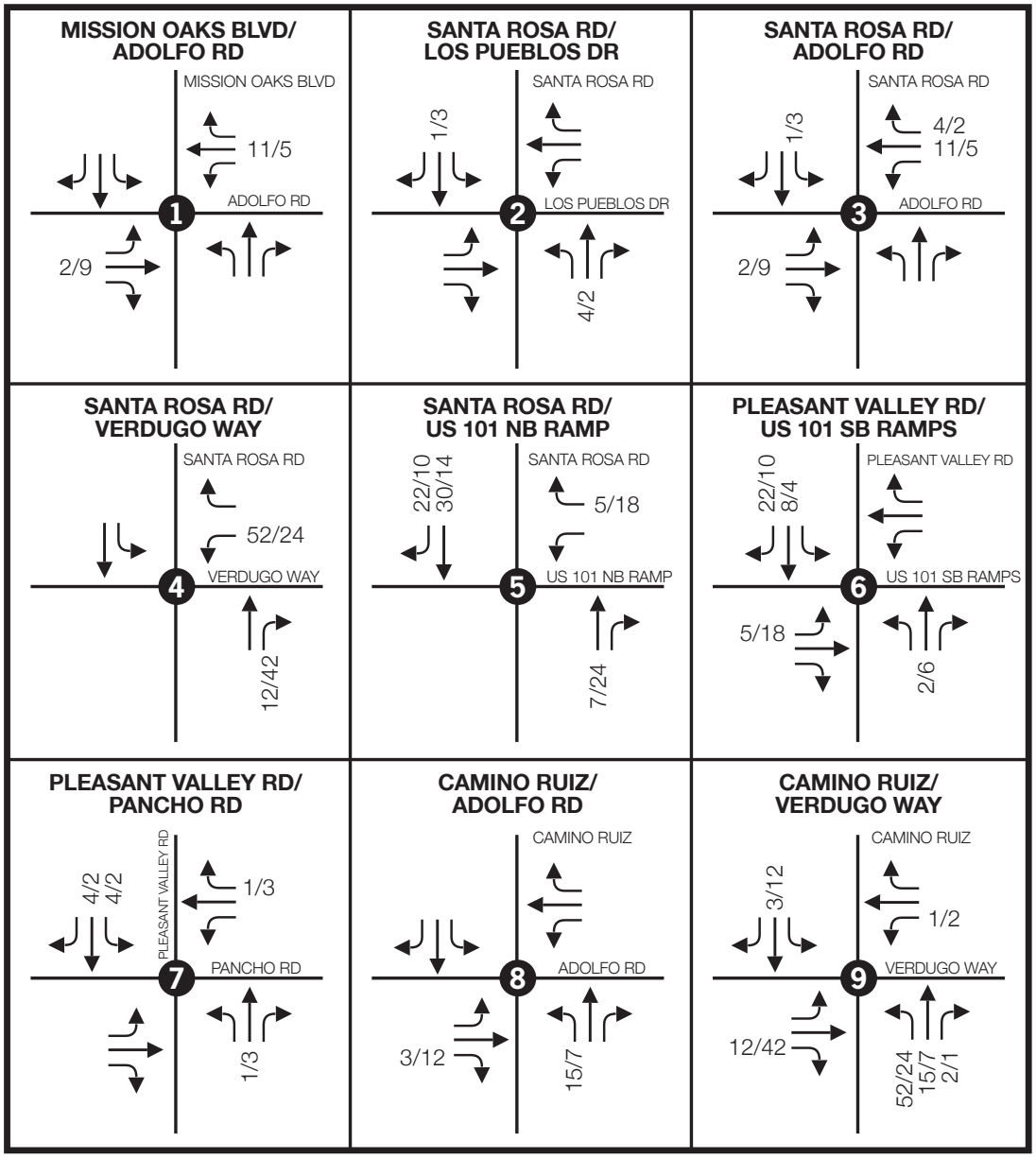
Once the number of project trips was found, the distribution of the project related trips were estimated throughout the study area using data from previous studies and our general knowledge of traffic patterns in the area. The distribution percentages are summarized in Table 9 with the project trips shown in Exhibit 4.

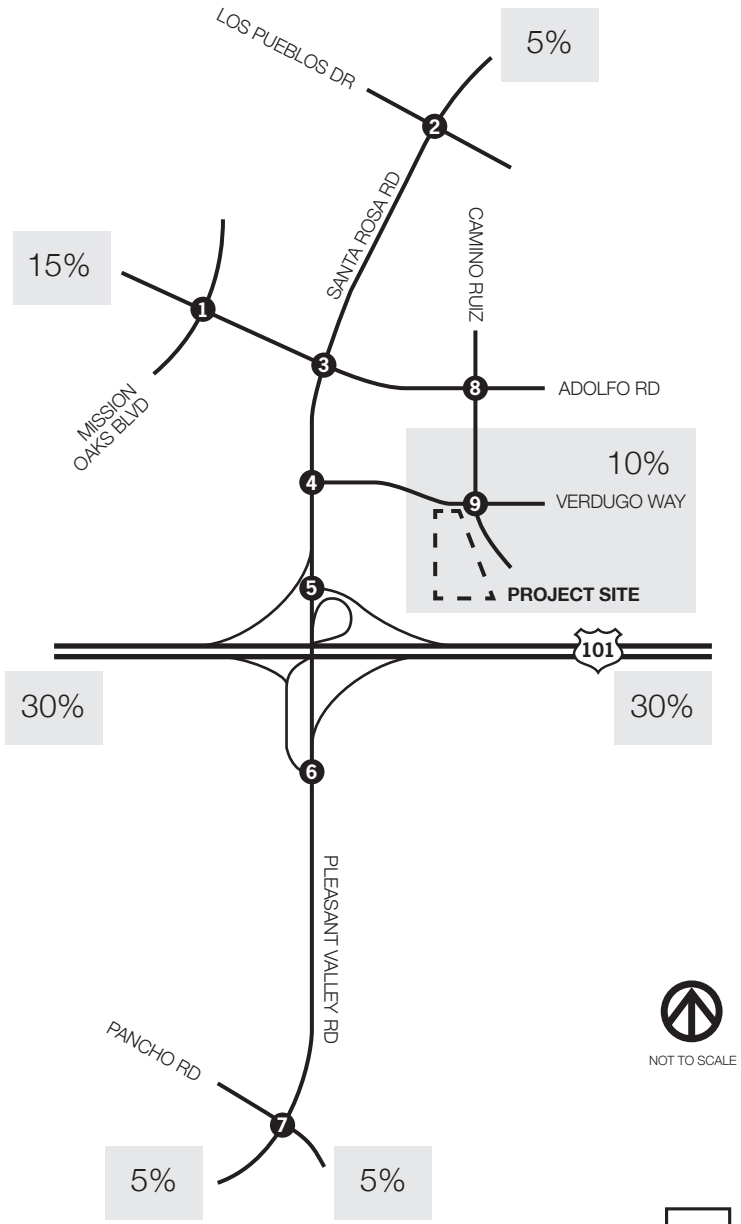
Table 9
Project Trip Distribution Percentages

Roadway	Project Traffic Distribution Percentage
US Highway 101 – North	30%
US Highway 101 – South	30%
Adolfo Road – West	15%
Santa Rosa Road – North	5%
Pleasant Valley Road – South/West	5%
Pancho Road – South/East	5%
Local Trips with Adjacent Commercial/Industrial Complexes	10%

With the distribution and assignment of the project related traffic, the intersection operation was recalculated with the Existing plus Approved Project baseline traffic volumes to determine if the project would result in a potentially significant impact. As seen in Table 10, all of the study area intersections will continue to operate at LOS C or better with the addition of the proposed project traffic volumes. The LOS worksheets for this analysis are provided in the Technical Appendix to this report.

Since the traffic signal warrants were not met prior to the addition of the project traffic, the traffic signal warrants were evaluated again, this time with the addition of project traffic. Based on this evaluation (see summary in Table 11), the traffic signal warrants are met for the Adolfo Road and Camino Ruiz unsignalized intersection with the combination of existing traffic volumes, approved project traffic volumes and the proposed project traffic volumes. Further, the combination of the several traffic signal warrants being nearly met and the potential increases in existing traffic, as the existing building vacancies are reduced, would warrant consideration of the installation of traffic signals at the two study area intersections of Camino Ruiz at Adolfo Road and at Verdugo Road.





Orosz Engineering Group, Inc.

KEY
X% = TRIP DISTRIBUTION
XX/YY = AM/PM PEAK HOUR VOLUMES

4

PROJECT RELATED TRAFFIC
AM / PM PEAK HOUR VOLUMES
MISSION OAKS RESIDENTIAL

Table 10
Existing Plus Approved Projects Plus Project
AM and PM Peak Hour Intersection Operation

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.61/LOS B	0.67/LOS B
Santa Rosa Road at			
EB Hwy 101 Ramps	Traffic Signal	0.69/LOS B	0.76/LOS C
WB Hwy 101 Ramps	Traffic Signal	0.55/LOS A	0.63/LOS B
Verdugo Way	Traffic Signal	0.69/LOS B	0.64/LOS B
Adolfo Road	Traffic Signal	0.75/LOS C	0.68/LOS B
Los Pueblos Drive	Traffic Signal	0.71/LOS C	0.69/LOS B
Mission Oaks Blvd at Adolfo Road	Traffic Signal	0.57/LOS A	0.60/LOS A
Camino Ruiz at			
Verdugo Way	2-way STOP	5.5 sec/LOS A	9.5 sec/LOS A
Adolfo Road	2-way STOP	3.1 sec/LOS A	2.9 sec/LOS A

Table 11
Traffic Signal Warrants - Existing + Approved + Project Conditions

Intersection	Warrants Met
Camino Ruiz at Adolfo Road	YES
Camino Ruiz at Verdugo Way	YES[1]

Analysis Cumulative Impacts – Short Term

The analysis of short term cumulative traffic impacts considers the effects of the proposed project along with the other approved projects in the vicinity of the project site. The addition of project and approved project traffic trips would not significantly change any of the existing intersection operating levels of service. All intersections would continue to operate at LOS C or better during the AM and PM peak hours. Therefore, the project does not result in any short term cumulative impacts.

Implementation of the proposed project would contribute to the need for traffic signals at the intersections of Camino Ruiz at Adolfo Road and Verdugo Way based on the existing plus approved projects plus project traffic volume scenario. The addition of approved project or the proposed project traffic would not create the need to signalize the two intersections. The combination of existing, approved projects and the proposed project traffic would result in traffic signal warrants being met. The proposed project's fair share contribution to the need for signalization is 17% for the Verdugo Way/Camino Ruiz intersection and 5% Adolfo Road/Camino Ruiz intersections based on the contribution of project traffic volumes divided by the total existing plus approved plus proposed project traffic volumes. This would be a less-than-significant impact when the project provides its fair share contribution to the construction of the traffic signals.

[1] With the infill traffic volumes associated with the currently vacant commercial properties in the vicinity, the traffic signal warrants would be met for both intersections.

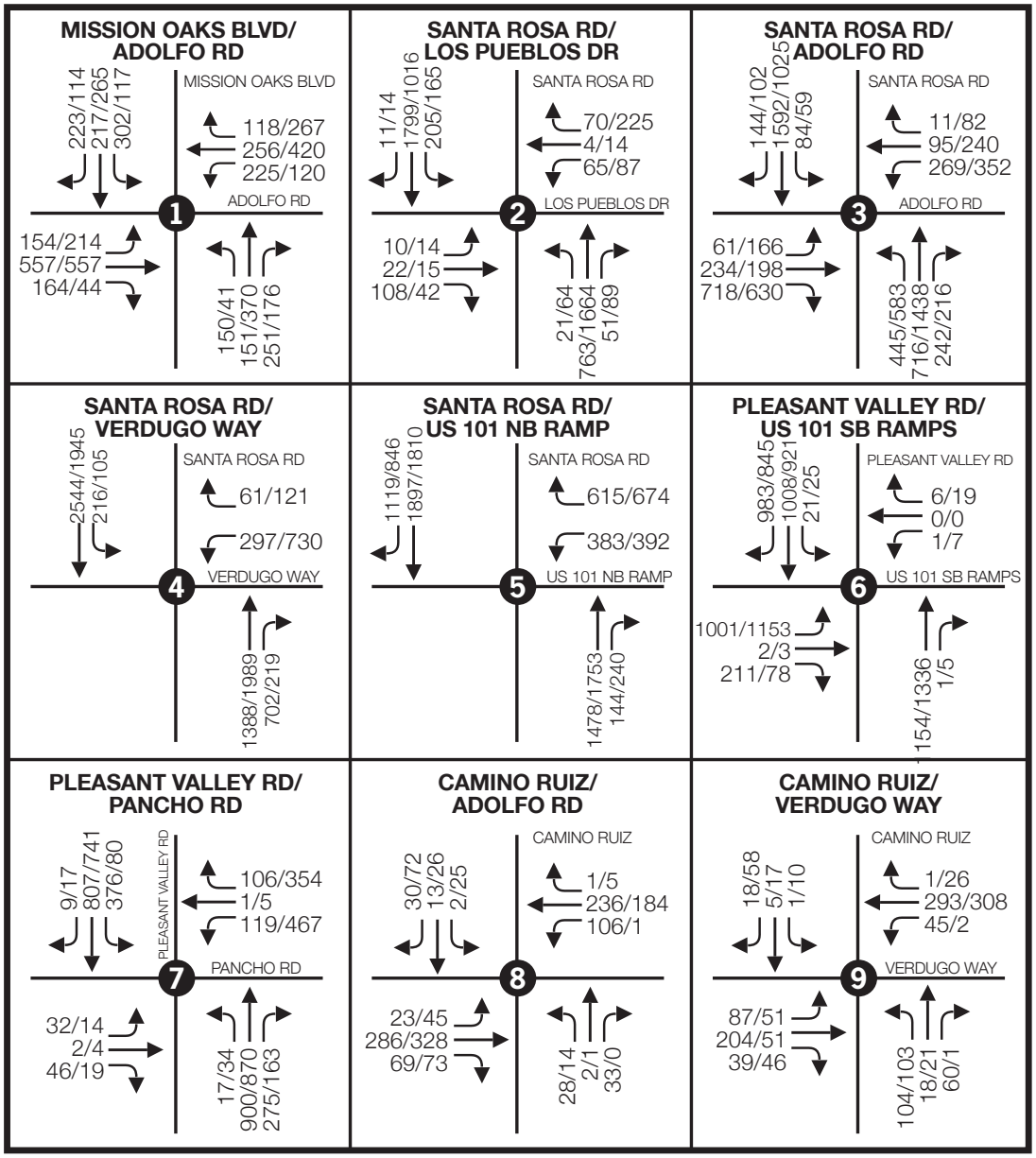
Analysis- General Plan Plus Project Conditions

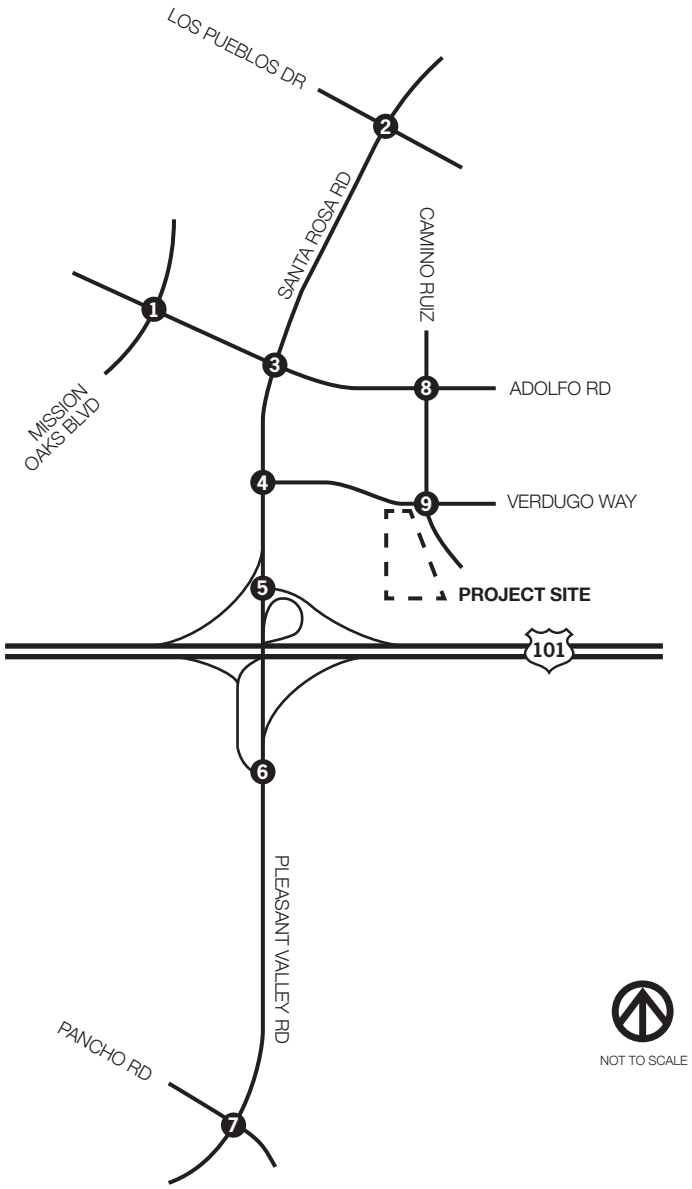
The analysis of General Plan Buildout traffic impacts considers the effects of the proposed project along with other uses assumed in the zoning designations of the General Plan. The analysis of the project's impact on the General Plan intersection operating conditions was conducted. The base General Plan 2030 AM and PM peak hour traffic volumes were provided by the City and are presented in Exhibit 5.

Analysis of General Plan build out is provided in conjunction with the City's circulation element and traffic mitigation fee program. The circulation element analysis identifies roadway and intersection improvements required to accommodate build out of the City's General Plan, with improvements funded by the City's traffic mitigation fee program. The planned improvements are designed to provide LOS C on the City's street system, with LOS D allowed for short periods of time. The proposed project would contribute a proportional share towards the cost of future improvements via the required payment to the City's traffic mitigation fee program. This would ensure that the contribution of the project to cumulative traffic impacts throughout Camarillo would not be considerable.

By 2030, the City's Circulation Element notes that Santa Rosa Road will be constructed as a six lane Primary Arterial south of Adolfo Road with four lanes north of Adolfo Road. When the 2030 General Plan intersection operating conditions were calculated, the forecast improvements along Santa Rosa Road were assumed to be constructed. With the 2030 General Plan traffic volumes and the planned circulation system improvements, the baseline intersection operations of the study area intersections were conducted. For the two study area intersections along Camino Ruiz, traffic signals were assumed to be installed by 2030. As seen in Table 12, 8 of the 9 study area intersections continue to operate at LOS C or better during the AM and PM peak hours. At the intersection of Santa Rosa Road and Los Pueblos Drive, the intersection would continue to operate at 0.85 LOS D as previously identified in the General Plan 2030 Traffic Model analysis. The LOS worksheets for the General Plan analysis are provided in the Technical Appendix.

With the development of the project, a General Plan Amendment (GPA 2013-03) is proposed. To determine the project's potential impact on the General Plan, the land use assumptions contained in the General Plan were compared to the project. The land uses identified in 2007 were compared with the land use assumptions for 2030 to determine the uses assumed for the project site. The 2030 traffic volumes were previously developed through the use of a traffic model. Within the traffic model, there are various traffic analysis zones or TAZ's. The project is located within TAZ 5177. To determine what land uses were assumed for the project site, it was assumed that the uses identified in 2007 represented all land uses within the TAZ other than the project site. Once the difference between the trip generation assumptions for 2007 and 2030 were found, that total was compared with the proposed project trip generation. The results of this comparison are found in Table 13. As seen in Table 13, the proposed project would result in an overall net decrease in the traffic assumed for the project site in the General Plan traffic model.





Orosz Engineering Group, Inc.

KEY
XX/YY = AM/PM PEAK HOUR VOLUMES

5

2030 GENERAL PLAN
AM / PM PEAK HOUR VOLUMES
MISSION OAKS RESIDENTIAL

Table 12
2030 General Plan AM and PM Peak Hour Intersection Operation

Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.60/LOS A	0.62/LOS B
Santa Rosa Road at			
EB Hwy 101 Ramps	Traffic Signal	0.78/LOS C	0.80/LOS C
WB Hwy 101 Ramps	Traffic Signal	0.74/LOS C	0.74/LOS C
Verdugo Way	Traffic Signal	0.72/LOS C	0.74/LOS C
Adolfo Road	Traffic Signal	0.80/LOS C	0.68/LOS B
Los Pueblos Drive	Traffic Signal	**0.85/LOS D**	**0.85/LOS D**
Mission Oaks Blvd at Adolfo Road	Traffic Signal	0.68/LOS B	0.61/LOS B
Camino Ruiz at			
Verdugo Way	Traffic Signal	0.55/LOS A	0.54/LOS A
Adolfo Road	Traffic Signal	0.43/LOS A	0.39/LOS A

With the change in the 2030 General Plan traffic volume forecast known from Table 13, the project related traffic was distributed and assigned to the study area road system and the intersection operations were recalculated. The resulting intersection operations and levels of service for the 2030 General Plan plus Project conditions are summarized in Table 14. As seen in this table, all of the study area intersections will continue to operate at LOS C or better with the proposed project.

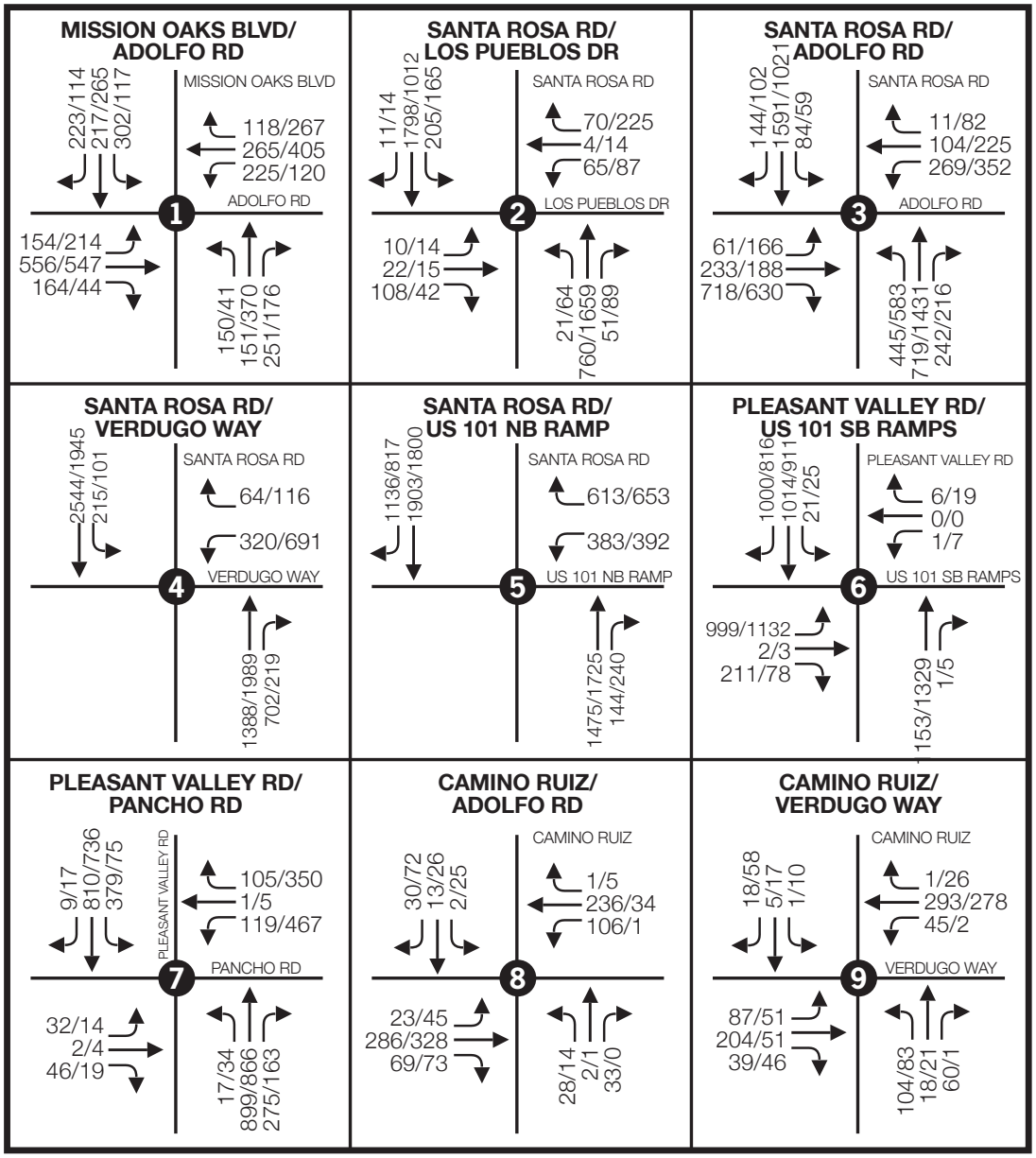
Table 14
2030 General Plan Amendment 2013-03
AM and PM Peak Hour Intersection Operation

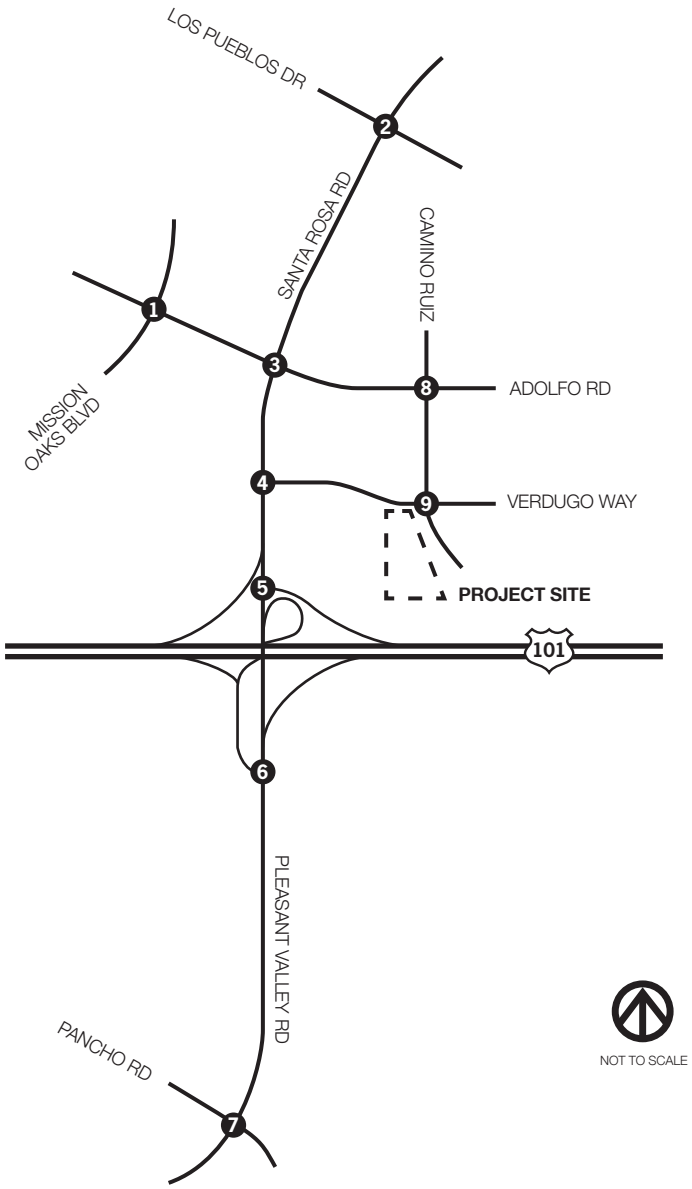
Location	Traffic Control	AM Peak Hour	PM Peak Hour
Pleasant Valley Road at Pancho Road	Traffic Signal	0.60/LOS A	0.62/LOS B
Santa Rosa Road at			
EB Hwy 101 Ramps	Traffic Signal	0.78/LOS C	0.79/LOS C
WB Hwy 101 Ramps	Traffic Signal	0.74/LOS C	0.74/LOS C
Verdugo Way	Traffic Signal	0.73/LOS C	0.73/LOS C
Adolfo Road	Traffic Signal	0.80/LOS C	0.72/LOS C
Los Pueblos Drive	Traffic Signal	**0.85/LOS D**	**0.85/LOS D**
Mission Oaks Blvd at Adolfo Road	Traffic Signal	0.68/LOS B	0.61/LOS B
Camino Ruiz at			
Verdugo Way	Traffic Signal	0.62/LOS B	0.59/LOS A
Adolfo Road	Traffic Signal	0.47/LOS A	0.41/LOS A

Table 13
General Plan Land Use Comparison to GPA 2013-03 for TAZ 5177[2]

TAZ 5177	AM Peak Hour			PM Peak Hour			
2007 Land Uses	In	Out	Total	In	Out	Total	ADT
Community Commercial	25	17	42	132	132	264	3500
Sit-Down Restaurant	21	14	35	145	62	207	3700
Fast-food Restaurant	144	96	240	176	176	352	6300
Hotel/Motel	4	5	9	27	18	45	728
Light Industrial	0	0	0	0	0	0	0
Hospital	1	1	2	1	1	2	25
Total Trips	195	133	328	481	389	870	14253
	AM Peak Hour			PM Peak Hour			
2030 Land Uses	In	Out	Total	In	Out	Total	ADT
Community Commercial	50	34	84	263	263	526	7000
Sit-Down Restaurant	21	14	35	145	62	207	3700
Fast-food Restaurant	144	96	240	176	176	352	6300
Hotel/Motel	4	5	9	27	18	45	728
Light Industrial	0	0	0	0	0	0	0
Hospital	1	1	2	1	1	2	25
Total Trips	220	150	370	612	520	1132	17753
	AM Peak Hour			PM Peak Hour			
Difference for Project Site	In	Out	Total	In	Out	Total	ADT
Community Commercial	-25	-17	-42	-131	-131	-262	-3500
Sit-Down Restaurant	0	0	0	0	0	0	0
Fast-food Restaurant	0	0	0	0	0	0	0
Hotel/Motel	0	0	0	0	0	0	0
Light Industrial	0	0	0	0	0	0	0
Hospital	0	0	0	0	0	0	0
Total Trips	-25	-17	-42	-131	-131	-262	-3500
Project Trips Added	17	74	91	61	33	94	1160
Net Change Due to Project	**-8**	**57**	**49**	**-70**	**-98**	**-168**	**-2340**

[2] TAZ 5177 – Traffic Analysis Zone (TAZ) 5177 is the area that includes the project site within the General Plan traffic model.





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KEY
XX/YY = AM/PM PEAK HOUR VOLUMES

6

2030 GENERAL PLAN + GPA 2013-03
AM / PM PEAK HOUR VOLUMES
MISSION OAKS RESIDENTIAL

Analysis- Congestion Management Program Consistency

Within Ventura County's Congestion Management Program (CMP), Santa Rosa Road and Pleasant Valley Road are listed as Program roadways that are monitored for significant congestion. In the most recent 2009 Program update, all of the intersections along the CMP network within the City of Camarillo operate at LOS C or better. Further, with the current 2014 traffic count data, all of the intersections continue to operate at LOS C or better, thus are consistent with the CMP. No significant impacts were found.

Air Traffic Patterns

Threshold: Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Impact: Implementation of the proposed project would not result in a change in air traffic patterns for Camarillo Airport. Therefore, the project would have no airport traffic impact.

Analysis

The proposed project does not include any aviation-related uses and would not generate any new air traffic patterns. As such, the proposed project would not create any change in existing air traffic patterns for Camarillo Airport. Therefore, the project would have no airport traffic impact.

Project Site Access

Threshold: Would the proposed project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Impact: Implementation of the proposed project would not result in inadequate site access. This would be a less-than-significant impact.

Analysis

Access to the project site is proposed via two roadway connections to Camino Ruiz and one roadway connection to the hotel/commercial center to the west of the project site. The internal roadways and driveways would be designed in accordance with all City regulations, including those pertaining to emergency access. Consequently, impacts associated with site access would be less than significant.

Project Site Emergency Access

Threshold: Would the proposed project result in inadequate emergency access.

Impact: Implementation of the proposed project would not result in inadequate emergency access. This would be a less-than-significant impact.

Analysis

The internal roadways and driveways would be designed in accordance with all City regulations, including those pertaining to emergency access. The project improves emergency access by providing an alternative access through the project site to Camino Ruiz from the adjacent hotel/commercial center. Consequently, impacts associated with emergency access would be less than significant.

Project Site Parking

Threshold: Would the proposed project result in inadequate parking capacity.

Impact: Implementation of the proposed project would not result in inadequate parking capacity. This would be a less-than-significant impact.

Analysis
The project proposes to provide 348 parking spaces with 290 garage spaces and 58 open spaces. Based on the City's parking code, a total of 348 spaces are required. As the proposed project meets the number of parking spaces than required, the impacts associated with project site parking would be less than significant. The project also proposes 29 RV parking spaces.

Alternative Transportation

Threshold: Would the proposed project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

Impact: Implementation of the proposed project would not conflict with adopted policies, plans, or programs supporting alternative transportation. This would be a less-than-significant impact.

Analysis
The project is not expected to conflict with adopted policies, plans, or programs supporting alternative transportation. Implementation of the project involves the development of residential condominiums and due to its location; the project does provide opportunities to walk or bike to work (alternative transportation) in the nearby industrial areas. Therefore, a less than significant impact would occur.

UNAVOIDABLE SIGNIFICANT IMPACTS
The proposed project would not create any unavoidable significant transportation and circulation impacts.

MITIGATION MEASURES
To mitigate the project's contribution to the cumulative need to install the traffic signals at the Camino Ruiz intersections at Adolfo Road and at Verdugo Road, the project should pay a Fair Share traffic signal costs for both intersections. Based on the proportion of the project's traffic volume contribution to the overall traffic volume total for each intersection, the project would be required to pay 17% for the Verdugo Way/Camino Ruiz intersection and 5% Adolfo Road/Camino Ruiz intersection.

Traffic Impact Analysis
Mission Oaks Residential Project
GPA 2013-03
City of Camarillo

Technical Appendix

Prepared for:

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June 2014

Appendix A

CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : AdolphoCaminoRuiz
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Camino Ruiz Southbound			Adolfo Rd Westbound			Camino Ruiz Northbound			Adolfo Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	1	4	19	33	0	3	0	9	2	30	10	111
07:15 AM	0	3	6	26	34	0	4	0	11	7	38	11	140
07:30 AM	0	3	9	28	66	0	3	1	12	9	64	13	208
07:45 AM	1	5	10	25	64	0	1	0	6	9	72	21	214
Total	1	12	29	98	197	0	11	1	38	27	204	55	673
08:00 AM	1	2	6	28	60	0	4	0	8	4	85	19	217
08:15 AM	0	3	5	25	46	1	5	1	7	1	65	13	172
08:30 AM	0	3	4	24	35	0	5	0	9	6	49	8	143
08:45 AM	1	3	7	22	47	1	4	0	12	3	36	10	146
Total	2	11	22	99	188	2	18	1	36	14	235	50	678
04:00 PM	0	1	2	11	42	0	10	1	17	13	72	9	178
04:15 PM	0	0	3	13	59	1	10	4	14	9	77	8	198
04:30 PM	0	1	2	10	91	1	7	1	21	22	52	6	214
04:45 PM	1	0	6	9	66	0	14	1	9	23	49	8	186
Total	1	2	13	43	258	2	41	7	61	67	250	31	776
05:00 PM	0	0	8	10	66	0	20	0	10	17	49	7	187
05:15 PM	0	1	2	15	70	0	11	1	18	25	54	6	203
05:30 PM	0	0	4	9	45	0	21	1	11	22	37	9	159
05:45 PM	0	1	5	9	53	1	7	0	17	31	41	5	170
Total	0	2	19	43	234	1	59	2	56	95	181	27	719
Grand Total	4	27	83	283	877	5	129	11	191	203	870	163	2846
Apprch %	3.5	23.7	72.8	24.3	75.3	0.4	39	3.3	57.7	16.4	70.4	13.2	
Total %	0.1	0.9	2.9	9.9	30.8	0.2	4.5	0.4	6.7	7.1	30.6	5.7	

CITY TRAFFIC COUNTERS

626.991.7522

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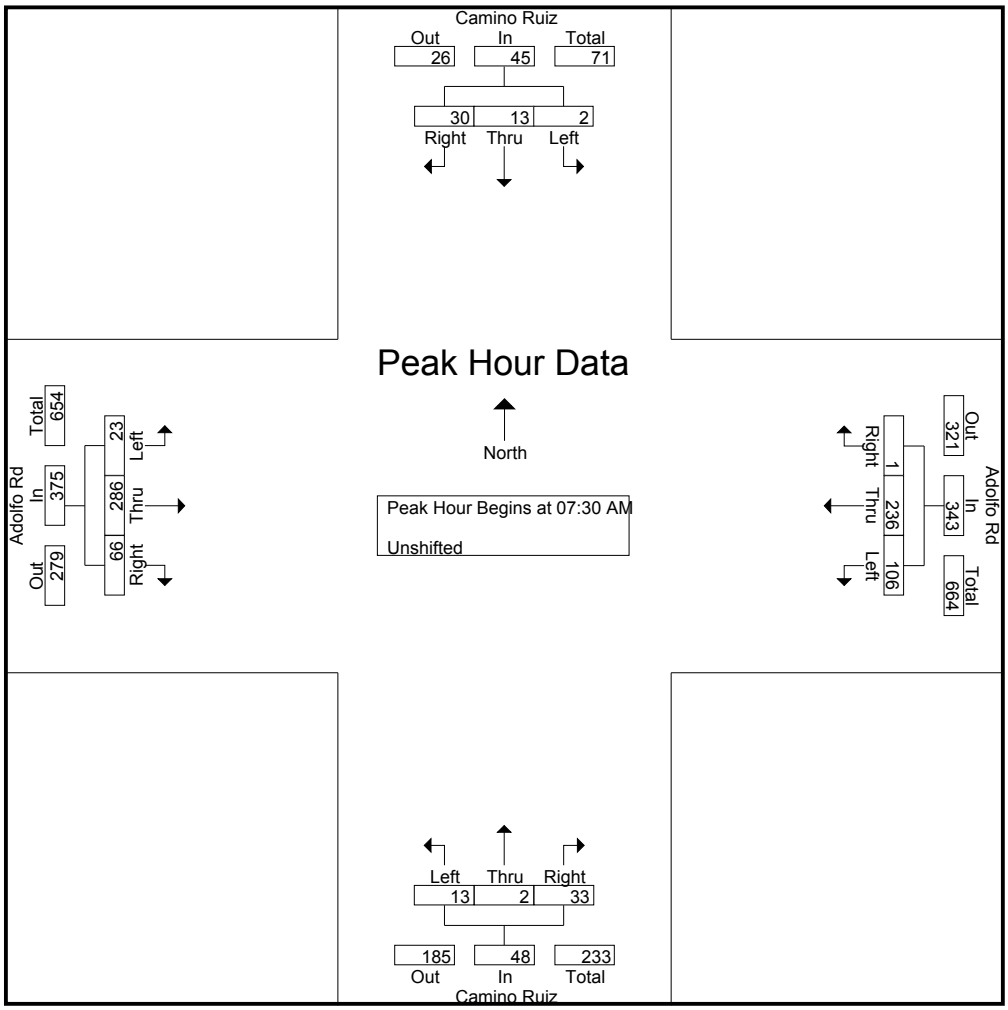
File Name : AdolphoCaminoRuiz
Site Code : 00000000
Start Date : 4/10/2014
Page No : 2

	Camino Ruiz Southbound				Adolfo Rd Westbound				Camino Ruiz Northbound				Adolfo Rd 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 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	3	9	12	**28**	**66**	0	**94**	3	**1**	**12**	**16**	**9**	64	13	86	208
07:45 AM	**1**	**5**	**10**	**16**	25	64	0	89	1	0	6	7	9	72	**21**	102	214
08:00 AM	1	2	6	9	28	60	0	88	4	0	8	12	4	**85**	19	**108**	**217**
08:15 AM	0	3	5	8	25	46	**1**	72	**5**	1	7	13	1	65	13	79	172
Total Volume	2	13	30	45	106	236	1	343	13	2	33	48	23	286	66	375	811
% App. Total	4.4	28.9	66.7		30.9	68.8	0.3		27.1	4.2	68.8		6.1	76.3	17.6		
PHF	.500	.650	.750	.703	.946	.894	.250	.912	.650	.500	.688	.750	.639	.841	.786	.868	.934



CITY TRAFFIC COUNTERS

626.991.7522

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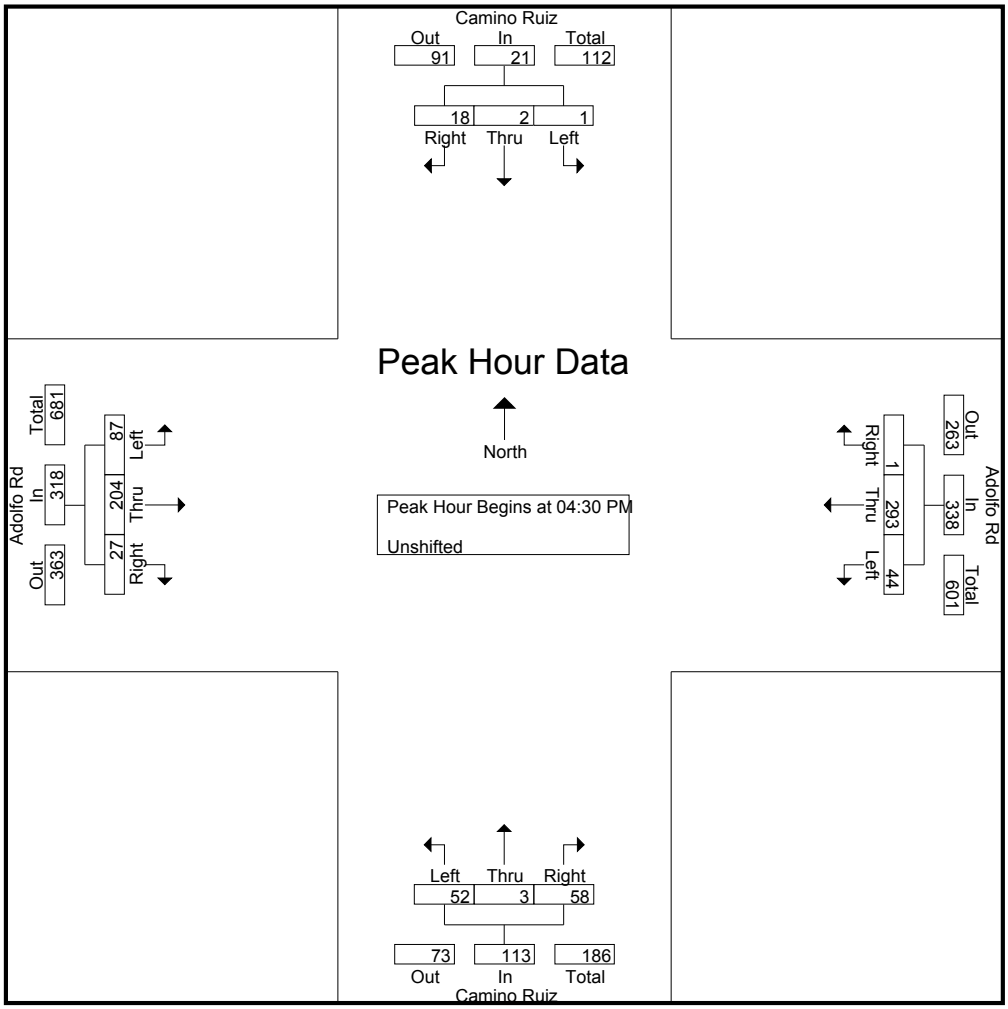
File Name : AdolphoCaminoRuiz
Site Code : 00000000
Start Date : 4/10/2014
Page No : 3

	Camino Ruiz Southbound				Adolfo Rd Westbound				Camino Ruiz Northbound				Adolfo Rd 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 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	**1**	2	3	10	**91**	**1**	**102**	7	**1**	**21**	29	22	52	6	80	**214**
04:45 PM	**1**	0	6	7	9	66	0	75	14	1	9	24	23	49	**8**	80	186
05:00 PM	0	0	**8**	**8**	10	66	0	76	**20**	0	10	**30**	17	49	7	73	187
05:15 PM	0	1	2	3	**15**	70	0	85	11	1	18	30	**25**	**54**	6	**85**	203
Total Volume	1	2	18	21	44	293	1	338	52	3	58	113	87	204	27	318	790
% App. Total	4.8	9.5	85.7		13	86.7	0.3		46	2.7	51.3		27.4	64.2	8.5		
PHF	.250	.500	.563	.656	.733	.805	.250	.828	.650	.750	.690	.942	.870	.944	.844	.935	.923



CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : AdolphoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Camino Ruiz Southbound		Adolfo Rd Westbound		Camino Ruiz Northbound		Adolfo Rd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	1	0	0	1	1	0	0	3
07:15 AM	0	0	0	0	1	0	0	0	1
07:30 AM	0	3	0	1	1	0	0	1	6
07:45 AM	0	1	0	0	0	2	0	0	3
Total	0	5	0	1	3	3	0	1	13
08:00 AM	0	1	0	0	0	1	0	0	2
08:15 AM	0	0	0	0	0	2	0	0	2
08:30 AM	0	0	0	0	1	2	0	0	3
08:45 AM	0	2	0	0	0	0	0	0	2
Total	0	3	0	0	1	5	0	0	9
04:00 PM	1	2	0	0	1	1	1	1	7
04:15 PM	0	6	0	0	0	1	0	1	8
04:30 PM	1	1	0	0	0	4	0	1	7
04:45 PM	0	0	0	1	0	0	0	0	1
Total	2	9	0	1	1	6	1	3	23
05:00 PM	0	1	0	0	0	2	0	1	4
05:15 PM	0	0	0	0	0	0	0	1	1
05:30 PM	0	2	0	0	0	0	0	1	3
05:45 PM	1	1	0	0	1	0	1	1	5
Total	1	4	0	0	1	2	1	4	13
Grand Total	3	21	0	2	6	16	2	8	58
Apprch %	12.5	87.5	0	100	27.3	72.7	20	80	
Total %	5.2	36.2	0	3.4	10.3	27.6	3.4	13.8	

CITY TRAFFIC COUNTERS

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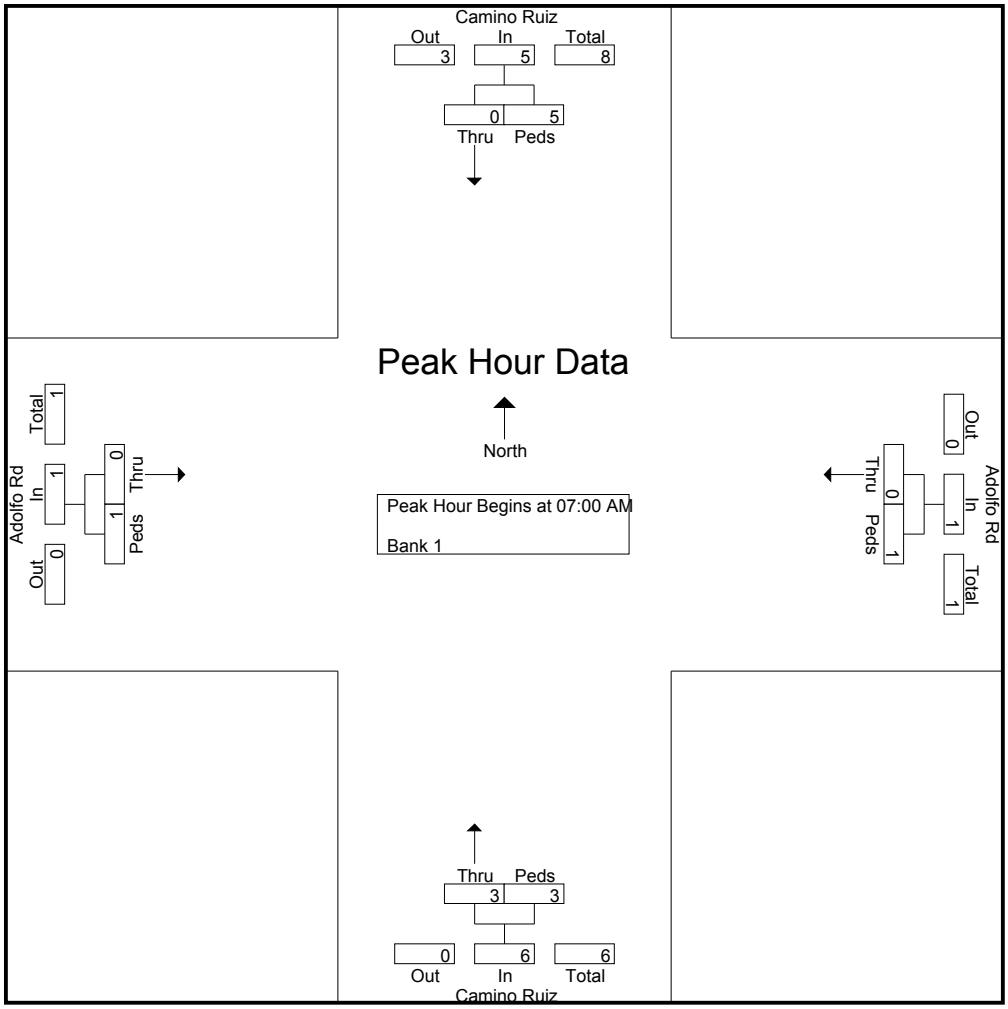
File Name : AdolphoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 2

	Camino Ruiz Southbound			Adolfo Rd Westbound			Camino Ruiz Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	1	1	0	0	0	**1**	1	**2**	0	0	0	3
07:15 AM	0	0	0	0	0	0	1	0	1	0	0	0	1
07:30 AM	0	**3**	**3**	0	**1**	**1**	1	0	1	0	**1**	**1**	**6**
07:45 AM	0	1	1	0	0	0	0	**2**	2	0	0	0	3
Total Volume	0	5	5	0	1	1	3	3	6	0	1	1	13
% App. Total	0	100		0	100		50	50		0	100		
PHF	.000	.417	.417	.000	.250	.250	.750	.375	.750	.000	.250	.250	.542



CITY TRAFFIC COUNTERS

626.991.7522

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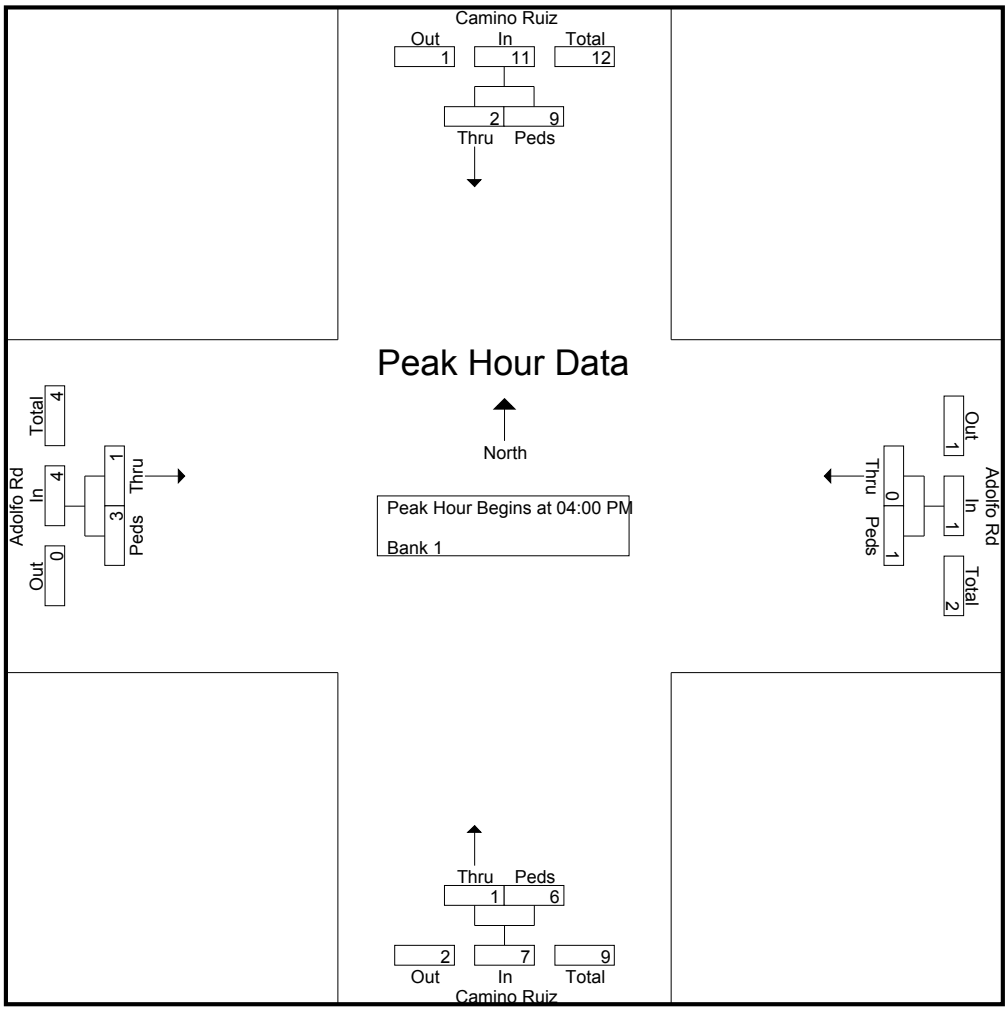
File Name : AdolphoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 3

	Camino Ruiz Southbound			Adolfo Rd Westbound			Camino Ruiz Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	**1**	2	3	0	0	0	**1**	1	2	**1**	**1**	**2**	7
04:15 PM	0	**6**	**6**	0	0	0	0	1	1	0	1	1	**8**
04:30 PM	1	1	2	0	0	0	0	**4**	**4**	0	1	1	7
04:45 PM	0	0	0	0	**1**	**1**	0	0	0	0	0	0	1
Total Volume	2	9	11	0	1	1	1	6	7	1	3	4	23
% App. Total	18.2	81.8		0	100		14.3	85.7		25	75		
PHF	.500	.375	.458	.000	.250	.250	.250	.375	.438	.250	.750	.500	.719



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : MOaksAdolfo
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Mission Oaks Blvd Southbound			Adolfo Rd Westbound			Mission Oaks Blvd Northbound			Adolfo Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	29	38	3	28	42	6	15	14	22	10	88	19	314
07:15 AM	39	48	13	36	52	6	18	13	43	19	109	28	424
07:30 AM	28	89	38	74	73	11	57	30	49	27	131	46	653
07:45 AM	45	75	52	52	81	26	73	59	74	76	144	29	786
Total	141	250	106	190	248	49	163	116	188	132	472	122	2177
08:00 AM	56	85	61	22	77	14	17	16	40	34	124	7	553
08:15 AM	64	83	41	30	62	21	5	14	25	23	105	4	477
08:30 AM	49	55	18	34	64	15	3	14	17	15	77	3	364
08:45 AM	45	64	14	31	57	12	9	13	18	18	79	2	362
Total	214	287	134	117	260	62	34	57	100	90	385	16	1756
04:00 PM	23	44	15	37	101	55	5	39	44	49	99	3	514
04:15 PM	34	53	22	35	98	55	6	36	26	32	95	3	495
04:30 PM	25	44	26	34	106	45	4	46	34	32	109	9	514
04:45 PM	30	67	27	39	120	34	15	61	33	53	109	12	600
Total	112	208	90	145	425	189	30	182	137	166	412	27	2123
05:00 PM	22	42	18	30	121	56	9	58	38	56	142	4	596
05:15 PM	23	64	24	39	136	58	9	77	39	36	117	1	623
05:30 PM	26	56	30	32	120	53	6	47	39	52	103	8	572
05:45 PM	29	43	23	30	97	48	5	39	31	49	105	1	500
Total	100	205	95	131	474	215	29	221	147	193	467	14	2291
Grand Total	567	950	425	583	1407	515	256	576	572	581	1736	179	8347
Apprch %	29.2	48.9	21.9	23.3	56.2	20.6	18.2	41	40.7	23.3	69.6	7.2	
Total %	6.8	11.4	5.1	7	16.9	6.2	3.1	6.9	6.9	7	20.8	2.1	

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File Name : MOaksAdolfo
Site Code : 00000000
Start Date : 4/10/2014
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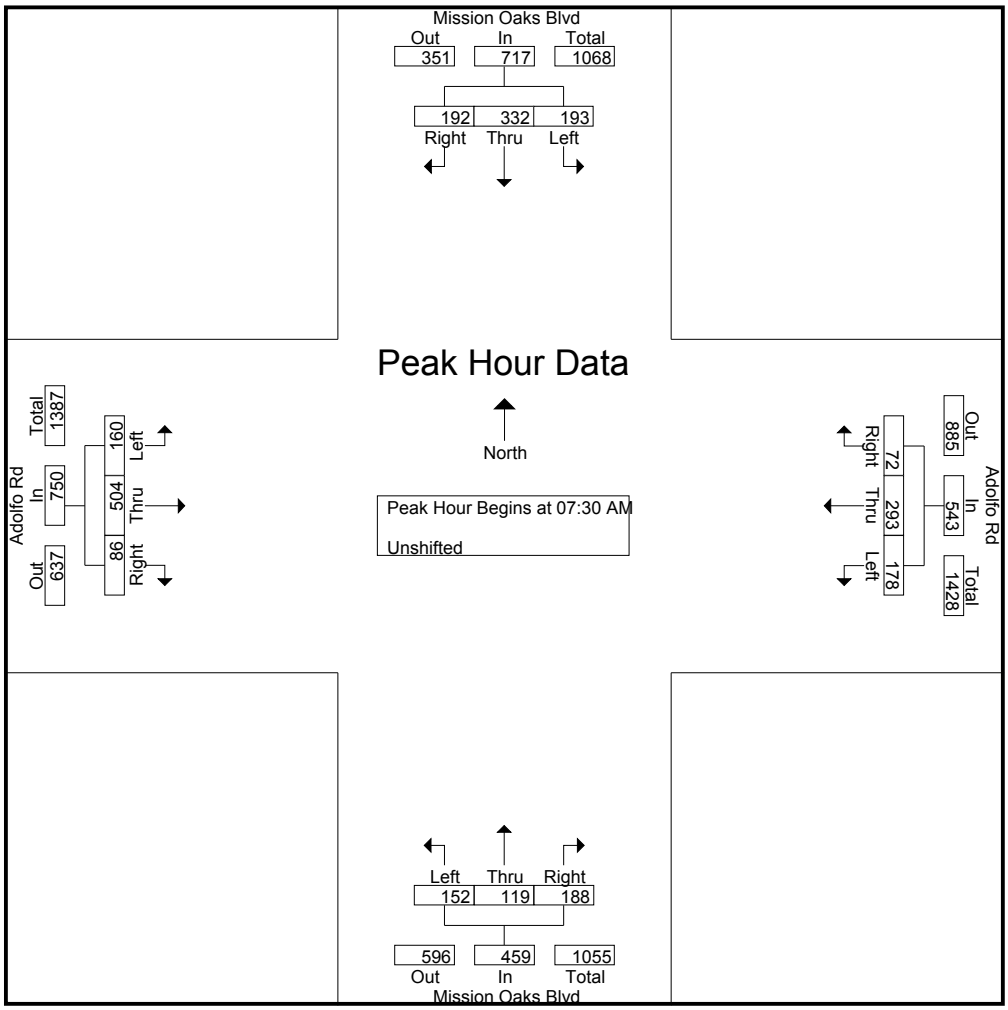
	Mission Oaks Blvd Southbound				Adolfo Rd Westbound				Mission Oaks Blvd Northbound				Adolfo Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	28	**89**	38	155	**74**	73	11	158	57	30	49	136	27	131	**46**	204	653
07:45 AM	45	75	52	172	52	**81**	**26**	**159**	**73**	**59**	**74**	**206**	**76**	**144**	29	**249**	**786**
08:00 AM	56	85	**61**	**202**	22	77	14	113	17	16	40	73	34	124	7	165	553
08:15 AM	**64**	83	41	188	30	62	21	113	5	14	25	44	23	105	4	132	477
Total Volume	193	332	192	717	178	293	72	543	152	119	188	459	160	504	86	750	2469
% App. Total	26.9	46.3	26.8		32.8	54	13.3		33.1	25.9	41		21.3	67.2	11.5		
PHF	.754	.933	.787	.887	.601	.904	.692	.854	.521	.504	.635	.557	.526	.875	.467	.753	.785



CITY TRAFFIC COUNTERS

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File Name : MOaksAdolfo
Site Code : 00000000
Start Date : 4/10/2014
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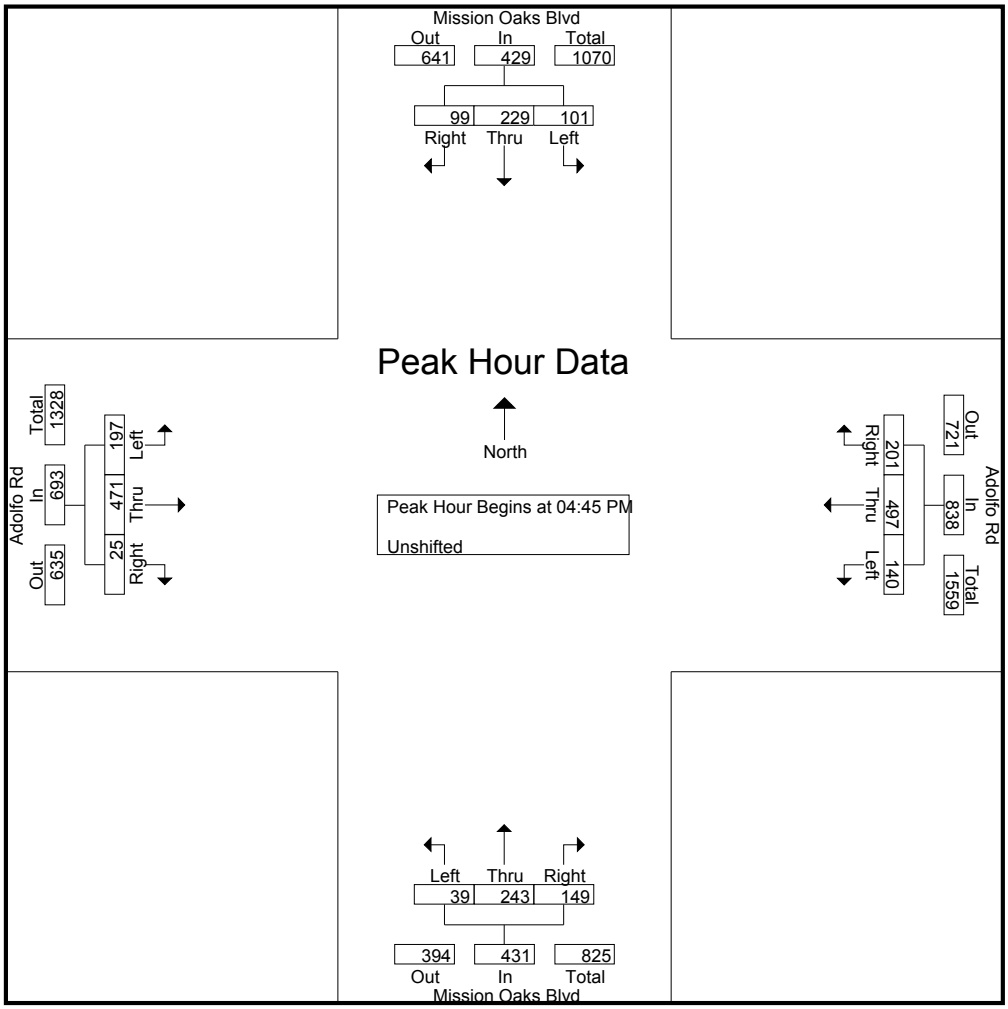
	Mission Oaks Blvd Southbound				Adolfo Rd Westbound				Mission Oaks Blvd Northbound				Adolfo Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**30**	**67**	27	**124**	**39**	120	34	193	**15**	61	33	109	53	109	**12**	174	600
05:00 PM	22	42	18	82	30	121	56	207	9	58	38	105	**56**	**142**	4	**202**	596
05:15 PM	23	64	24	111	39	**136**	**58**	**233**	9	**77**	**39**	**125**	36	117	1	154	**623**
05:30 PM	26	56	**30**	112	32	120	53	205	6	47	39	92	52	103	8	163	572
Total Volume	101	229	99	429	140	497	201	838	39	243	149	431	197	471	25	693	2391
% App. Total	23.5	53.4	23.1		16.7	59.3	24		9	56.4	34.6		28.4	68	3.6		
PHF	.842	.854	.825	.865	.897	.914	.866	.899	.650	.789	.955	.862	.879	.829	.521	.858	.959



CITY TRAFFIC COUNTERS

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File Name : MOaksAdolfo_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Mission Oaks Blvd Southbound		Adolfo Rd Westbound		Mission Oaks Blvd Northbound		Adolfo Rd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	2	1	0	0	3	0	4	10
07:15 AM	2	4	1	1	1	0	1	4	14
07:30 AM	0	7	2	10	1	9	10	36	75
07:45 AM	0	0	5	0	2	3	0	19	29
Total	2	13	9	11	4	15	11	63	128
08:00 AM	3	2	0	0	0	2	0	4	11
08:15 AM	1	0	0	0	1	0	0	0	2
08:30 AM	0	1	0	0	1	3	0	1	6
08:45 AM	1	0	0	0	1	0	0	1	3
Total	5	3	0	0	3	5	0	6	22
04:00 PM	0	0	1	0	2	1	0	1	5
04:15 PM	1	0	1	0	0	1	0	0	3
04:30 PM	0	1	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	0	0	0	0	1
Total	1	2	2	0	2	2	0	1	10
05:00 PM	0	0	0	1	0	0	1	1	3
05:15 PM	3	1	0	1	0	1	1	0	7
05:30 PM	0	1	0	1	2	0	1	0	5
05:45 PM	2	1	0	1	4	2	1	0	11
Total	5	3	0	4	6	3	4	1	26
Grand Total	13	21	11	15	15	25	15	71	186
Apprch %	38.2	61.8	42.3	57.7	37.5	62.5	17.4	82.6	
Total %	7	11.3	5.9	8.1	8.1	13.4	8.1	38.2	

CITY TRAFFIC COUNTERS

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File Name : MOaksAdolfo_BP
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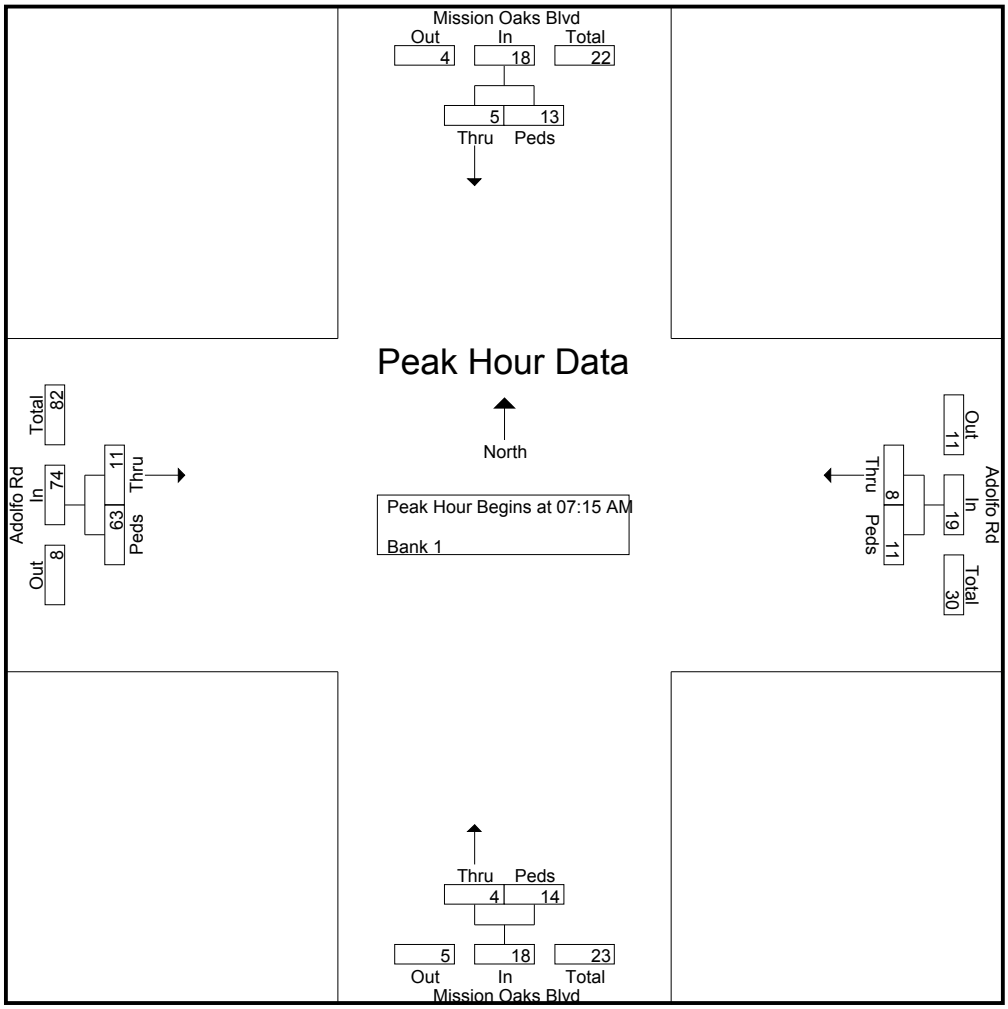
	Mission Oaks Blvd Southbound			Adolfo Rd Westbound			Mission Oaks Blvd Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	2	4	6	1	1	2	1	0	1	1	4	5	14
07:30 AM	0	**7**	**7**	2	**10**	**12**	1	**9**	**10**	**10**	**36**	**46**	**75**
07:45 AM	0	0	0	**5**	0	5	**2**	3	5	0	19	19	29
08:00 AM	**3**	2	5	0	0	0	0	2	2	0	4	4	11
Total Volume	5	13	18	8	11	19	4	14	18	11	63	74	129
% App. Total	27.8	72.2		42.1	57.9		22.2	77.8		14.9	85.1		
PHF	.417	.464	.643	.400	.275	.396	.500	.389	.450	.275	.438	.402	.430



CITY TRAFFIC COUNTERS

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File Name : MOaksAdolfo_BP
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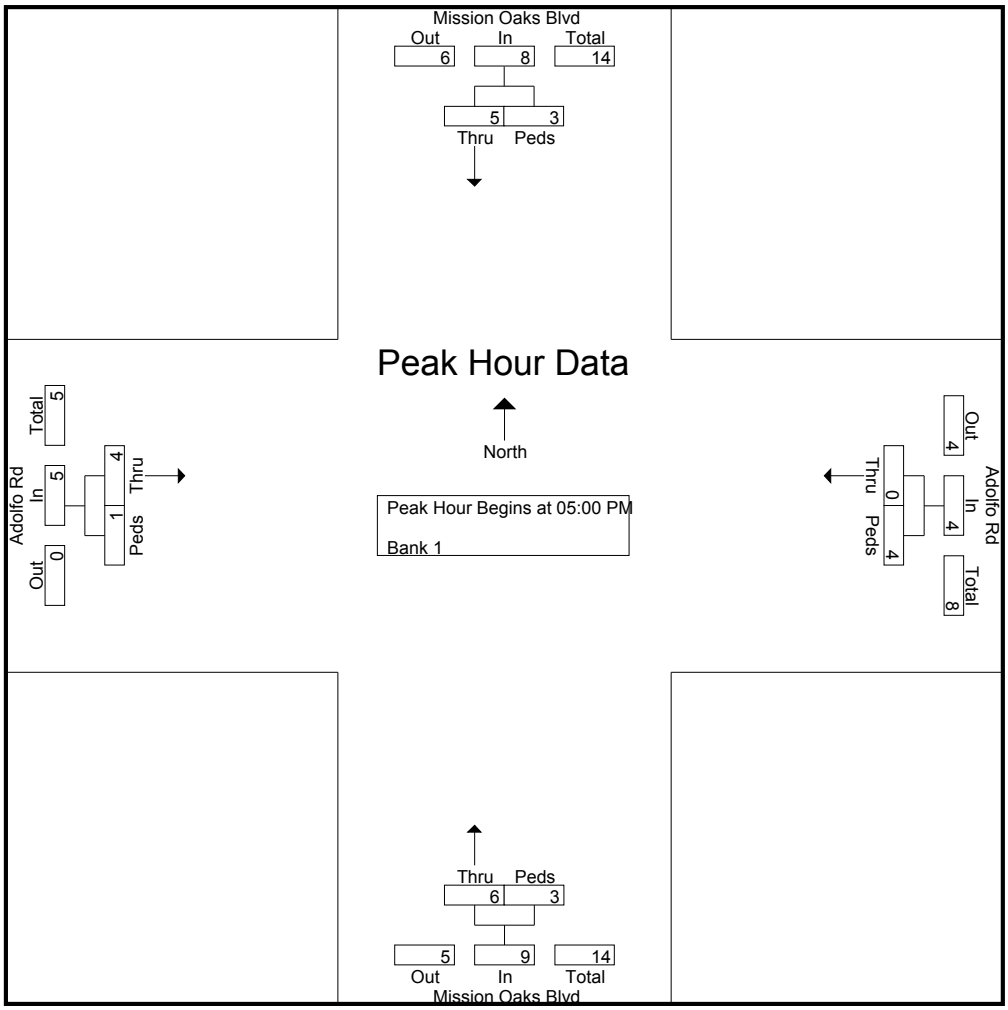
	Mission Oaks Blvd Southbound			Adolfo Rd Westbound			Mission Oaks Blvd Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	**1**	**1**	0	0	0	**1**	**1**	**2**	3
05:15 PM	**3**	**1**	**4**	0	1	1	0	1	1	1	0	1	7
05:30 PM	0	1	1	0	1	1	2	0	2	1	0	1	5
05:45 PM	2	1	3	0	1	1	**4**	**2**	**6**	1	0	1	**11**
Total Volume	5	3	8	0	4	4	6	3	9	4	1	5	26
% App. Total	62.5	37.5		0	100		66.7	33.3		80	20		
PHF	.417	.750	.500	.000	1.00	1.00	.375	.375	.375	1.00	.250	.625	.591



CITY TRAFFIC COUNTERS

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www.ctcounters.com

File Name : pvalleypancho
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Pancho Rd Southbound			Pleasant Valley Rd Westbound			Pancho Rd Northbound			Pleasant Valley Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	3	0	7	58	101	2	12	1	5	1	163	15	368
07:15 AM	4	0	6	78	122	0	16	0	4	2	177	21	430
07:30 AM	7	0	14	85	145	0	26	0	8	1	211	29	526
07:45 AM	4	2	6	77	150	4	11	0	9	3	222	42	530
Total	18	2	33	298	518	6	65	1	26	7	773	107	1854
08:00 AM	3	0	5	90	153	3	17	1	5	4	188	14	483
08:15 AM	5	1	4	69	133	0	11	0	12	1	170	12	418
08:30 AM	5	0	7	55	129	0	8	0	9	2	128	12	355
08:45 AM	4	1	5	44	124	0	17	0	7	1	93	14	310
Total	17	2	21	258	539	3	53	1	33	8	579	52	1566
04:00 PM	1	1	2	8	151	3	54	1	82	16	133	1	453
04:15 PM	2	0	2	17	170	4	37	0	61	4	157	3	457
04:30 PM	5	2	6	14	203	1	71	2	75	2	169	5	555
04:45 PM	2	0	6	5	224	3	69	2	83	5	189	3	591
Total	10	3	16	44	748	11	231	5	301	27	648	12	2056
05:00 PM	2	0	17	9	241	4	97	2	80	9	185	1	647
05:15 PM	4	0	4	7	233	3	75	3	62	17	211	4	623
05:30 PM	0	0	6	7	255	3	151	2	61	25	181	1	692
05:45 PM	6	2	4	15	239	2	122	0	44	9	195	2	640
Total	12	2	31	38	968	12	445	7	247	60	772	8	2602
Grand Total	57	9	101	638	2773	32	794	14	607	102	2772	179	8078
Apprch %	34.1	5.4	60.5	18.5	80.5	0.9	56.1	1	42.9	3.3	90.8	5.9	
Total %	0.7	0.1	1.3	7.9	34.3	0.4	9.8	0.2	7.5	1.3	34.3	2.2	

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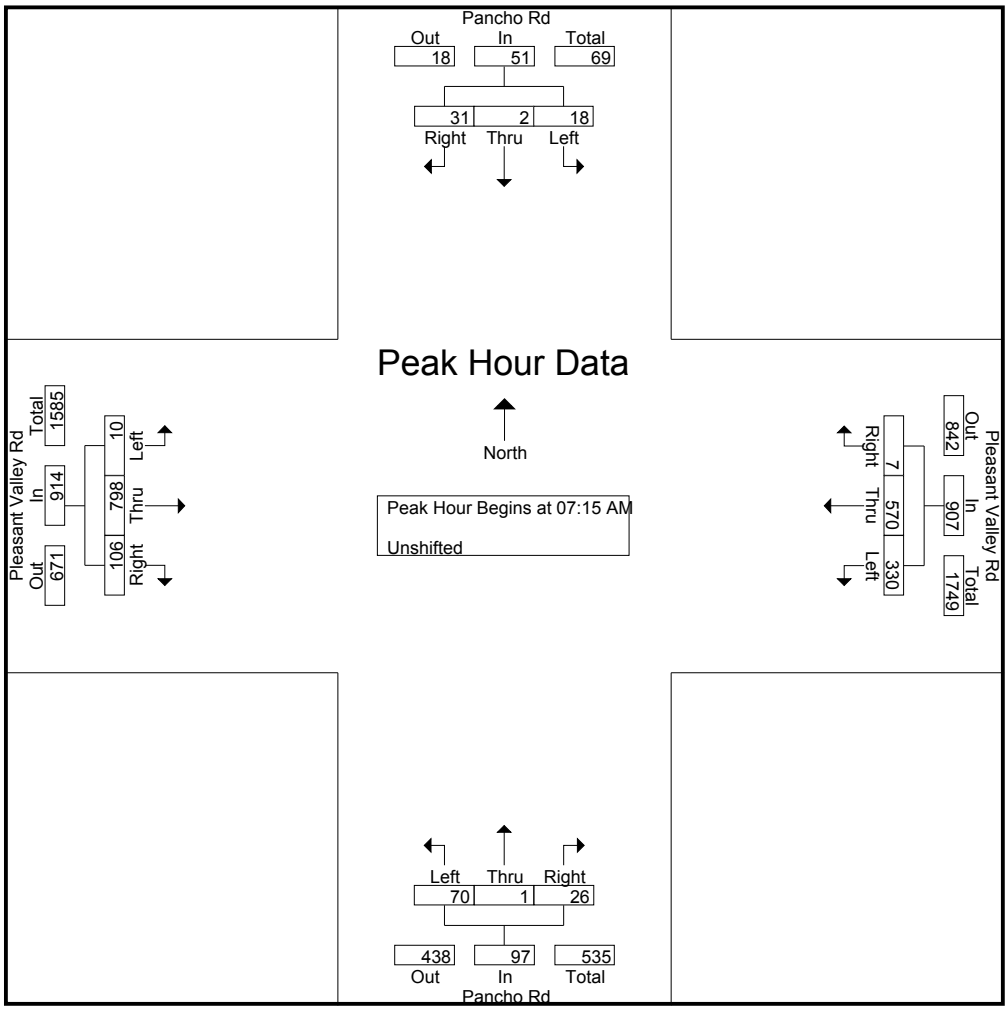
	Pancho Rd Southbound				Pleasant Valley Rd Westbound				Pancho Rd Northbound				Pleasant Valley Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	4	0	6	10	78	122	0	200	16	0	4	20	2	177	21	200	430
07:30 AM	**7**	0	**14**	**21**	85	145	0	230	**26**	0	8	**34**	1	211	29	241	526
07:45 AM	4	**2**	6	12	77	150	**4**	231	11	0	**9**	20	3	**222**	**42**	**267**	**530**
08:00 AM	3	0	5	8	**90**	**153**	3	**246**	17	**1**	5	23	**4**	188	14	206	483
Total Volume	18	2	31	51	330	570	7	907	70	1	26	97	10	798	106	914	1969
% App. Total	35.3	3.9	60.8		36.4	62.8	0.8		72.2	1	26.8		1.1	87.3	11.6		
PHF	.643	.250	.554	.607	.917	.931	.438	.922	.673	.250	.722	.713	.625	.899	.631	.856	.929



CITY TRAFFIC COUNTERS

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Start Date : 4/10/2014
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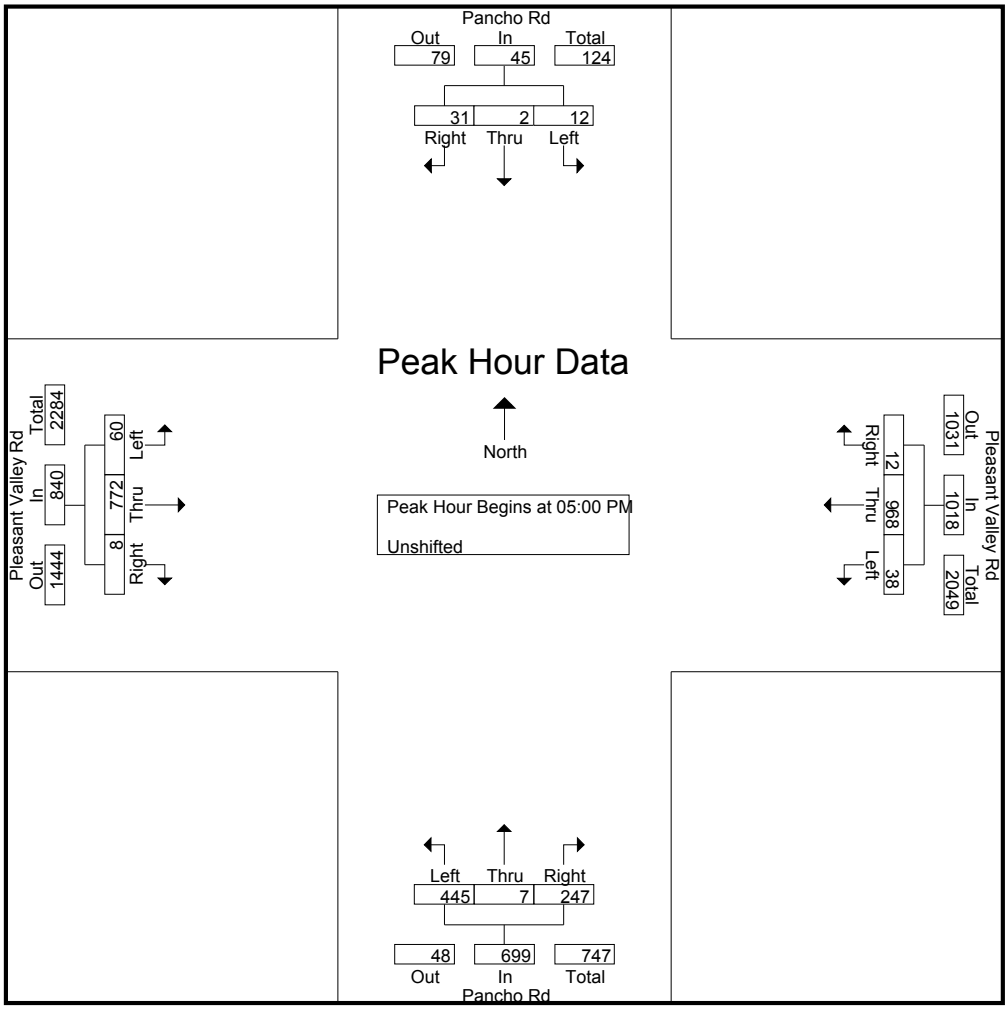
	Pancho Rd Southbound				Pleasant Valley Rd Westbound				Pancho Rd Northbound				Pleasant Valley Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	0	**17**	**19**	9	241	**4**	254	97	2	**80**	179	9	185	1	195	647
05:15 PM	4	0	4	8	7	233	3	243	75	**3**	62	140	17	**211**	**4**	**232**	623
05:30 PM	0	0	6	6	7	**255**	3	**265**	**151**	2	61	**214**	**25**	181	1	207	**692**
05:45 PM	**6**	**2**	4	12	**15**	239	2	256	122	0	44	166	9	195	2	206	640
Total Volume	12	2	31	45	38	968	12	1018	445	7	247	699	60	772	8	840	2602
% App. Total	26.7	4.4	68.9		3.7	95.1	1.2		63.7	1	35.3		7.1	91.9	1		
PHF	.500	.250	.456	.592	.633	.949	.750	.960	.737	.583	.772	.817	.600	.915	.500	.905	.940



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : pvalleypancho_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Pancho Rd Southbound		Pleasant Valley Rd Westbound		Pancho Rd Northbound		Pleasant Valley Rd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:15 AM	0	1	0	0	0	0	0	0	1
07:30 AM	0	1	0	0	0	0	0	0	1
Total	0	2	0	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	1	0	0	1
08:15 AM	0	1	0	0	0	2	0	1	4
08:30 AM	0	0	0	2	0	0	0	0	2
08:45 AM	0	0	0	1	0	0	0	0	1
Total	0	1	0	3	0	3	0	1	8
04:00 PM	0	0	0	0	0	1	0	0	1
04:15 PM	0	0	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	1	0	1	2
04:45 PM	0	0	0	0	0	1	0	2	3
Total	0	0	0	1	0	3	0	3	7
05:45 PM	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	1	1
Grand Total	0	3	0	4	0	6	0	5	18
Apprch %	0	100	0	100	0	100	0	100	
Total %	0	16.7	0	22.2	0	33.3	0	27.8	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : pvalleypancho_BP
Site Code : 00000000
Start Date : 4/10/2014
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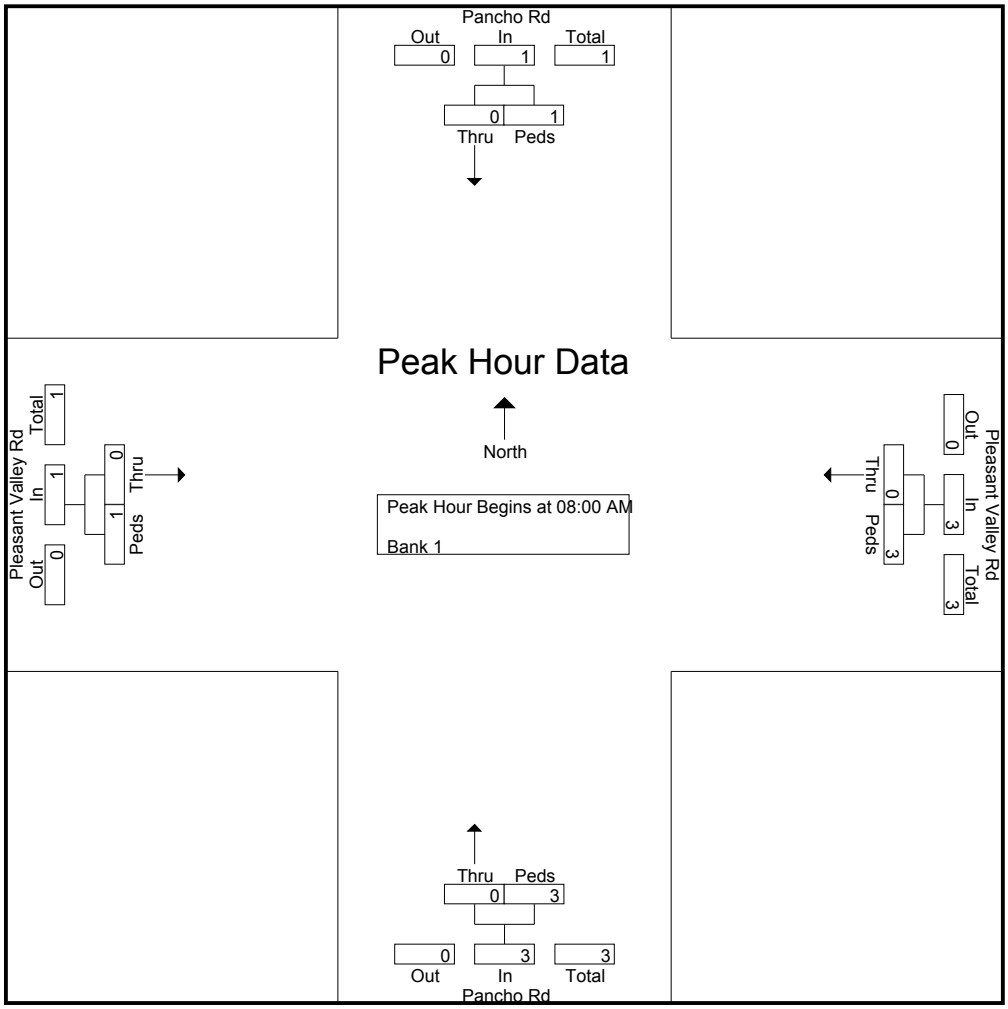
	Pancho Rd Southbound			Pleasant Valley Rd Westbound			Pancho Rd Northbound			Pleasant Valley Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 08:00 AM													
08:00 AM	0	0	0	0	0	0	0	1	1	0	0	0	1
08:15 AM	0	**1**	**1**	0	0	0	0	**2**	**2**	0	**1**	**1**	**4**
08:30 AM	0	0	0	0	**2**	**2**	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	1
Total Volume	0	1	1	0	3	3	0	3	3	0	1	1	8
% App. Total	0	100		0	100		0	100		0	100		
PHF	.000	.250	.250	.000	.375	.375	.000	.375	.375	.000	.250	.250	.500



CITY TRAFFIC COUNTERS

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File Name : pvalleypancho_BP
Site Code : 00000000
Start Date : 4/10/2014
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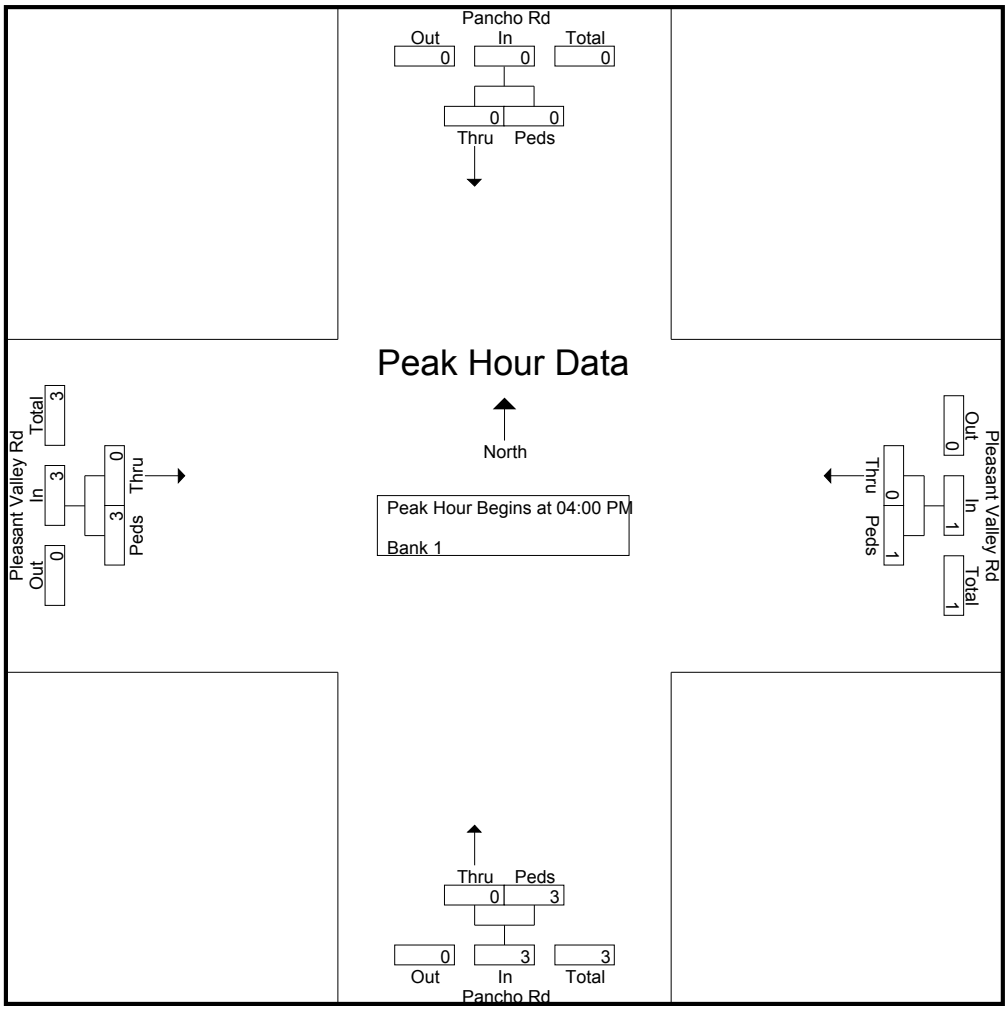
	Pancho Rd Southbound			Pleasant Valley Rd Westbound			Pancho Rd Northbound			Pleasant Valley Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	**1**	**1**	0	0	0	1
04:15 PM	0	0	0	0	**1**	**1**	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	1	1	0	1	1	2
04:45 PM	0	0	0	0	0	0	0	1	1	0	**2**	**2**	**3**
Total Volume	0	0	0	0	1	1	0	3	3	0	3	3	7
% App. Total	0	0		0	100		0	100		0	100		
PHF	.000	.000	.000	.000	.250	.250	.000	.750	.750	.000	.375	.375	.583



CITY TRAFFIC COUNTERS

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File Name : santarosa101nb
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Santa Rosa Rd Southbound			101 NB Ramps Westbound			Santa Rosa Rd Northbound			101 NB Ramps Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	257	121	28	0	44	0	207	22	0	0	0	679
07:15 AM	0	263	223	47	0	60	0	228	30	0	0	0	851
07:30 AM	0	390	266	50	0	72	0	300	32	0	0	0	1110
07:45 AM	0	386	345	47	0	86	0	344	31	0	0	0	1239
Total	0	1296	955	172	0	262	0	1079	115	0	0	0	3879
08:00 AM	0	306	231	54	0	85	0	274	30	0	0	0	980
08:15 AM	0	311	188	57	0	100	0	285	27	0	0	0	968
08:30 AM	0	269	205	67	0	93	0	210	23	0	0	0	867
08:45 AM	0	262	212	42	0	98	0	150	29	0	0	0	793
Total	0	1148	836	220	0	376	0	919	109	0	0	0	3608
04:00 PM	0	220	209	69	0	112	0	344	44	0	0	0	998
04:15 PM	0	212	197	87	0	129	0	332	46	0	0	0	1003
04:30 PM	0	260	191	86	0	138	0	314	47	0	0	0	1036
04:45 PM	0	295	204	92	0	125	0	357	41	0	0	0	1114
Total	0	987	801	334	0	504	0	1347	178	0	0	0	4151
05:00 PM	0	286	149	83	0	143	0	310	44	0	0	0	1015
05:15 PM	0	287	144	77	0	151	0	370	32	0	0	0	1061
05:30 PM	0	250	152	87	0	99	0	400	22	0	0	0	1010
05:45 PM	0	227	119	99	0	118	0	372	25	0	0	0	960
Total	0	1050	564	346	0	511	0	1452	123	0	0	0	4046
Grand Total	0	4481	3156	1072	0	1653	0	4797	525	0	0	0	15684
Apprch %	0	58.7	41.3	39.3	0	60.7	0	90.1	9.9	0	0	0	
Total %	0	28.6	20.1	6.8	0	10.5	0	30.6	3.3	0	0	0	

CITY TRAFFIC COUNTERS

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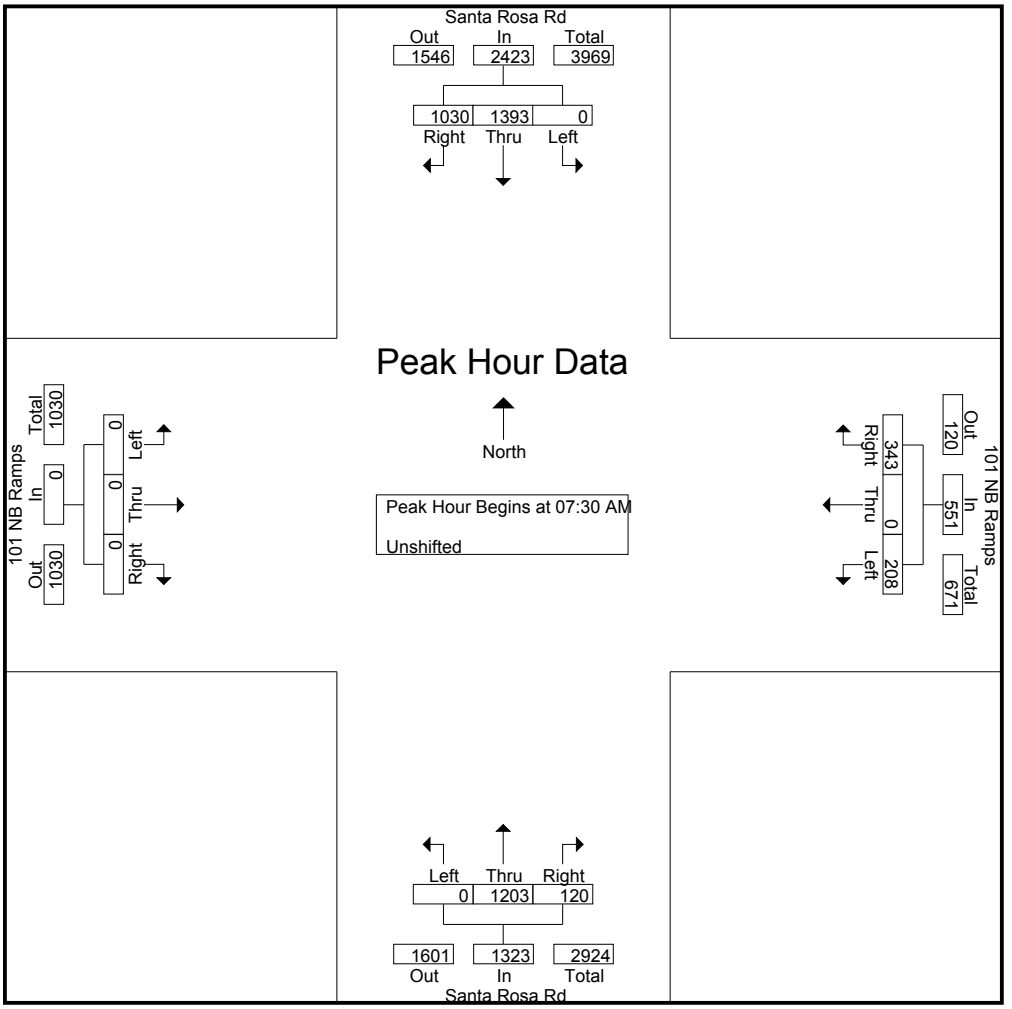
File Name : santarosa101nb
Site Code : 00000000
Start Date : 4/10/2014
Page No : 2

	Santa Rosa Rd Southbound				101 NB Ramps Westbound				Santa Rosa Rd Northbound				101 NB Ramps 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 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**390**	266	656	50	0	72	122	0	300	**32**	332	0	0	0	0	1110
07:45 AM	0	386	**345**	**731**	47	0	86	133	0	**344**	31	**375**	0	0	0	0	**1239**
08:00 AM	0	306	231	537	54	0	85	139	0	274	30	304	0	0	0	0	980
08:15 AM	0	311	188	499	**57**	0	**100**	**157**	0	285	27	312	0	0	0	0	968
Total Volume	0	1393	1030	2423	208	0	343	551	0	1203	120	1323	0	0	0	0	4297
% App. Total	0	57.5	42.5		37.7	0	62.3		0	90.9	9.1		0	0	0		
PHF	.000	.893	.746	.829	.912	.000	.858	.877	.000	.874	.938	.882	.000	.000	.000	.000	.867



CITY TRAFFIC COUNTERS

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File Name : santarosa101nb
Site Code : 00000000
Start Date : 4/10/2014
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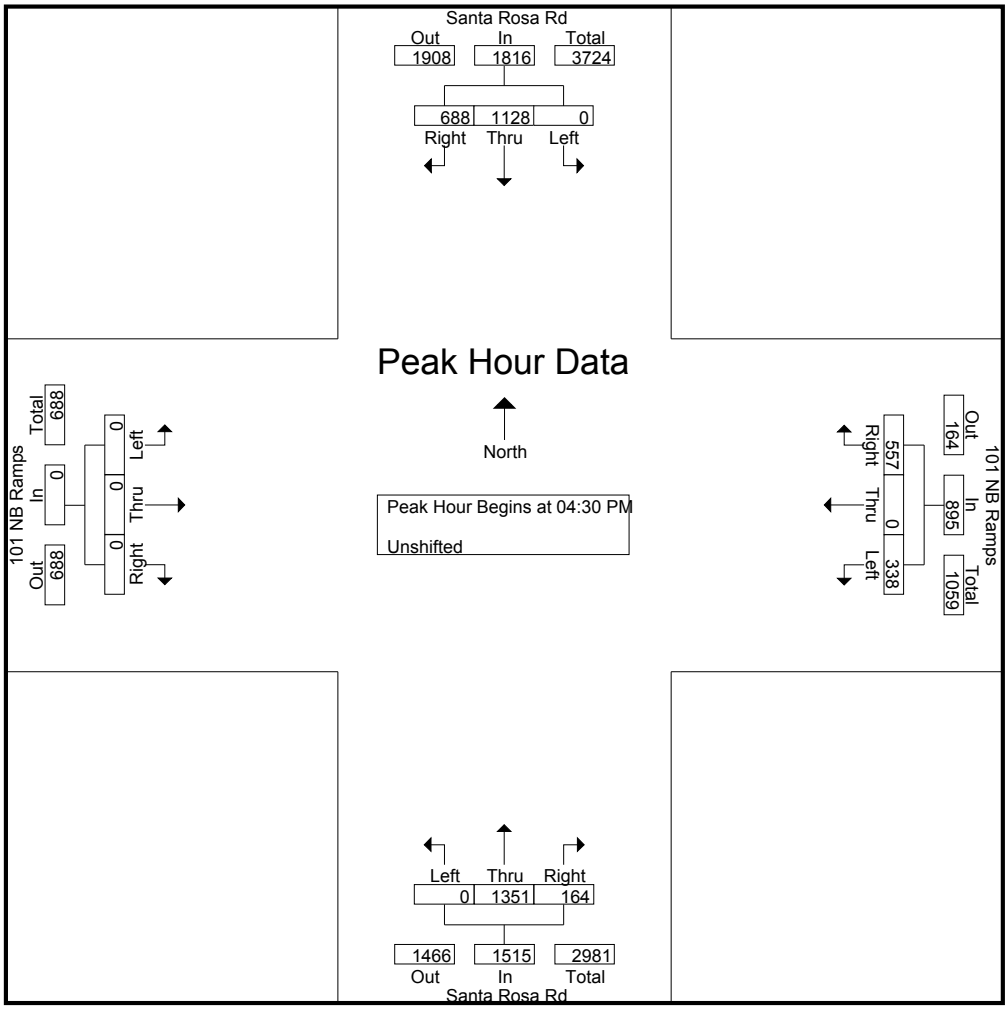
	Santa Rosa Rd Southbound				101 NB Ramps Westbound				Santa Rosa Rd Northbound				101 NB Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	260	191	451	86	0	138	224	0	314	**47**	361	0	0	0	0	1036
04:45 PM	0	**295**	**204**	**499**	**92**	0	125	217	0	357	41	398	0	0	0	0	**1114**
05:00 PM	0	286	149	435	83	0	143	226	0	310	44	354	0	0	0	0	1015
05:15 PM	0	287	144	431	77	0	**151**	**228**	0	**370**	32	**402**	0	0	0	0	1061
Total Volume	0	1128	688	1816	338	0	557	895	0	1351	164	1515	0	0	0	0	4226
% App. Total	0	62.1	37.9		37.8	0	62.2		0	89.2	10.8		0	0	0		
PHF	.000	.956	.843	.910	.918	.000	.922	.981	.000	.913	.872	.942	.000	.000	.000	.000	.948



CITY TRAFFIC COUNTERS

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File Name : santarosa101nb_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Santa Rosa Rd Southbound		101 NB Ramps Westbound		Santa Rosa Rd Northbound		101 NB Ramps Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:30 AM	0	0	1	0	0	0	0	0	1
Total	0	0	1	0	0	0	0	0	1
04:00 PM	0	0	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	2	2
Total	0	0	0	0	0	0	0	3	3
05:00 PM	0	0	0	1	0	0	0	0	1
Total	0	0	0	1	0	0	0	0	1
Grand Total	0	0	1	1	0	0	0	3	5
Apprch %	0	0	50	50	0	0	0	100	
Total %	0	0	20	20	0	0	0	60	

CITY TRAFFIC COUNTERS

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File Name : santarosa101nb_BP
Site Code : 00000000
Start Date : 4/10/2014
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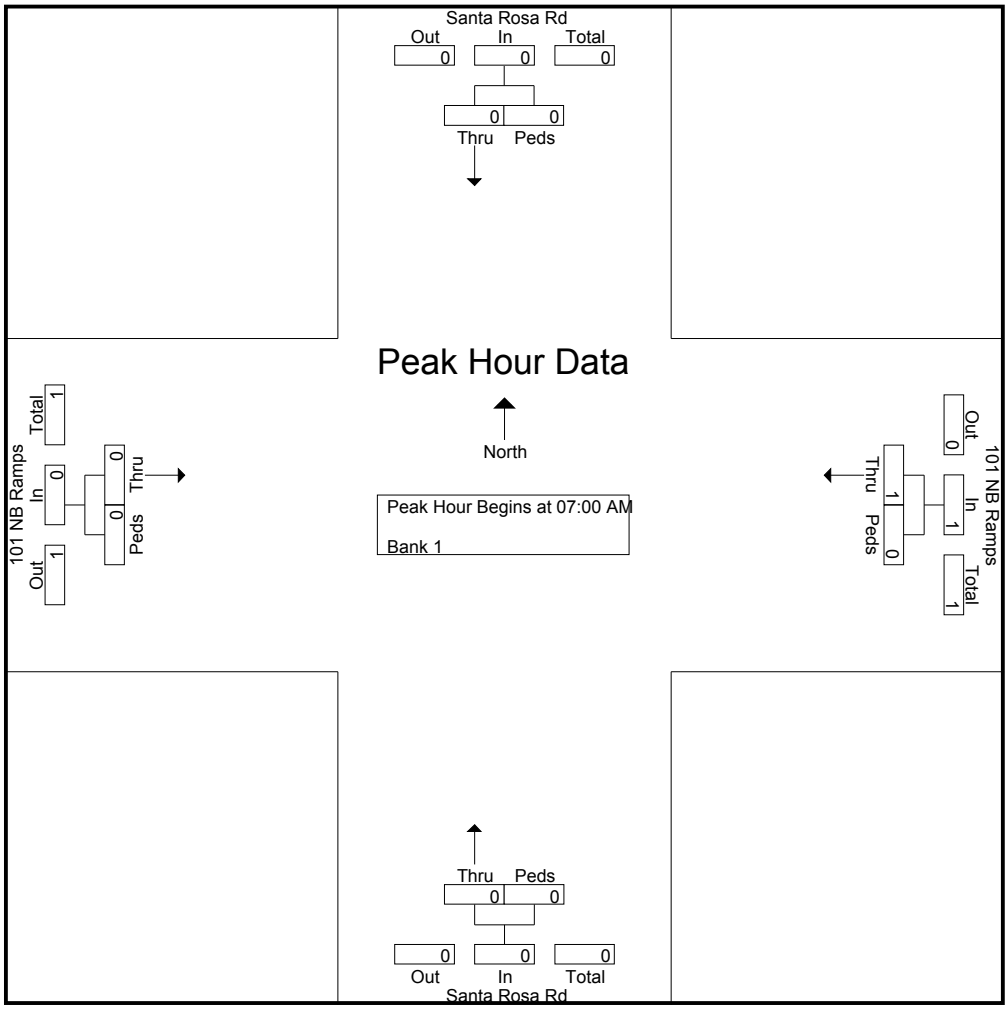
	Santa Rosa Rd Southbound			101 NB Ramps Westbound			Santa Rosa Rd Northbound			101 NB Ramps Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	**1**	0	**1**	0	0	0	0	0	0	**1**
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0	0	0	0	1
% App. Total	0	0		100	0		0	0		0	0		
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.250



CITY TRAFFIC COUNTERS

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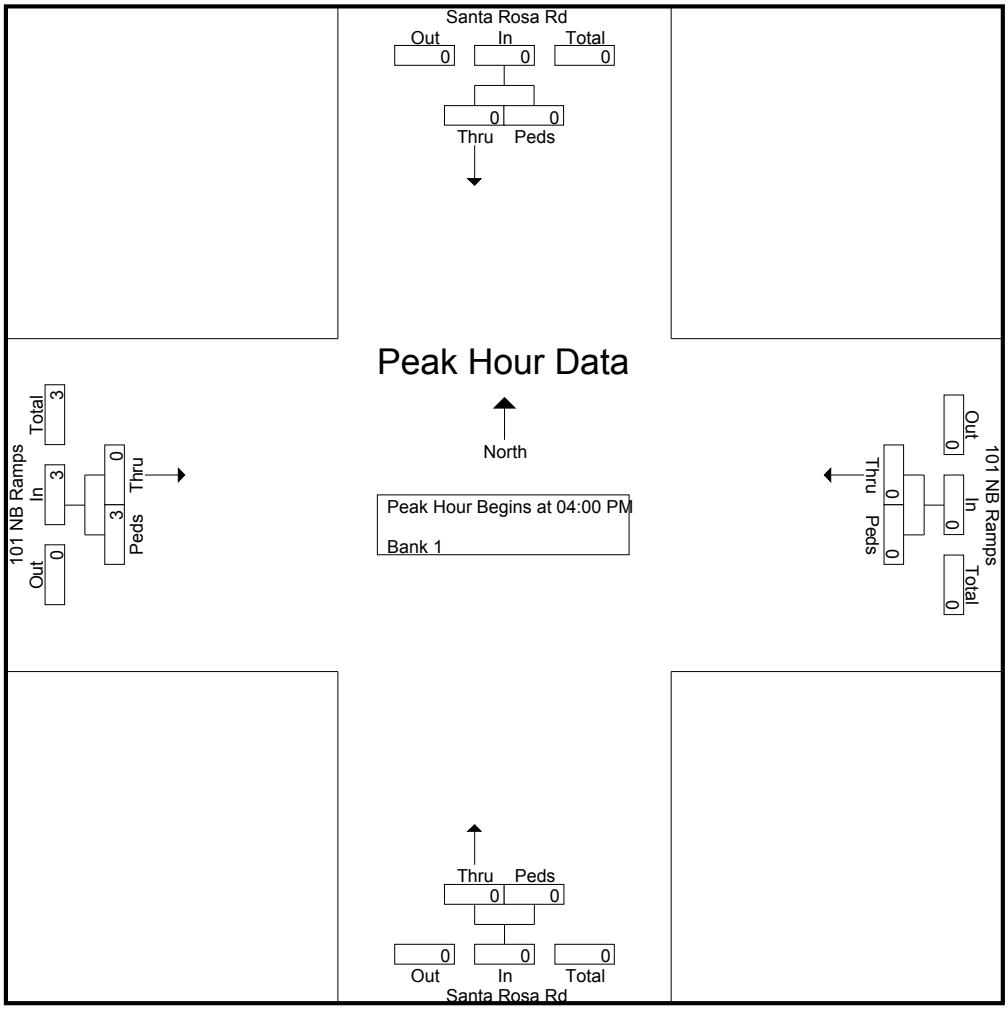
File Name : santarosa101nb_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 3

	Santa Rosa Rd Southbound			101 NB Ramps Westbound			Santa Rosa Rd Northbound			101 NB Ramps Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	**2**	**2**	**2**
Total Volume	0	0	0	0	0	0	0	0	0	0	3	3	3
% App. Total	0	0		0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.375	.375	.375



CITY TRAFFIC COUNTERS

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File Name : SantaRosa101sb
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Santa Rosa Rd Southbound			101 SB Ramps Westbound			Santa Rosa Rd Northbound				101 SB Ramps Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	101	Left	Thru	Right	Int. Total
07:00 AM	6	131	151	0	0	7	0	118	1	52	163	5	33	667
07:15 AM	1	129	178	0	0	3	0	109	1	66	150	2	32	671
07:30 AM	0	198	240	0	0	4	0	148	1	71	187	0	35	884
07:45 AM	1	209	227	0	0	1	0	202	0	72	171	0	37	920
Total	8	667	796	0	0	15	0	577	3	261	671	7	137	3142
08:00 AM	3	225	134	1	0	1	0	129	1	71	174	0	33	772
08:15 AM	0	195	175	0	0	0	0	131	1	89	180	0	42	813
08:30 AM	1	197	138	0	0	0	0	96	0	69	141	0	15	657
08:45 AM	0	164	139	1	0	1	0	80	2	49	102	1	20	559
Total	4	781	586	2	0	2	0	436	4	278	597	1	110	2801
04:00 PM	7	173	104	4	0	4	0	180	0	66	210	0	12	760
04:15 PM	2	202	95	2	0	4	0	157	0	74	224	0	26	786
04:30 PM	2	219	126	1	0	2	0	150	0	86	215	1	21	823
04:45 PM	1	236	147	0	0	4	0	184	1	72	217	1	15	878
Total	12	830	472	7	0	14	0	671	1	298	866	2	74	3247
05:00 PM	3	235	129	4	0	7	0	176	1	70	180	2	30	837
05:15 PM	2	200	161	3	0	6	0	167	2	91	236	0	26	894
05:30 PM	1	219	119	0	0	2	0	185	0	53	237	0	24	840
05:45 PM	4	205	121	4	0	2	0	164	1	66	232	0	30	829
Total	10	859	530	11	0	17	0	692	4	280	885	2	110	3400
Grand Total	34	3137	2384	20	0	48	0	2376	12	1117	3019	12	431	12590
Apprch %	0.6	56.5	42.9	29.4	0	70.6	0	67.8	0.3	31.9	87.2	0.3	12.4	
Total %	0.3	24.9	18.9	0.2	0	0.4	0	18.9	0.1	8.9	24	0.1	3.4	

CITY TRAFFIC COUNTERS

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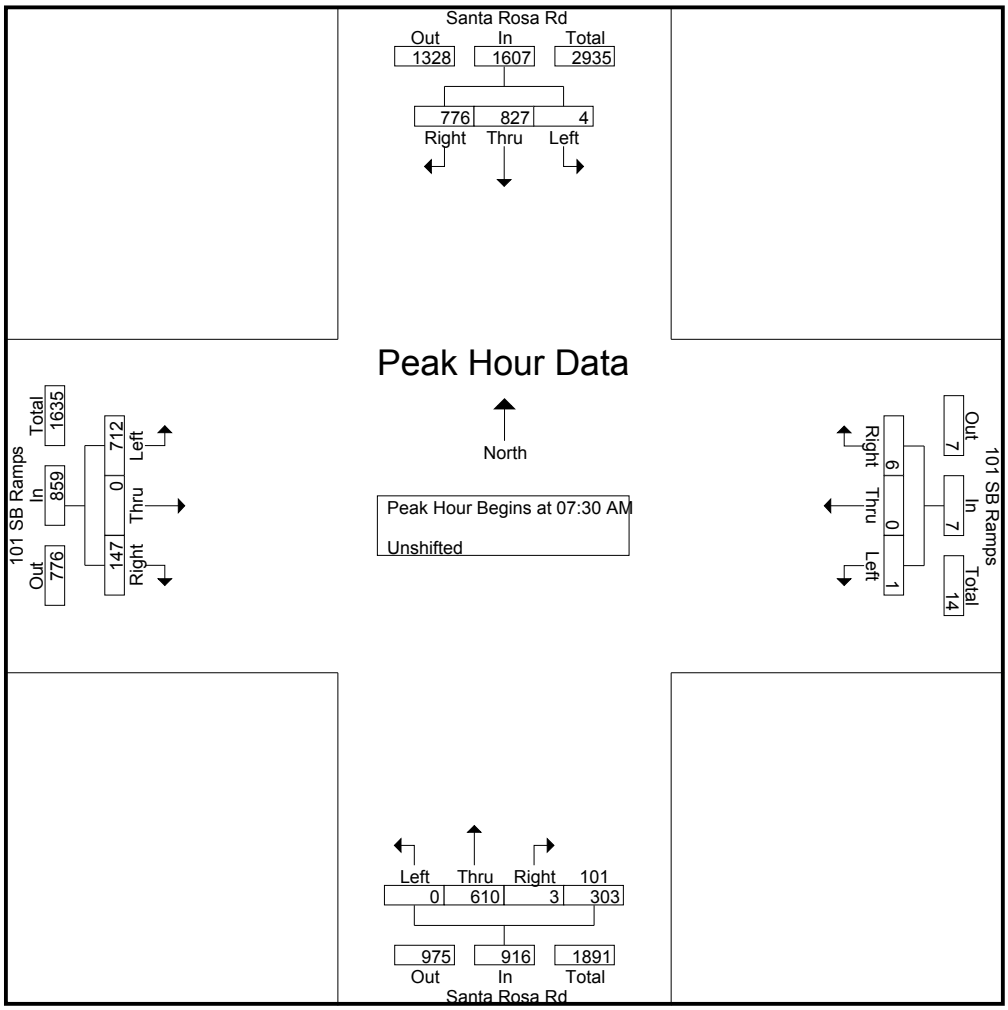
File Name : SantaRosa101sb
Site Code : 00000000
Start Date : 4/10/2014
Page No : 2

	Santa Rosa Rd Southbound				101 SB Ramps Westbound				Santa Rosa Rd Northbound					101 SB Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	101	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:30 AM																		
07:30 AM	0	198	**240**	**438**	0	0	**4**	**4**	0	148	**1**	71	220	**187**	0	35	**222**	884
07:45 AM	1	209	227	437	0	0	1	1	0	**202**	0	72	**274**	171	0	37	208	**920**
08:00 AM	**3**	**225**	134	362	**1**	0	1	2	0	129	1	71	201	174	0	33	207	772
08:15 AM	0	195	175	370	0	0	0	0	0	131	1	**89**	221	180	0	**42**	222	813
Total Volume	4	827	776	1607	1	0	6	7	0	610	3	303	916	712	0	147	859	3389
% App. Total	0.2	51.5	48.3		14.3	0	85.7		0	66.6	0.3	33.1		82.9	0	17.1		
PHF	.333	.919	.808	.917	.250	.000	.375	.438	.000	.755	.750	.851	.836	.952	.000	.875	.967	.921



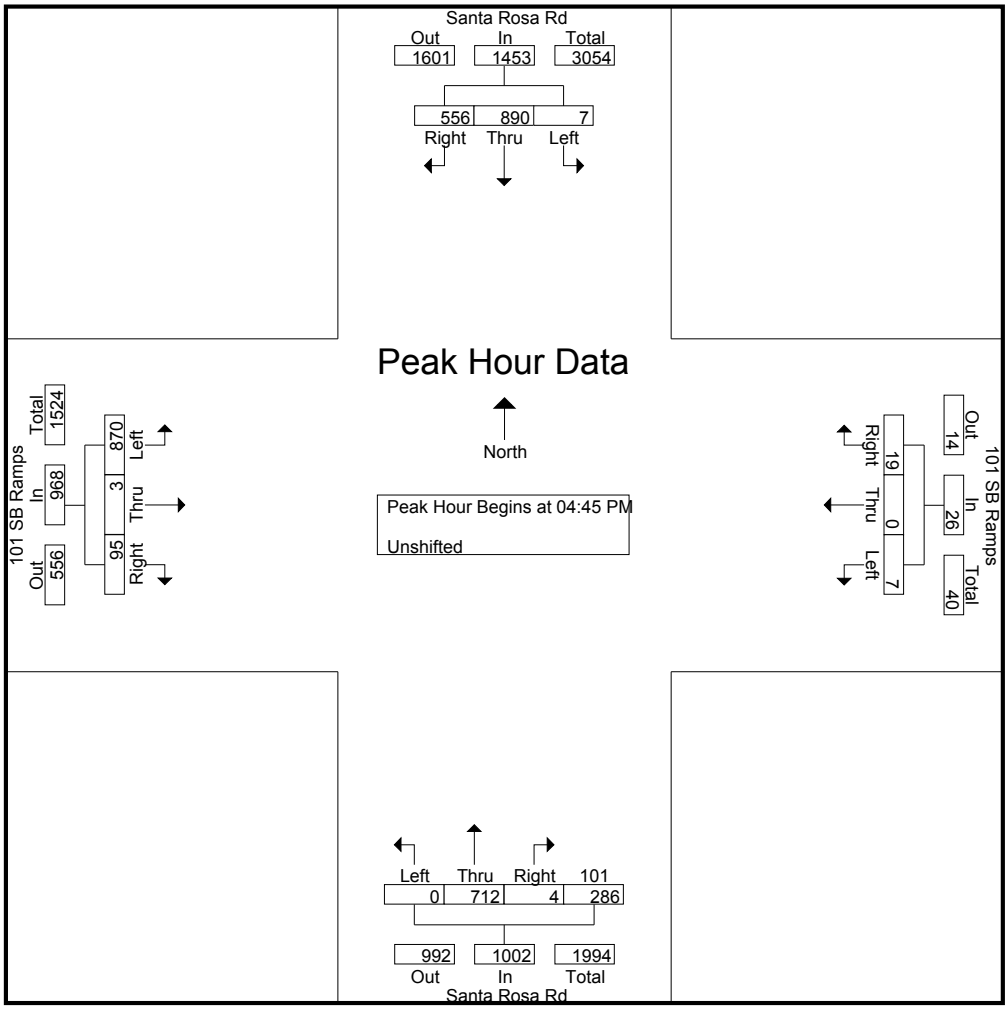
CITY TRAFFIC COUNTERS

626.991.7522

www.ctcounters.com

File Name : SantaRosa101sb
Site Code : 00000000
Start Date : 4/10/2014
Page No : 3

	Santa Rosa Rd Southbound				101 SB Ramps Westbound				Santa Rosa Rd Northbound					101 SB Ramps Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	101	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 04:45 PM																		
04:45 PM	1	**236**	147	**384**	0	0	4	4	0	184	1	72	257	217	1	15	233	878
05:00 PM	**3**	235	129	367	**4**	0	**7**	**11**	0	176	1	70	247	180	**2**	**30**	212	837
05:15 PM	2	200	**161**	363	3	0	6	9	0	167	**2**	**91**	**260**	236	0	26	**262**	**894**
05:30 PM	1	219	119	339	0	0	2	2	0	**185**	0	53	238	**237**	0	24	261	840
Total Volume	7	890	556	1453	7	0	19	26	0	712	4	286	1002	870	3	95	968	3449
% App. Total	0.5	61.3	38.3		26.9	0	73.1		0	71.1	0.4	28.5		89.9	0.3	9.8		
PHF	.583	.943	.863	.946	.438	.000	.679	.591	.000	.962	.500	.786	.963	.918	.375	.792	.924	.964



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : SantaRosa101sb_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Santa Rosa Rd Southbound		101 SB Ramps Westbound		Santa Rosa Rd Northbound		101 SB Ramps Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	0	1	0	0	0	0	0	1
07:15 AM	0	1	0	0	1	0	0	0	2
07:30 AM	0	0	1	3	0	0	0	0	4
07:45 AM	1	0	0	1	0	1	0	0	3
Total	1	1	2	4	1	1	0	0	10
08:00 AM	0	0	1	0	0	0	0	0	1
08:30 AM	0	0	0	1	0	0	0	0	1
08:45 AM	0	2	0	0	2	0	0	0	4
Total	0	2	1	1	2	0	0	0	6
04:30 PM	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	1	1	0	0	0	0	2
Total	0	0	2	1	0	0	0	0	3
05:00 PM	0	0	1	0	0	0	0	0	1
05:15 PM	0	1	4	3	1	0	2	0	11
05:30 PM	0	0	1	0	0	0	3	0	4
05:45 PM	0	0	1	0	0	0	1	0	2
Total	0	1	7	3	1	0	6	0	18
Grand Total	1	4	12	9	4	1	6	0	37
Apprch %	20	80	57.1	42.9	80	20	100	0	
Total %	2.7	10.8	32.4	24.3	10.8	2.7	16.2	0	

CITY TRAFFIC COUNTERS

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File Name : SantaRosa101sb_BP
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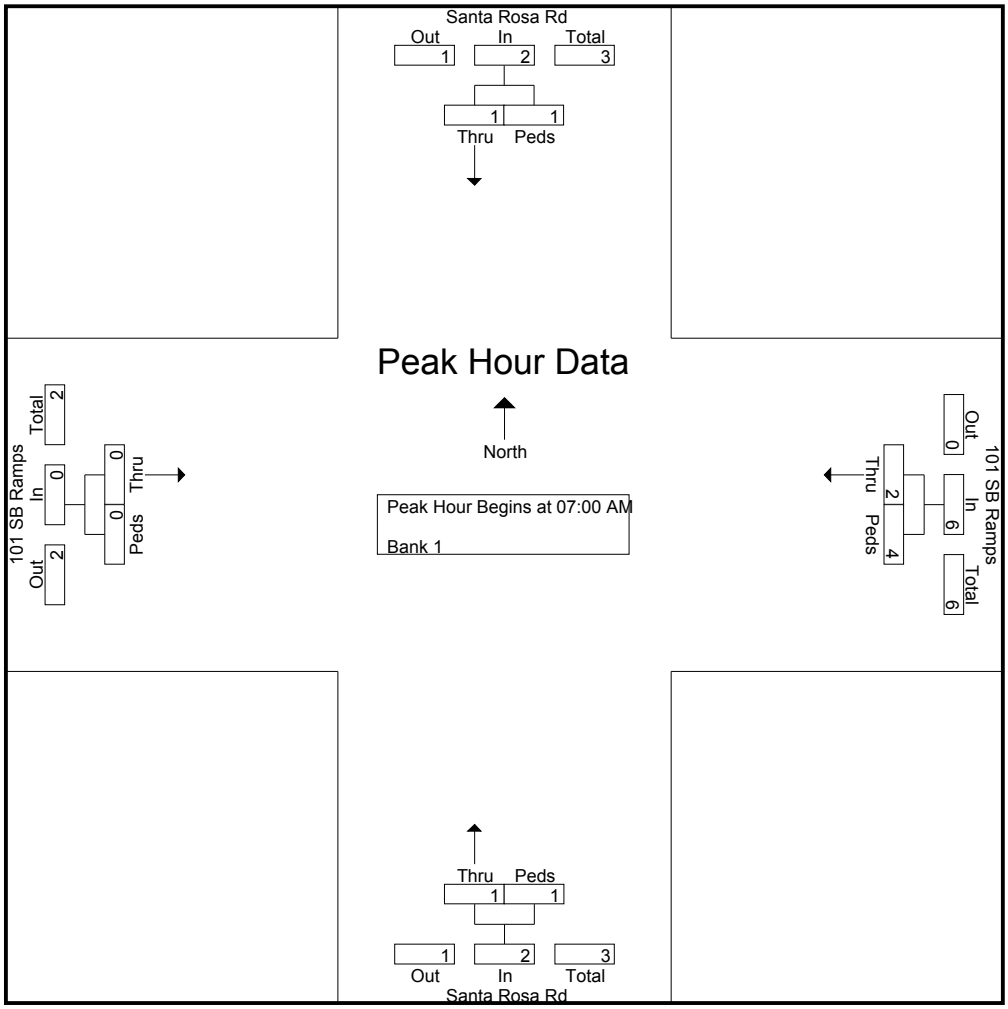
	Santa Rosa Rd Southbound			101 SB Ramps Westbound			Santa Rosa Rd Northbound			101 SB Ramps Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	**1**	0	1	0	0	0	0	0	0	1
07:15 AM	0	**1**	**1**	0	0	0	**1**	0	**1**	0	0	0	2
07:30 AM	0	0	0	1	**3**	**4**	0	0	0	0	0	0	**4**
07:45 AM	**1**	0	1	0	1	1	0	**1**	1	0	0	0	3
Total Volume	1	1	2	2	4	6	1	1	2	0	0	0	10
% App. Total	50	50		33.3	66.7		50	50		0	0		
PHF	.250	.250	.500	.500	.333	.375	.250	.250	.500	.000	.000	.000	.625



CITY TRAFFIC COUNTERS

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File Name : SantaRosa101sb_BP
Site Code : 00000000
Start Date : 4/10/2014
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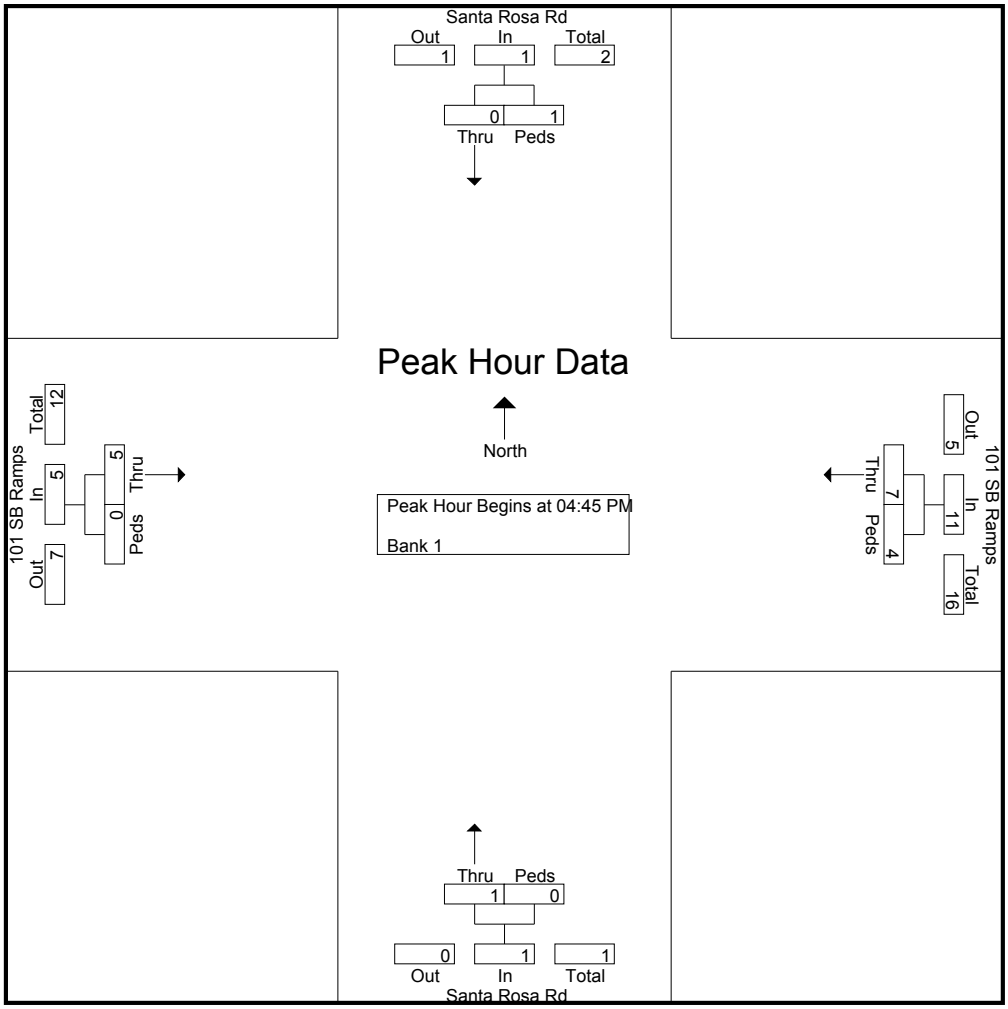
	Santa Rosa Rd Southbound			101 SB Ramps Westbound			Santa Rosa Rd Northbound			101 SB Ramps Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:45 PM													
04:45 PM	0	0	0	1	1	2	0	0	0	0	0	0	2
05:00 PM	0	0	0	1	0	1	0	0	0	0	0	0	1
05:15 PM	0	**1**	**1**	**4**	**3**	**7**	**1**	0	**1**	2	0	2	**11**
05:30 PM	0	0	0	1	0	1	0	0	0	**3**	0	**3**	4
Total Volume	0	1	1	7	4	11	1	0	1	5	0	5	18
% App. Total	0	100		63.6	36.4		100	0		100	0		
PHF	.000	.250	.250	.438	.333	.393	.250	.000	.250	.417	.000	.417	.409



CITY TRAFFIC COUNTERS

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File Name : SRosaAdolfo
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Santa Rosa Rd Southbound			Adolfo Rd Westbound			Santa Rosa Rd Northbound			Adolfo Rd Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	9	206	16	38	17	1	34	122	22	18	23	108	614
07:15 AM	15	291	25	38	9	4	61	130	25	17	28	135	778
07:30 AM	20	369	28	58	29	4	88	160	36	22	41	141	996
07:45 AM	27	388	24	52	35	5	115	185	26	21	49	197	1124
Total	71	1254	93	186	90	14	298	597	109	78	141	581	3512
08:00 AM	22	292	32	54	21	2	59	155	41	22	62	143	905
08:15 AM	13	301	13	40	19	3	88	177	34	22	58	115	883
08:30 AM	16	309	15	43	19	4	89	147	16	21	35	90	804
08:45 AM	11	269	17	47	15	3	65	130	12	12	37	99	717
Total	62	1171	77	184	74	12	301	609	103	77	192	447	3309
04:00 PM	7	224	17	50	52	8	140	278	13	41	35	93	958
04:15 PM	6	210	19	50	30	5	144	278	13	35	25	95	910
04:30 PM	12	226	30	62	35	8	116	265	13	49	35	85	936
04:45 PM	11	231	20	38	52	7	128	318	13	43	46	90	997
Total	36	891	86	200	169	28	528	1139	52	168	141	363	3801
05:00 PM	9	218	23	36	55	11	129	293	13	74	43	93	997
05:15 PM	6	225	20	37	65	6	151	327	17	43	38	102	1037
05:30 PM	10	250	19	34	41	7	138	299	13	53	31	85	980
05:45 PM	10	198	14	39	33	4	134	316	27	42	38	86	941
Total	35	891	76	146	194	28	552	1235	70	212	150	366	3955
Grand Total	204	4207	332	716	527	82	1679	3580	334	535	624	1757	14577
Apprch %	4.3	88.7	7	54	39.8	6.2	30	64	6	18.3	21.4	60.3	
Total %	1.4	28.9	2.3	4.9	3.6	0.6	11.5	24.6	2.3	3.7	4.3	12.1	

CITY TRAFFIC COUNTERS

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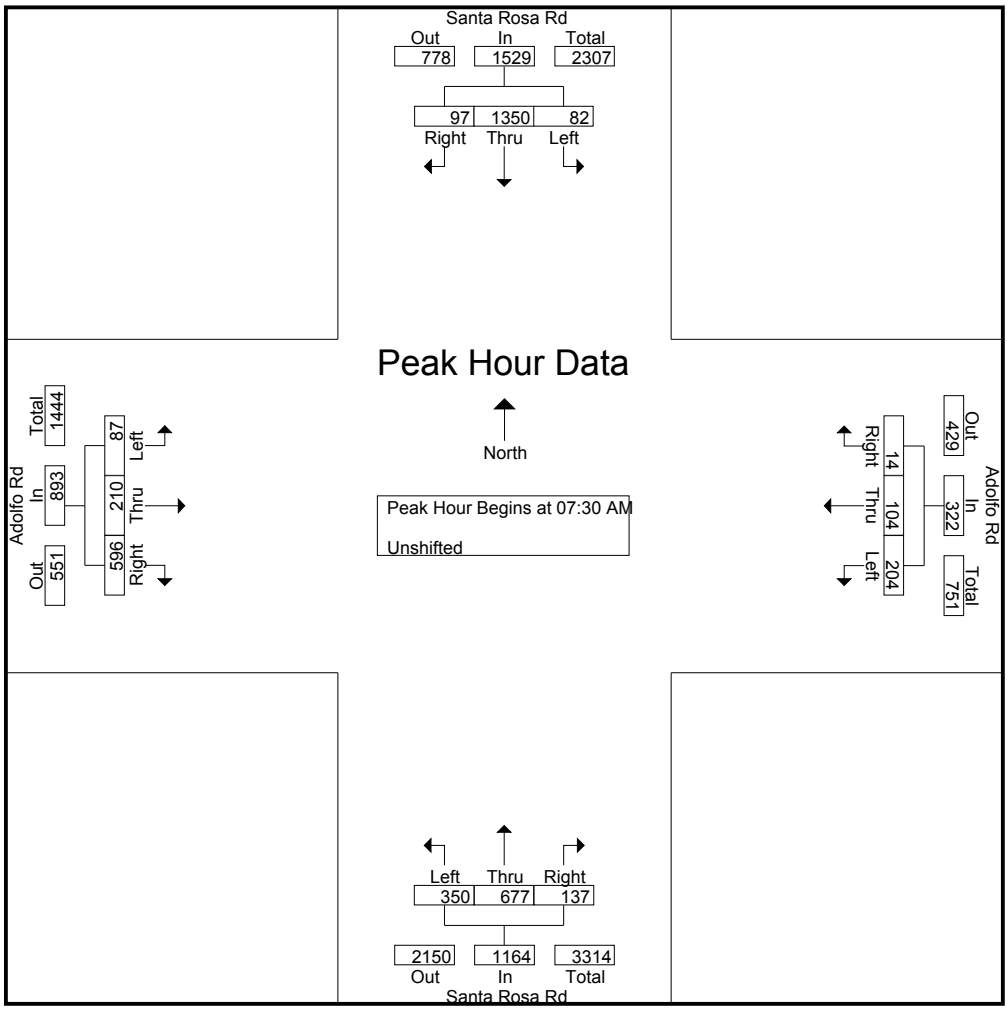
	Santa Rosa Rd Southbound				Adolfo Rd Westbound				Santa Rosa Rd Northbound				Adolfo Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	20	369	28	417	**58**	29	4	91	88	160	36	284	**22**	41	141	204	996
07:45 AM	**27**	**388**	24	**439**	52	**35**	**5**	**92**	**115**	**185**	26	**326**	21	49	**197**	**267**	**1124**
08:00 AM	22	292	**32**	346	54	21	2	77	59	155	**41**	255	22	**62**	143	227	905
08:15 AM	13	301	13	327	40	19	3	62	88	177	34	299	22	58	115	195	883
Total Volume	82	1350	97	1529	204	104	14	322	350	677	137	1164	87	210	596	893	3908
% App. Total	5.4	88.3	6.3		63.4	32.3	4.3		30.1	58.2	11.8		9.7	23.5	66.7		
PHF	.759	.870	.758	.871	.879	.743	.700	.875	.761	.915	.835	.893	.989	.847	.756	.836	.869



CITY TRAFFIC COUNTERS

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File Name : SRosaAdolfo
Site Code : 00000000
Start Date : 4/10/2014
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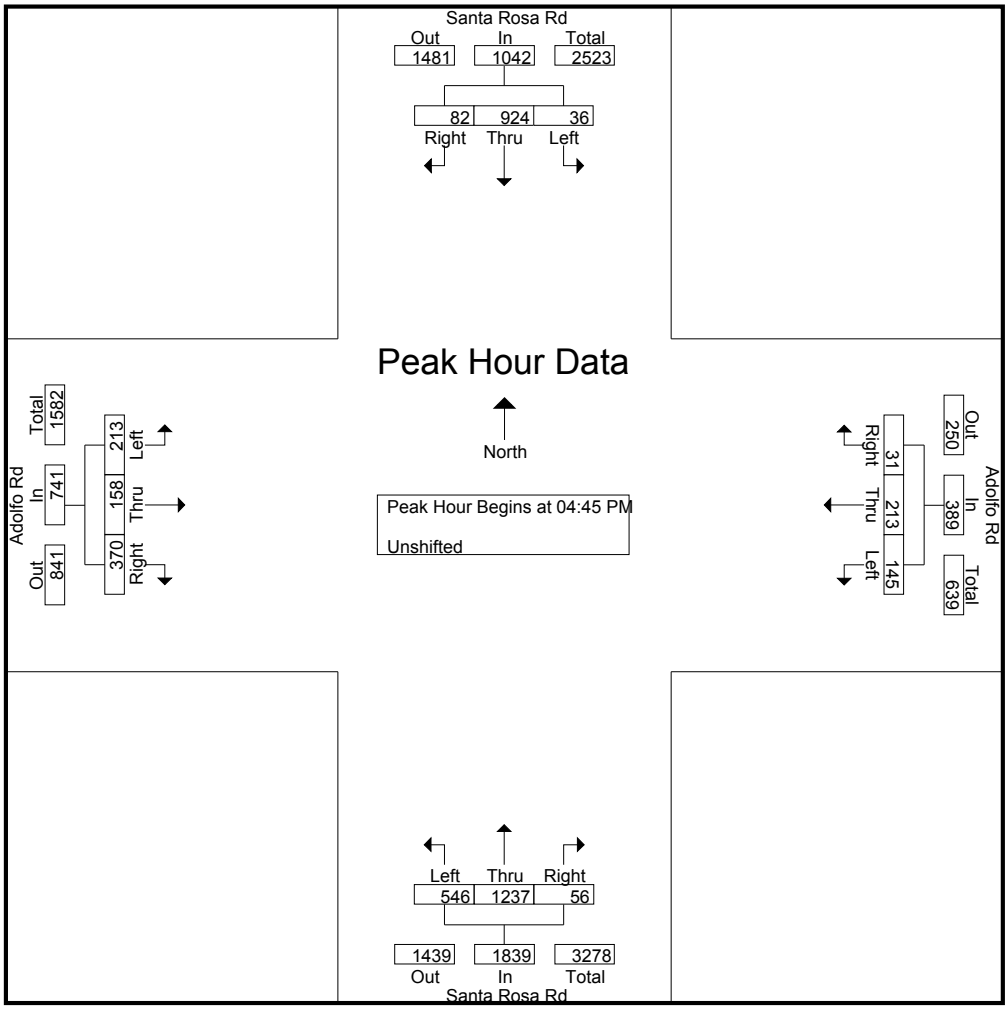
	Santa Rosa Rd Southbound				Adolfo Rd Westbound				Santa Rosa Rd Northbound				Adolfo Rd Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	**11**	231	20	262	**38**	52	7	97	128	318	13	459	43	**46**	90	179	997
05:00 PM	9	218	**23**	250	36	55	**11**	102	129	293	13	435	**74**	43	93	**210**	997
05:15 PM	6	225	20	251	37	**65**	6	**108**	**151**	**327**	**17**	**495**	43	38	**102**	183	**1037**
05:30 PM	10	**250**	19	**279**	34	41	7	82	138	299	13	450	53	31	85	169	980
Total Volume	36	924	82	1042	145	213	31	389	546	1237	56	1839	213	158	370	741	4011
% App. Total	3.5	88.7	7.9		37.3	54.8	8		29.7	67.3	3		28.7	21.3	49.9		
PHF	.818	.924	.891	.934	.954	.819	.705	.900	.904	.946	.824	.929	.720	.859	.907	.882	.967



CITY TRAFFIC COUNTERS

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File Name : SRosaAdolfo_BP
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Groups Printed- Bank 1

	Santa Rosa Rd Southbound		Adolfo Rd Westbound		Santa Rosa Rd Northbound		Adolfo Rd Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	1	0	2	1	1	0	0	5
07:15 AM	0	0	0	0	1	2	0	1	4
07:30 AM	0	5	0	1	1	3	0	4	14
07:45 AM	0	4	0	1	0	2	0	0	7
Total	0	10	0	4	3	8	0	5	30
08:00 AM	0	1	1	0	0	0	0	3	5
08:15 AM	1	1	0	0	0	0	0	1	3
08:30 AM	0	1	0	1	1	3	0	0	6
08:45 AM	0	2	0	0	0	3	0	2	7
Total	1	5	1	1	1	6	0	6	21
04:00 PM	2	0	0	0	0	1	0	0	3
04:15 PM	1	3	0	2	0	2	0	2	10
04:30 PM	7	4	0	1	0	1	0	0	13
04:45 PM	0	0	1	0	0	1	1	0	3
Total	10	7	1	3	0	5	1	2	29
05:00 PM	2	3	1	0	13	0	0	0	19
05:15 PM	3	1	2	2	1	1	1	5	16
05:30 PM	1	0	0	0	1	6	2	0	10
05:45 PM	3	0	1	0	0	0	0	0	4
Total	9	4	4	2	15	7	3	5	49
Grand Total	20	26	6	10	19	26	4	18	129
Apprch %	43.5	56.5	37.5	62.5	42.2	57.8	18.2	81.8	
Total %	15.5	20.2	4.7	7.8	14.7	20.2	3.1	14	

CITY TRAFFIC COUNTERS

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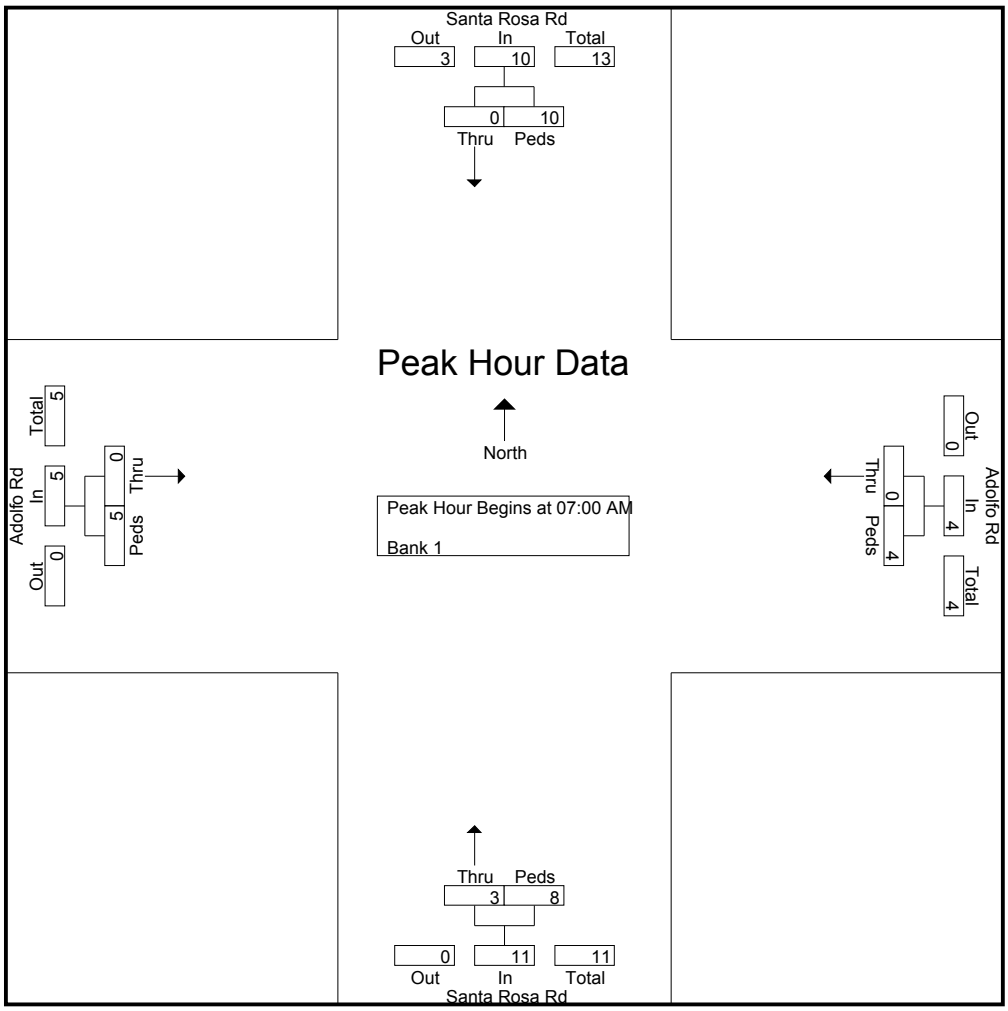
	Santa Rosa Rd Southbound			Adolfo Rd Westbound			Santa Rosa Rd Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	1	1	0	**2**	**2**	**1**	1	2	0	0	0	5
07:15 AM	0	0	0	0	0	0	1	2	3	0	1	1	4
07:30 AM	0	**5**	**5**	0	1	1	1	**3**	**4**	0	**4**	**4**	**14**
07:45 AM	0	4	4	0	1	1	0	2	2	0	0	0	7
Total Volume	0	10	10	0	4	4	3	8	11	0	5	5	30
% App. Total	0	100		0	100		27.3	72.7		0	100		
PHF	.000	.500	.500	.000	.500	.500	.750	.667	.688	.000	.313	.313	.536



CITY TRAFFIC COUNTERS

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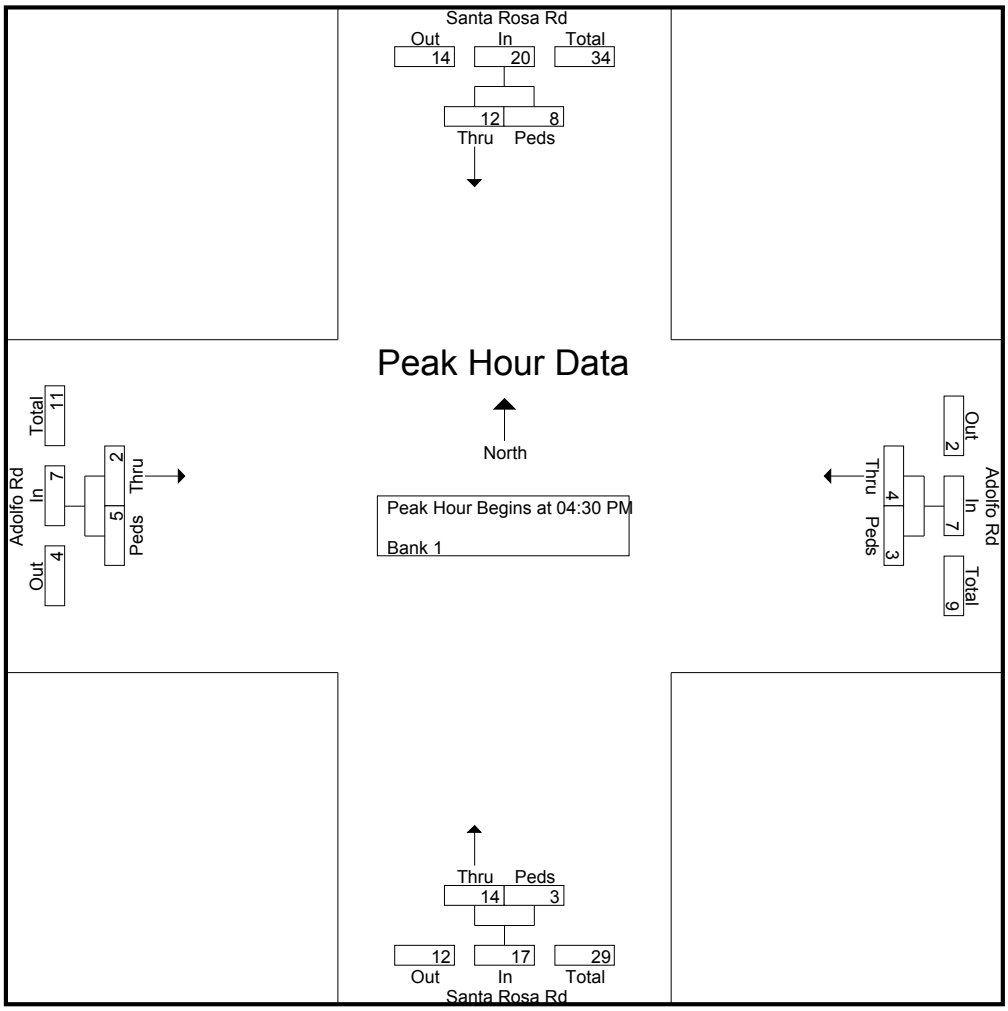
	Santa Rosa Rd Southbound			Adolfo Rd Westbound			Santa Rosa Rd Northbound			Adolfo Rd Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	**7**	**4**	**11**	0	1	1	0	**1**	1	0	0	0	13
04:45 PM	0	0	0	1	0	1	0	1	1	**1**	0	1	3
05:00 PM	2	3	5	1	0	1	**13**	0	**13**	0	0	0	**19**
05:15 PM	3	1	4	**2**	**2**	**4**	1	1	2	1	**5**	**6**	16
Total Volume	12	8	20	4	3	7	14	3	17	2	5	7	51
% App. Total	60	40		57.1	42.9		82.4	17.6		28.6	71.4		
PHF	.429	.500	.455	.500	.375	.438	.269	.750	.327	.500	.250	.292	.671



CITY TRAFFIC COUNTERS

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File Name : srosalosp
Site Code : 00000000
Start Date : 4/10/2014
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Groups Printed- Unshifted

	Santa Rosa Rd Southbound			Los Pueblos Dr Westbound			Santa Rosa Rd Northbound			Los Pueblos Dr Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	20	207	1	10	1	11	3	124	10	3	2	18	410
07:15 AM	21	310	0	11	1	13	2	150	11	4	1	17	541
07:30 AM	19	389	1	18	1	19	9	142	12	7	3	29	649
07:45 AM	33	396	0	18	4	31	5	158	11	2	8	23	689
Total	93	1302	2	57	7	74	19	574	44	16	14	87	2289
08:00 AM	50	327	0	14	2	20	3	158	7	2	3	17	603
08:15 AM	36	291	3	17	1	18	6	175	9	1	5	9	571
08:30 AM	14	315	1	20	2	21	2	174	8	2	2	7	568
08:45 AM	19	269	1	24	3	14	8	133	10	3	3	13	500
Total	119	1202	5	75	8	73	19	640	34	8	13	46	2242
04:00 PM	15	236	4	17	1	16	16	263	17	2	1	11	599
04:15 PM	29	220	8	17	0	20	16	276	19	0	2	7	614
04:30 PM	19	240	4	25	7	26	16	304	15	0	4	11	671
04:45 PM	13	222	1	19	3	22	10	352	16	3	1	7	669
Total	76	918	17	78	11	84	58	1195	67	5	8	36	2553
05:00 PM	12	216	2	19	4	43	23	334	15	3	4	8	683
05:15 PM	14	241	1	11	5	20	19	299	20	2	4	6	642
05:30 PM	20	248	8	16	1	21	19	292	15	2	3	7	652
05:45 PM	13	202	4	22	1	21	17	290	20	1	3	4	598
Total	59	907	15	68	11	105	78	1215	70	8	14	25	2575
Grand Total	347	4329	39	278	37	336	174	3624	215	37	49	194	9659
Apprch %	7.4	91.8	0.8	42.7	5.7	51.6	4.3	90.3	5.4	13.2	17.5	69.3	
Total %	3.6	44.8	0.4	2.9	0.4	3.5	1.8	37.5	2.2	0.4	0.5	2	

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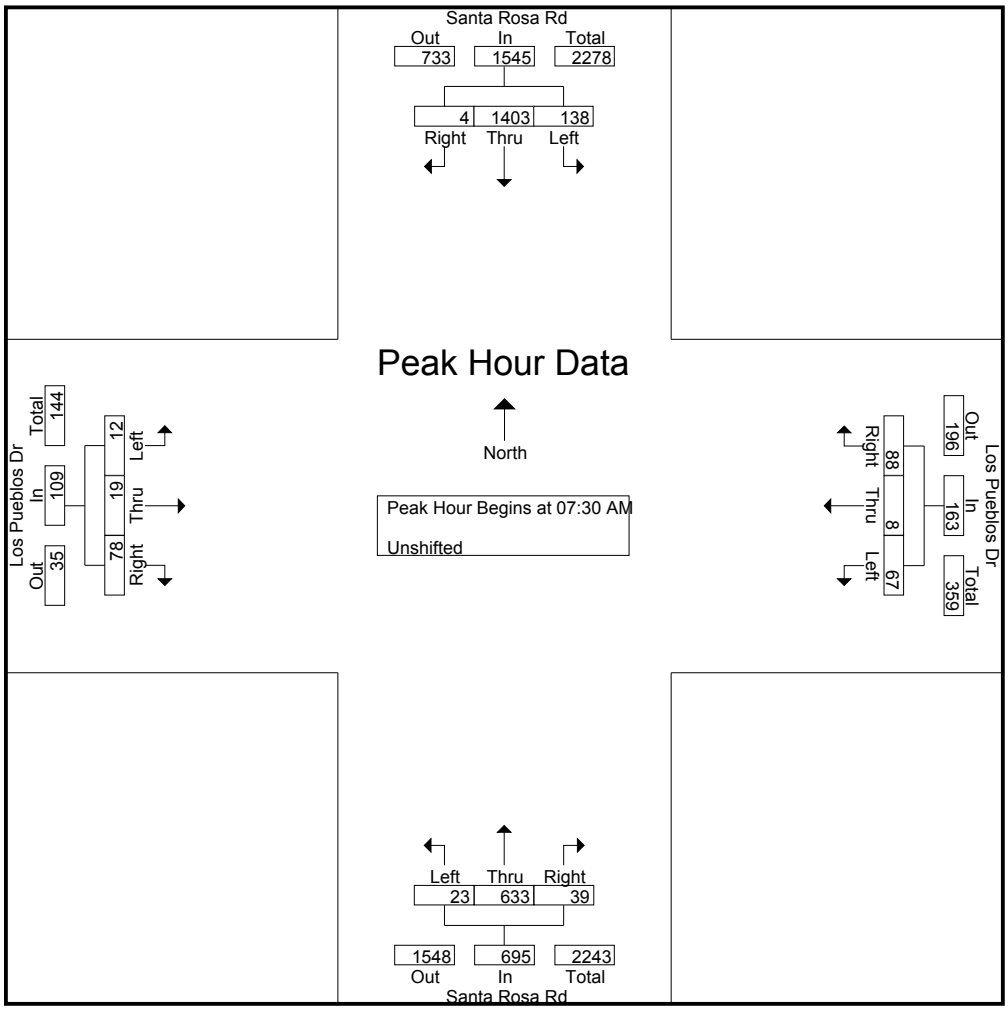
	Santa Rosa Rd Southbound				Los Pueblos Dr Westbound				Santa Rosa Rd Northbound				Los Pueblos Dr Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	19	389	1	409	**18**	1	19	38	**9**	142	**12**	163	**7**	3	**29**	**39**	649
07:45 AM	33	**396**	0	**429**	18	**4**	**31**	**53**	5	158	11	174	2	**8**	23	33	**689**
08:00 AM	**50**	327	0	377	14	2	20	36	3	158	7	168	2	3	17	22	603
08:15 AM	36	291	**3**	330	17	1	18	36	6	**175**	9	**190**	1	5	9	15	571
Total Volume	138	1403	4	1545	67	8	88	163	23	633	39	695	12	19	78	109	2512
% App. Total	8.9	90.8	0.3		41.1	4.9	54		3.3	91.1	5.6		11	17.4	71.6		
PHF	.690	.886	.333	.900	.931	.500	.710	.769	.639	.904	.813	.914	.429	.594	.672	.699	.911



CITY TRAFFIC COUNTERS

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Start Date : 4/10/2014
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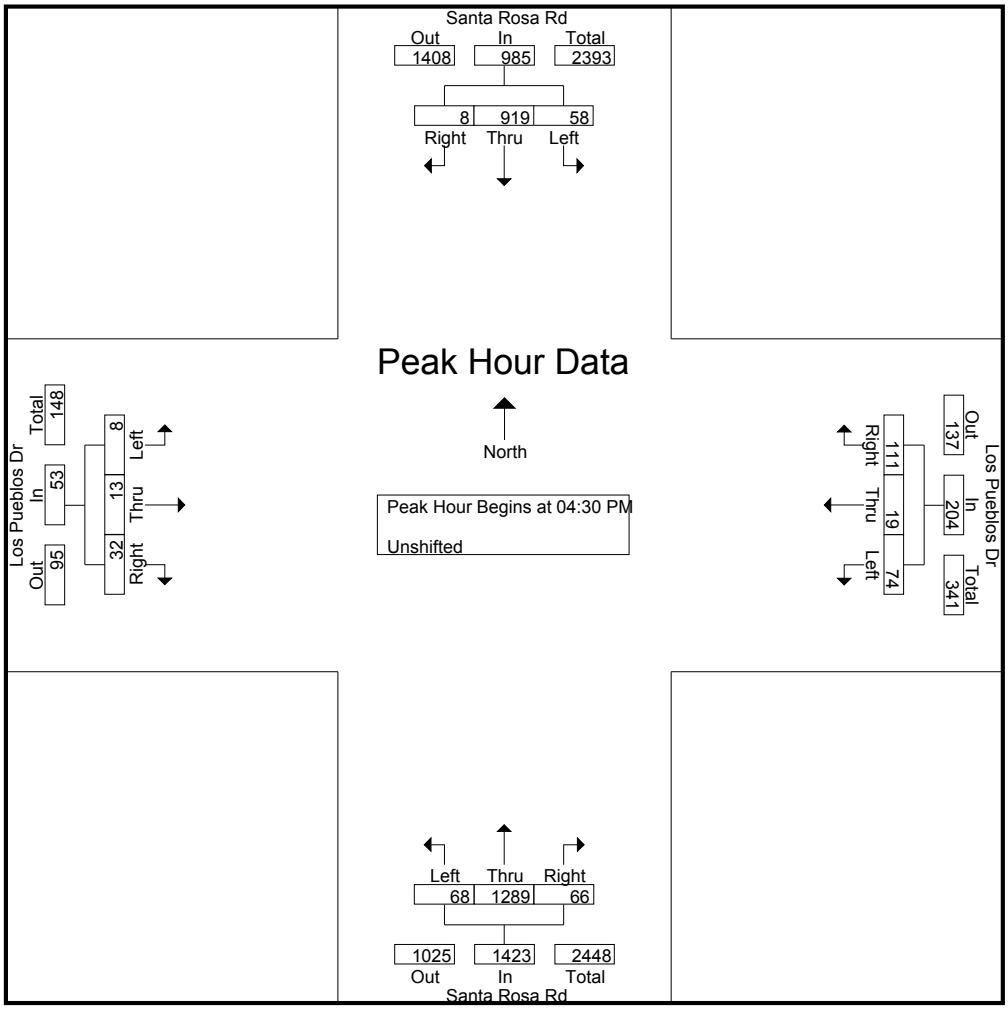
	Santa Rosa Rd Southbound				Los Pueblos Dr Westbound				Santa Rosa Rd Northbound				Los Pueblos Dr Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	**19**	240	**4**	**263**	**25**	**7**	26	58	16	304	15	335	0	**4**	**11**	**15**	671
04:45 PM	13	222	1	236	19	3	22	44	10	**352**	16	**378**	**3**	1	7	11	669
05:00 PM	12	216	2	230	19	4	**43**	**66**	**23**	334	15	372	3	4	8	15	**683**
05:15 PM	14	**241**	1	256	11	5	20	36	19	299	**20**	338	2	4	6	12	642
Total Volume	58	919	8	985	74	19	111	204	68	1289	66	1423	8	13	32	53	2665
% App. Total	5.9	93.3	0.8		36.3	9.3	54.4		4.8	90.6	4.6		15.1	24.5	60.4		
PHF	.763	.953	.500	.936	.740	.679	.645	.773	.739	.915	.825	.941	.667	.813	.727	.883	.975



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : srosalosp_BP
Site Code : 00000000
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Groups Printed- Bank 1

	Santa Rosa Rd Southbound		Los Pueblos Dr Westbound		Santa Rosa Rd Northbound		Los Pueblos Dr Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:15 AM	0	1	0	1	0	0	0	0	2
07:30 AM	0	0	1	1	0	0	0	0	2
07:45 AM	0	1	0	1	2	0	0	0	4
Total	0	2	1	3	2	0	0	0	8
08:00 AM	1	0	1	1	0	0	0	0	3
08:15 AM	0	1	1	0	0	0	0	0	2
08:30 AM	0	1	0	0	0	0	0	0	1
Total	1	2	2	1	0	0	0	0	6
04:00 PM	1	1	0	1	0	0	0	0	3
04:15 PM	0	1	0	2	0	0	0	0	3
04:30 PM	2	0	1	0	0	0	0	0	3
04:45 PM	0	0	1	0	0	0	0	0	1
Total	3	2	2	3	0	0	0	0	10
05:00 PM	0	0	0	0	0	0	1	1	2
05:15 PM	0	0	1	0	0	0	1	4	6
05:30 PM	0	0	0	2	0	0	1	0	3
05:45 PM	0	1	2	3	0	0	0	0	6
Total	0	1	3	5	0	0	3	5	17
Grand Total	4	7	8	12	2	0	3	5	41
Apprch %	36.4	63.6	40	60	100	0	37.5	62.5	
Total %	9.8	17.1	19.5	29.3	4.9	0	7.3	12.2	

CITY TRAFFIC COUNTERS

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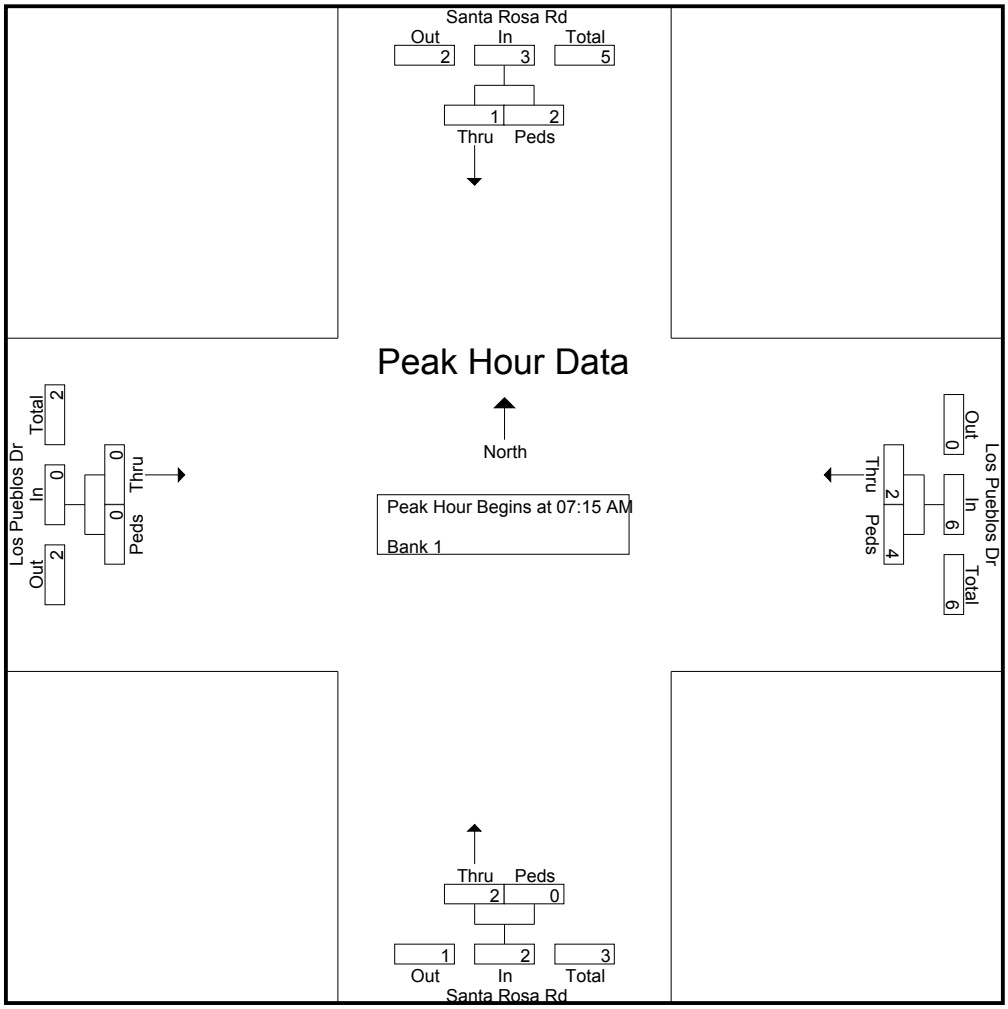
	Santa Rosa Rd Southbound			Los Pueblos Dr Westbound			Santa Rosa Rd Northbound			Los Pueblos Dr Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	0	**1**	**1**	0	**1**	1	0	0	0	0	0	0	2
07:30 AM	0	0	0	**1**	1	**2**	0	0	0	0	0	0	2
07:45 AM	0	1	1	0	1	1	**2**	0	**2**	0	0	0	**4**
08:00 AM	**1**	0	1	1	1	2	0	0	0	0	0	0	3
Total Volume	1	2	3	2	4	6	2	0	2	0	0	0	11
% App. Total	33.3	66.7		33.3	66.7		100	0		0	0		
PHF	.250	.500	.750	.500	1.00	.750	.250	.000	.250	.000	.000	.000	.688



CITY TRAFFIC COUNTERS

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File Name : srosalosp_BP
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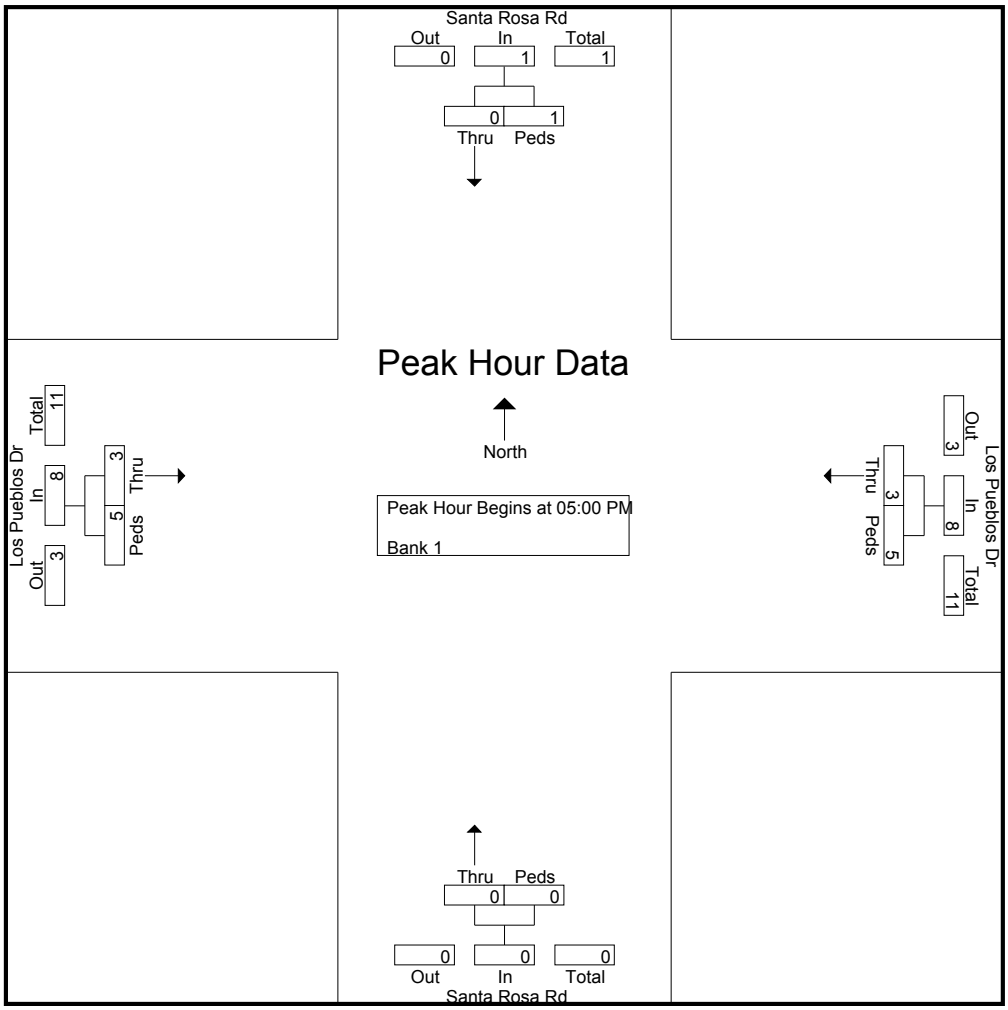
	Santa Rosa Rd Southbound			Los Pueblos Dr Westbound			Santa Rosa Rd Northbound			Los Pueblos Dr Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	0	0	0	0	0	**1**	1	2	2
05:15 PM	0	0	0	1	0	1	0	0	0	1	**4**	**5**	**6**
05:30 PM	0	0	0	0	2	2	0	0	0	1	0	1	3
05:45 PM	0	**1**	**1**	**2**	**3**	**5**	0	0	0	0	0	0	6
Total Volume	0	1	1	3	5	8	0	0	0	3	5	8	17
% App. Total	0	100		37.5	62.5		0	0		37.5	62.5		
PHF	.000	.250	.250	.375	.417	.400	.000	.000	.000	.750	.313	.400	.708



CITY TRAFFIC COUNTERS

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File Name : SRosaVerdugo
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Santa Rosa Rd Southbound			Verdugo Way Westbound			Santa Rosa Rd Northbound			Verdugo Way Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	30	312	0	64	0	7	0	170	77	0	0	0	660
07:15 AM	48	420	0	60	0	14	0	200	85	0	0	0	827
07:30 AM	45	528	0	121	0	16	0	270	99	0	0	0	1079
07:45 AM	43	600	0	120	0	13	0	303	123	0	0	0	1202
Total	166	1860	0	365	0	50	0	943	384	0	0	0	3768
08:00 AM	57	432	0	100	0	8	0	249	105	0	0	0	951
08:15 AM	51	411	0	83	0	15	0	289	93	0	0	0	942
08:30 AM	47	399	0	76	0	13	0	235	61	0	0	0	831
08:45 AM	29	383	0	95	0	13	0	202	49	0	0	0	771
Total	184	1625	0	354	0	49	0	975	308	0	0	0	3495
04:00 PM	39	330	0	92	0	27	0	397	56	0	0	0	941
04:15 PM	30	330	0	102	0	25	0	407	52	0	0	0	946
04:30 PM	27	341	0	103	0	15	0	377	72	0	0	0	935
04:45 PM	26	341	0	161	0	15	0	437	44	0	0	0	1024
Total	122	1342	0	458	0	82	0	1618	224	0	0	0	3846
05:00 PM	37	319	0	111	0	23	0	405	44	0	0	0	939
05:15 PM	42	322	0	107	0	18	0	480	37	0	0	0	1006
05:30 PM	45	330	0	68	0	17	0	436	57	0	0	0	953
05:45 PM	43	277	0	65	0	22	0	451	36	0	0	0	894
Total	167	1248	0	351	0	80	0	1772	174	0	0	0	3792
Grand Total	639	6075	0	1528	0	261	0	5308	1090	0	0	0	14901
Apprch %	9.5	90.5	0	85.4	0	14.6	0	83	17	0	0	0	
Total %	4.3	40.8	0	10.3	0	1.8	0	35.6	7.3	0	0	0	

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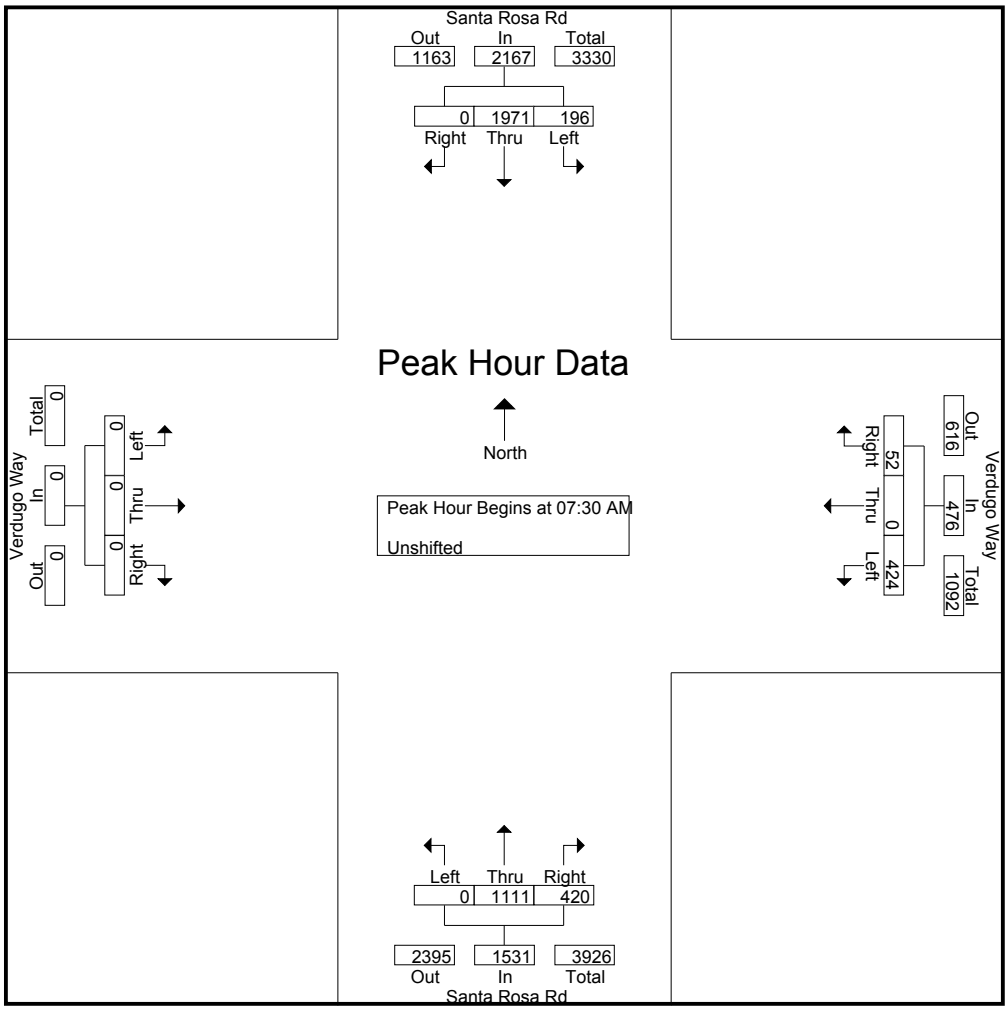
	Santa Rosa Rd Southbound				Verdugo Way Westbound				Santa Rosa Rd Northbound				Verdugo Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	45	528	0	573	**121**	0	**16**	**137**	0	270	99	369	0	0	0	0	1079
07:45 AM	43	**600**	0	**643**	120	0	13	133	0	**303**	**123**	**426**	0	0	0	0	**1202**
08:00 AM	**57**	432	0	489	100	0	8	108	0	249	105	354	0	0	0	0	951
08:15 AM	51	411	0	462	83	0	15	98	0	289	93	382	0	0	0	0	942
Total Volume	196	1971	0	2167	424	0	52	476	0	1111	420	1531	0	0	0	0	4174
% App. Total	9	91	0		89.1	0	10.9		0	72.6	27.4		0	0	0		
PHF	.860	.821	.000	.843	.876	.000	.813	.869	.000	.917	.854	.898	.000	.000	.000	.000	.868



CITY TRAFFIC COUNTERS

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Start Date : 4/10/2014
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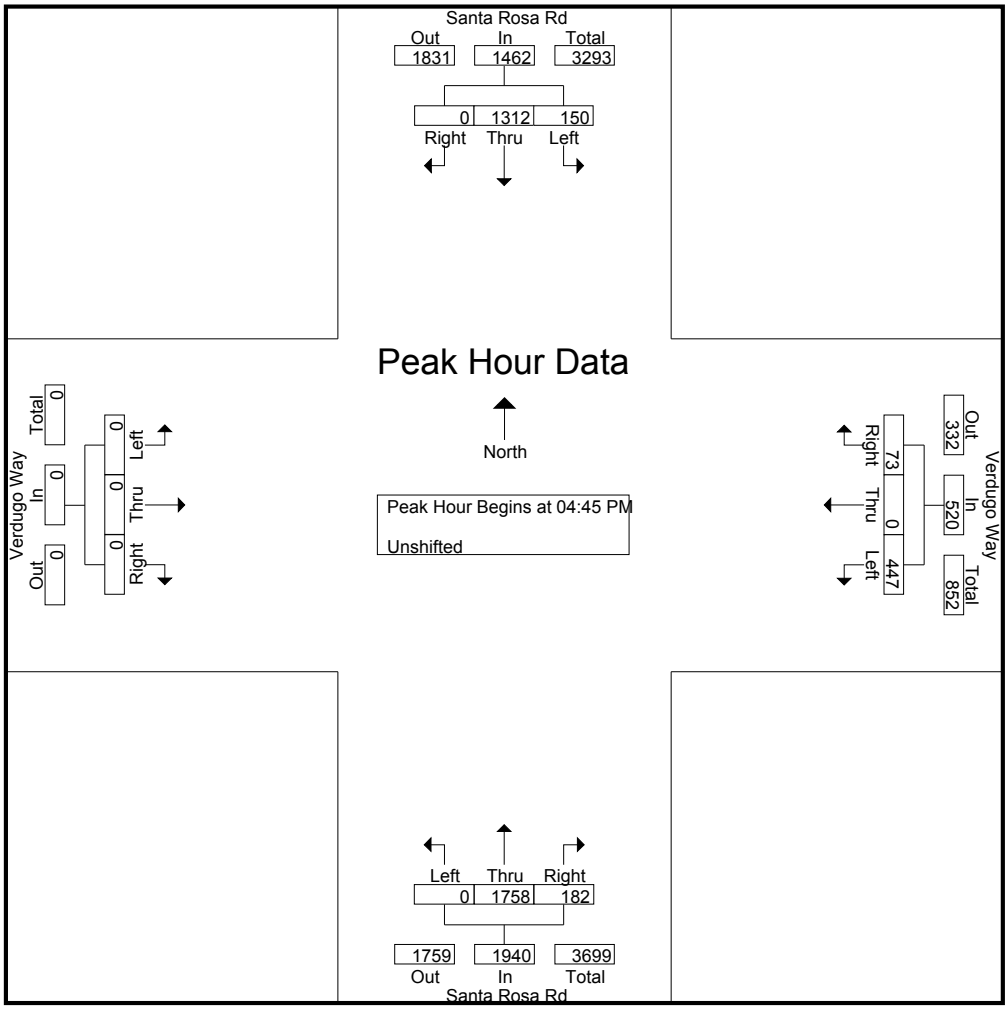
	Santa Rosa Rd Southbound				Verdugo Way Westbound				Santa Rosa Rd Northbound				Verdugo Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	26	**341**	0	367	**161**	0	15	**176**	0	437	44	481	0	0	0	0	**1024**
05:00 PM	37	319	0	356	111	0	**23**	134	0	405	44	449	0	0	0	0	939
05:15 PM	42	322	0	364	107	0	18	125	0	**480**	37	**517**	0	0	0	0	1006
05:30 PM	**45**	330	0	**375**	68	0	17	85	0	436	**57**	493	0	0	0	0	953
Total Volume	150	1312	0	1462	447	0	73	520	0	1758	182	1940	0	0	0	0	3922
% App. Total	10.3	89.7	0		86	0	14		0	90.6	9.4		0	0	0		
PHF	.833	.962	.000	.975	.694	.000	.793	.739	.000	.916	.798	.938	.000	.000	.000	.000	.958



CITY TRAFFIC COUNTERS

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File Name : SRosaVerdugo_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Santa Rosa Rd Southbound		Verdugo Way Westbound		Santa Rosa Rd Northbound		Verdugo Way Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:00 AM	0	0	0	0	0	4	0	2	6
07:15 AM	0	6	0	0	0	1	0	1	8
07:30 AM	0	0	0	0	0	6	0	3	9
07:45 AM	0	0	1	0	0	5	0	0	6
Total	0	6	1	0	0	16	0	6	29
08:00 AM	0	0	0	0	0	2	0	2	4
08:15 AM	0	3	0	0	0	0	0	0	3
08:45 AM	0	0	0	0	0	0	0	1	1
Total	0	3	0	0	0	2	0	3	8
04:00 PM	0	1	0	0	7	1	0	2	11
04:15 PM	0	0	0	0	1	1	2	0	4
04:45 PM	0	0	0	0	0	1	0	0	1
Total	0	1	0	0	8	3	2	2	16
05:15 PM	0	0	0	0	0	0	1	0	1
05:30 PM	0	1	0	0	0	1	1	0	3
05:45 PM	0	0	0	0	0	2	0	0	2
Total	0	1	0	0	0	3	2	0	6
Grand Total	0	11	1	0	8	24	4	11	59
Apprch %	0	100	100	0	25	75	26.7	73.3	
Total %	0	18.6	1.7	0	13.6	40.7	6.8	18.6	

CITY TRAFFIC COUNTERS

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File Name : SRosaVerdugo_BP
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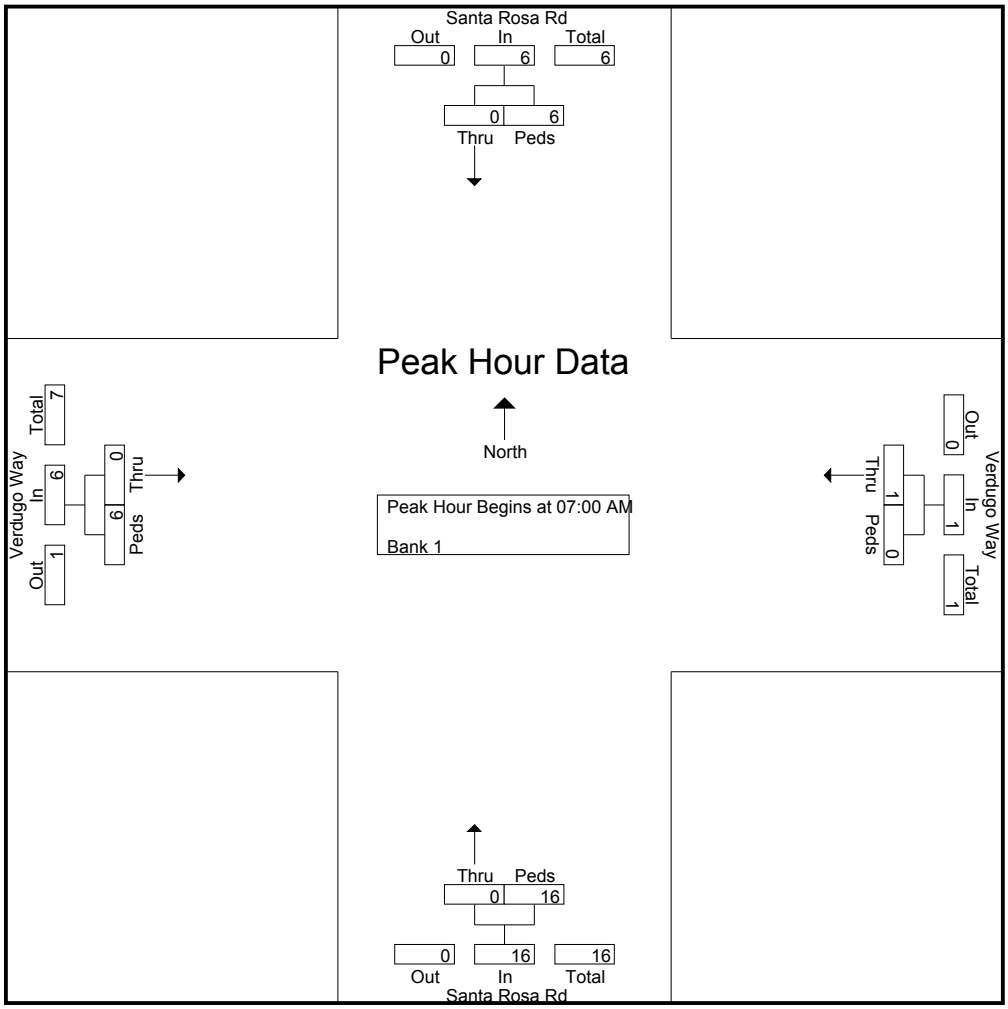
	Santa Rosa Rd Southbound			Verdugo Way Westbound			Santa Rosa Rd Northbound			Verdugo Way Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	0	0	0	0	0	0	0	4	4	0	2	2	6
07:15 AM	0	**6**	**6**	0	0	0	0	1	1	0	1	1	8
07:30 AM	0	0	0	0	0	0	0	**6**	**6**	0	**3**	**3**	**9**
07:45 AM	0	0	0	**1**	0	**1**	0	5	5	0	0	0	6
Total Volume	0	6	6	1	0	1	0	16	16	0	6	6	29
% App. Total	0	100		100	0		0	100		0	100		
PHF	.000	.250	.250	.250	.000	.250	.000	.667	.667	.000	.500	.500	.806



CITY TRAFFIC COUNTERS

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File Name : SRosaVerdugo_BP
Site Code : 00000000
Start Date : 4/10/2014
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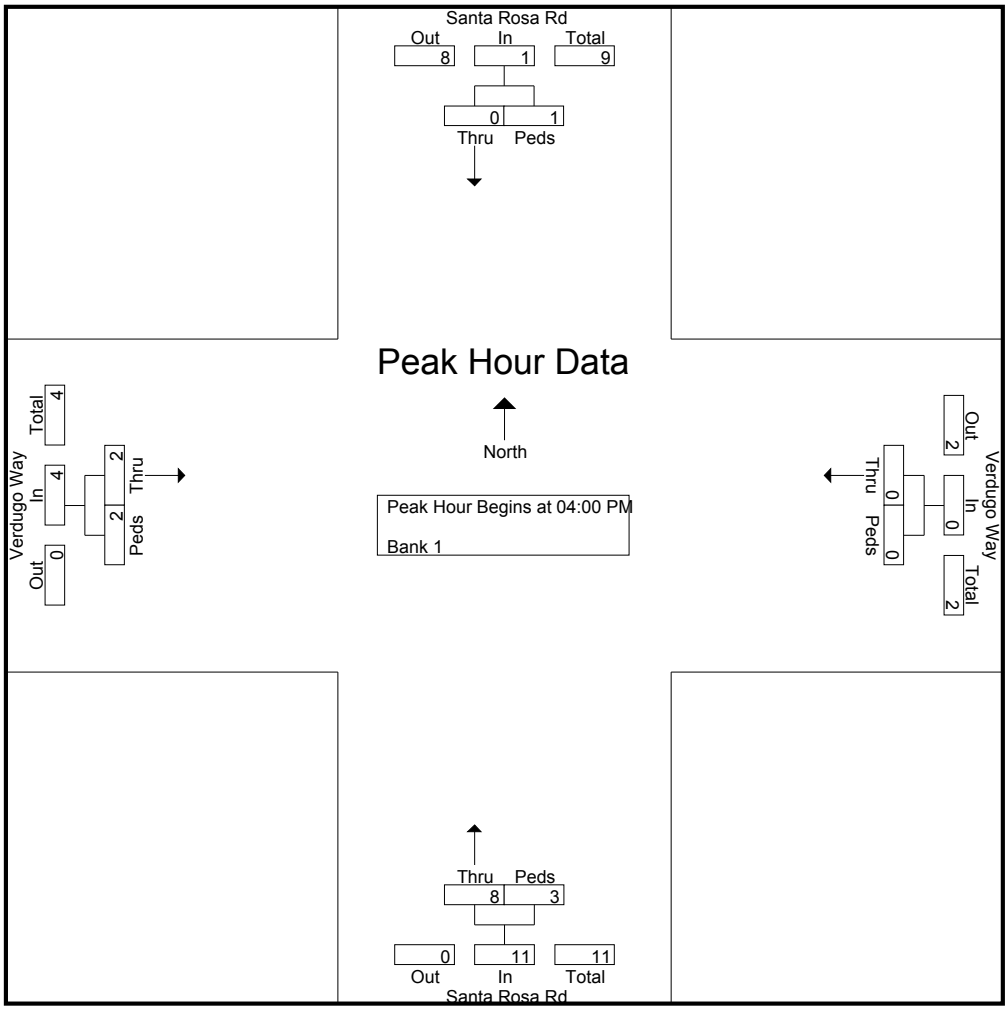
	Santa Rosa Rd Southbound			Verdugo Way Westbound			Santa Rosa Rd Northbound			Verdugo Way Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	**1**	**1**	0	0	0	**7**	**1**	**8**	0	**2**	**2**	**11**
04:15 PM	0	0	0	0	0	0	1	1	2	**2**	0	2	4
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	1	1	0	0	0	1
Total Volume	0	1	1	0	0	0	8	3	11	2	2	4	16
% App. Total	0	100		0	0		72.7	27.3		50	50		
PHF	.000	.250	.250	.000	.000	.000	.286	.750	.344	.250	.250	.500	.364



CITY TRAFFIC COUNTERS

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File Name : VerdugoCaminoRuiz
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Unshifted

	Camino Ruiz Southbound			Verdugo Way Westbound			Camino Ruiz Northbound			Verdugo Way Eastbound			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	4	0	16	0	12	2	0	1	0	11	52	7	105
07:15 AM	8	3	20	0	8	0	0	0	0	9	100	14	162
07:30 AM	2	7	20	0	9	3	1	0	0	8	52	9	111
07:45 AM	9	4	16	1	9	2	2	0	0	15	105	20	183
Total	23	14	72	1	38	7	3	1	0	43	309	50	561
08:00 AM	6	12	16	0	8	0	4	1	0	13	59	18	137
08:15 AM	5	9	18	0	7	2	3	0	1	11	41	22	119
08:30 AM	2	4	12	0	14	2	5	5	1	8	32	19	104
08:45 AM	2	2	9	0	7	1	2	0	1	13	32	9	78
Total	15	27	55	0	36	5	14	6	3	45	164	68	438
04:00 PM	3	2	13	0	41	5	15	3	0	20	25	1	128
04:15 PM	2	4	13	0	37	6	10	5	1	9	20	2	109
04:30 PM	3	2	12	0	45	5	10	3	0	14	15	1	110
04:45 PM	1	1	13	0	93	6	12	3	0	13	15	2	159
Total	9	9	51	0	216	22	47	14	1	56	75	6	506
05:00 PM	2	2	16	0	69	5	26	4	0	11	7	0	142
05:15 PM	4	0	17	0	71	10	11	4	0	13	14	1	145
05:30 PM	2	1	15	0	53	5	5	3	0	15	8	0	107
05:45 PM	0	0	12	0	30	2	7	0	0	13	12	0	76
Total	8	3	60	0	223	22	49	11	0	52	41	1	470
Grand Total	55	53	238	1	513	56	113	32	4	196	589	125	1975
Apprch %	15.9	15.3	68.8	0.2	90	9.8	75.8	21.5	2.7	21.5	64.7	13.7	
Total %	2.8	2.7	12.1	0.1	26	2.8	5.7	1.6	0.2	9.9	29.8	6.3	

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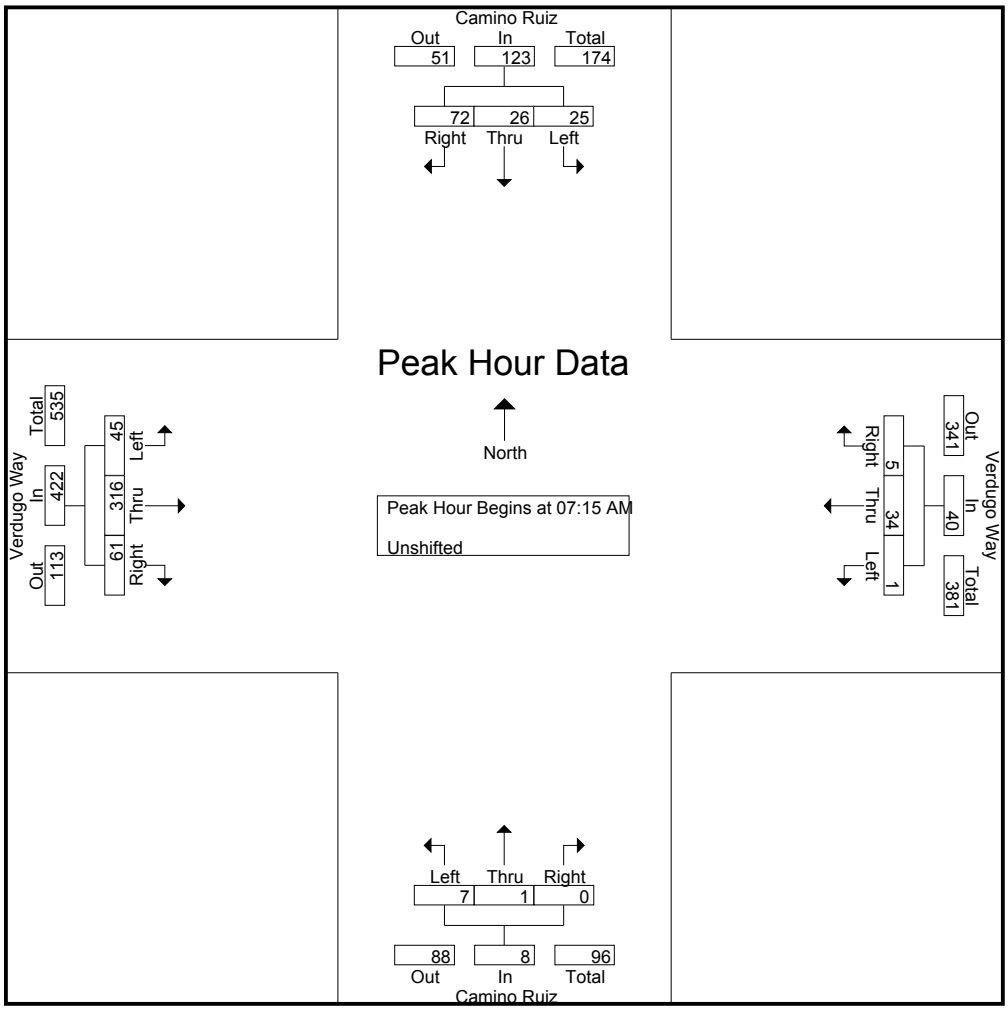
	Camino Ruiz Southbound				Verdugo Way Westbound				Camino Ruiz Northbound				Verdugo Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	8	3	**20**	31	0	8	0	8	0	0	0	0	9	100	14	123	162
07:30 AM	2	7	20	29	0	**9**	**3**	**12**	1	0	0	1	8	52	9	69	111
07:45 AM	**9**	4	16	29	**1**	9	2	12	2	0	0	2	**15**	**105**	**20**	**140**	**183**
08:00 AM	6	**12**	16	**34**	0	8	0	8	**4**	**1**	0	**5**	13	59	18	90	137
Total Volume	25	26	72	123	1	34	5	40	7	1	0	8	45	316	61	422	593
% App. Total	20.3	21.1	58.5		2.5	85	12.5		87.5	12.5	0		10.7	74.9	14.5		
PHF	.694	.542	.900	.904	.250	.944	.417	.833	.438	.250	.000	.400	.750	.752	.763	.754	.810



CITY TRAFFIC COUNTERS

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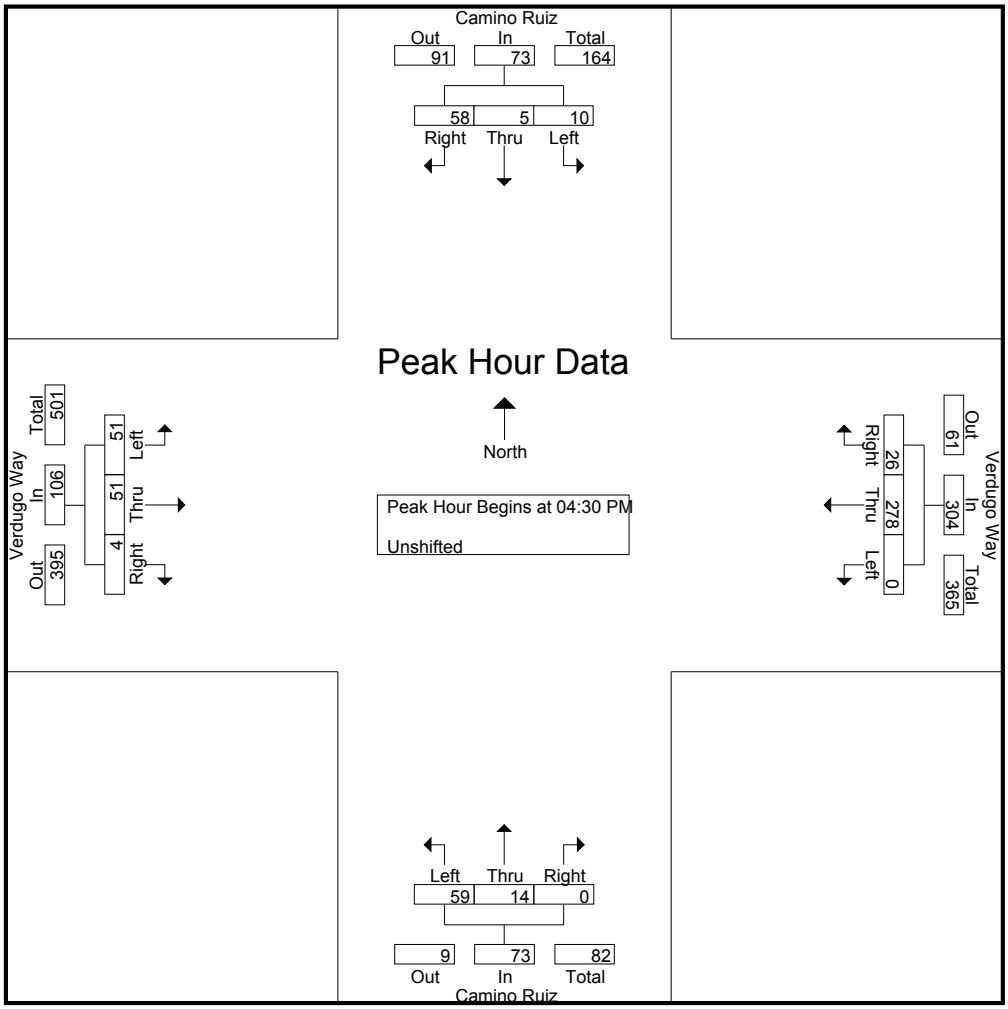
	Camino Ruiz Southbound				Verdugo Way Westbound				Camino Ruiz Northbound				Verdugo Way Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	**2**	12	17	0	45	5	50	10	3	0	13	**14**	**15**	1	**30**	110
04:45 PM	1	1	13	15	0	**93**	6	**99**	12	3	0	15	13	15	**2**	30	**159**
05:00 PM	2	2	16	20	0	69	5	74	**26**	**4**	0	**30**	11	7	0	18	142
05:15 PM	**4**	0	**17**	**21**	0	71	**10**	81	11	4	0	15	13	14	1	28	145
Total Volume	10	5	58	73	0	278	26	304	59	14	0	73	51	51	4	106	556
% App. Total	13.7	6.8	79.5		0	91.4	8.6		80.8	19.2	0		48.1	48.1	3.8		
PHF	.625	.625	.853	.869	.000	.747	.650	.768	.567	.875	.000	.608	.911	.850	.500	.883	.874



CITY TRAFFIC COUNTERS

626.991.7522

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File Name : VerdugoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 1

Groups Printed- Bank 1

	Camino Ruiz Southbound		Verdugo Way Westbound		Camino Ruiz Northbound		Verdugo Way Eastbound		
Start Time	Thru	Peds	Thru	Peds	Thru	Peds	Thru	Peds	Int. Total
07:15 AM	0	0	0	0	0	1	0	0	1
07:30 AM	0	0	0	0	0	1	0	0	1
07:45 AM	0	0	0	1	0	0	0	1	2
Total	0	0	0	1	0	2	0	1	4
08:00 AM	0	2	1	0	0	1	0	0	4
08:15 AM	0	0	0	2	0	2	0	0	4
08:30 AM	0	3	0	2	0	0	0	0	5
08:45 AM	0	1	0	1	0	0	0	0	2
Total	0	6	1	5	0	3	0	0	15
04:00 PM	0	0	0	1	0	0	0	0	1
04:15 PM	0	0	1	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	2	0	0	2
Total	0	0	1	1	0	2	1	0	5
05:15 PM	3	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	5	0	1	0	6
Total	3	0	0	0	5	0	1	0	9
Grand Total	3	6	2	7	5	7	2	1	33
Apprch %	33.3	66.7	22.2	77.8	41.7	58.3	66.7	33.3	
Total %	9.1	18.2	6.1	21.2	15.2	21.2	6.1	3	

CITY TRAFFIC COUNTERS

626.991.7522

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File Name : VerdugoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
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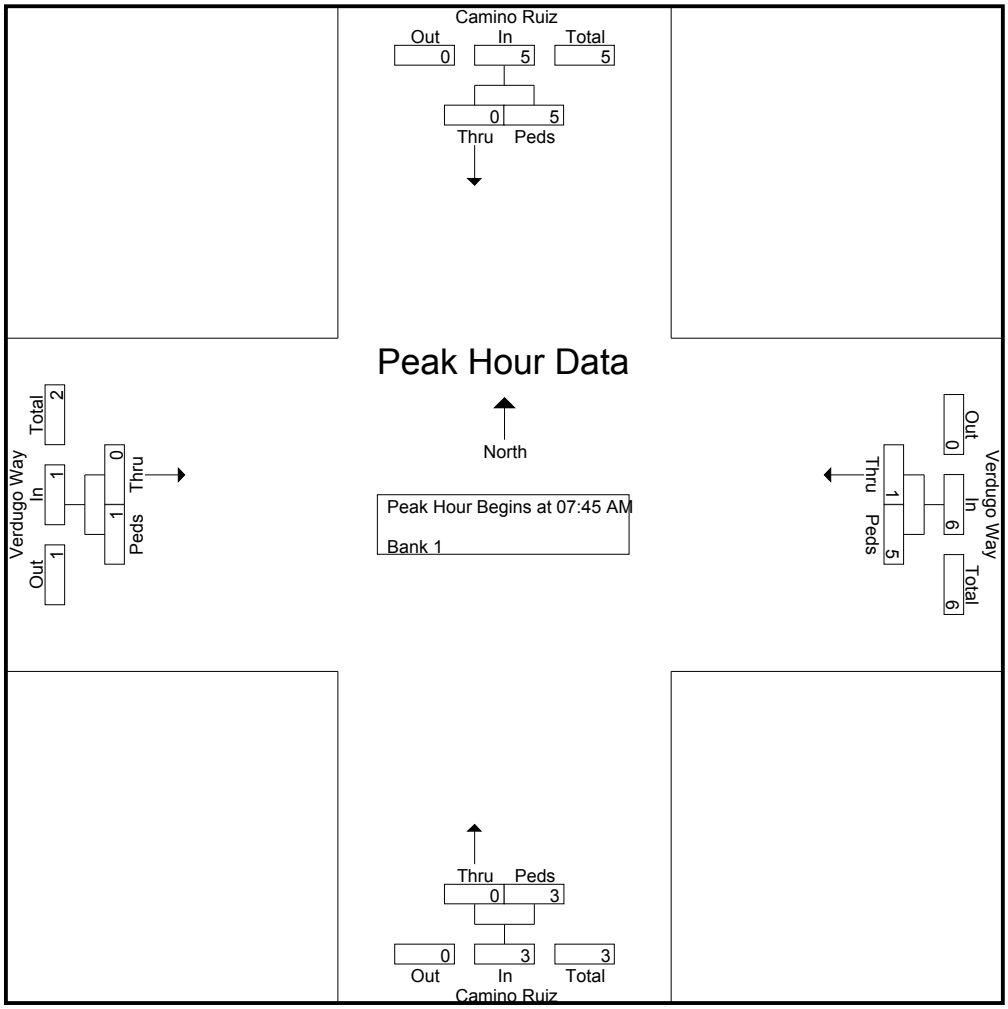
	Camino Ruiz Southbound			Verdugo Way Westbound			Camino Ruiz Northbound			Verdugo Way Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	0	0	0	0	1	1	0	0	0	0	**1**	**1**	2
08:00 AM	0	2	2	**1**	0	1	0	1	1	0	0	0	4
08:15 AM	0	0	0	0	**2**	**2**	0	**2**	**2**	0	0	0	4
08:30 AM	0	**3**	**3**	0	2	2	0	0	0	0	0	0	**5**
Total Volume	0	5	5	1	5	6	0	3	3	0	1	1	15
% App. Total	0	100		16.7	83.3		0	100		0	100		
PHF	.000	.417	.417	.250	.625	.750	.000	.375	.375	.000	.250	.250	.750



CITY TRAFFIC COUNTERS

626.991.7522

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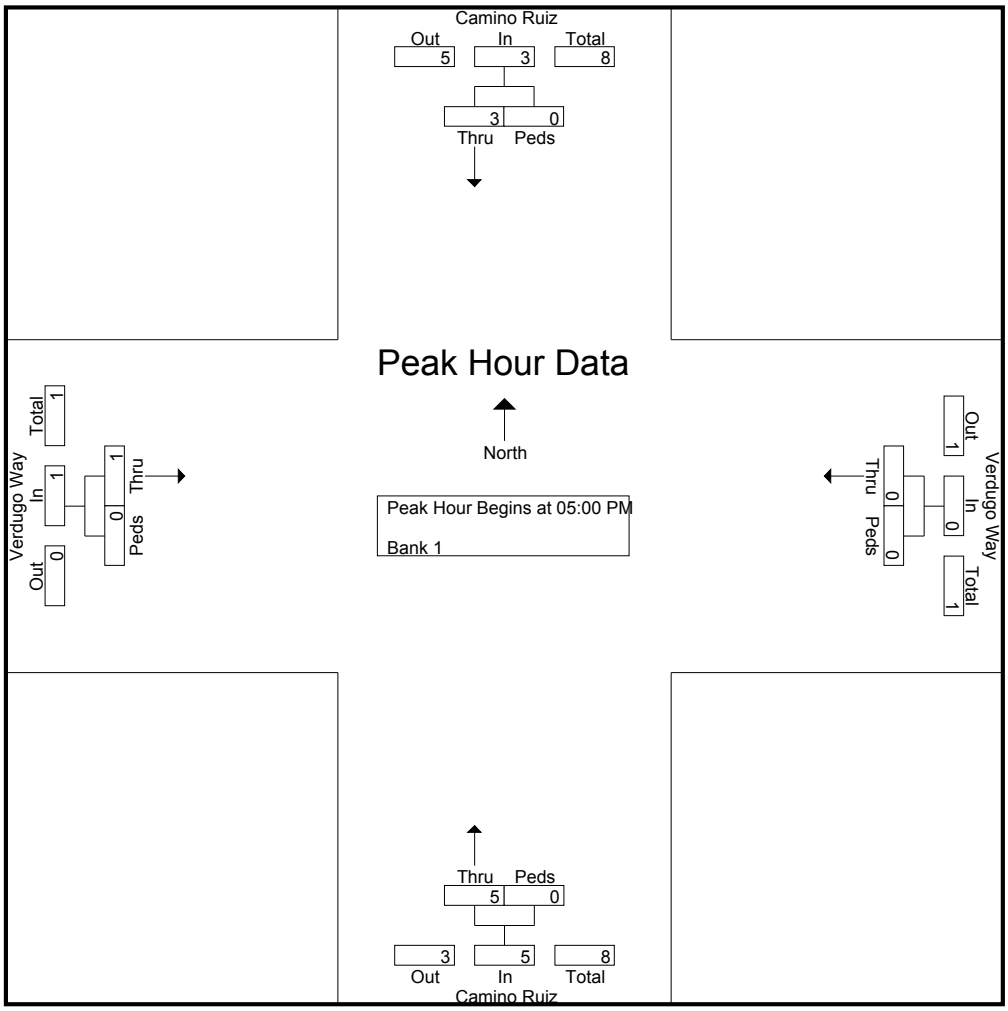
File Name : VerdugoCaminoRuiz_BP
Site Code : 00000000
Start Date : 4/10/2014
Page No : 3

	Camino Ruiz Southbound			Verdugo Way Westbound			Camino Ruiz Northbound			Verdugo Way Eastbound			
Start Time	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	**3**	0	**3**	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	**5**	0	**5**	**1**	0	**1**	**6**
Total Volume	3	0	3	0	0	0	5	0	5	1	0	1	9
% App. Total	100	0		0	0		100	0		100	0		
PHF	.250	.000	.250	.000	.000	.000	.250	.000	.250	.250	.000	.250	.375



CITY TRAFFIC COUNTERS
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Adlofo Rd
W/O Camino Ruiz

Start Time	10-Apr-14 Thu	East Morning	East Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		7	83		
12:15		3	77		
12:30		2	75		
12:45		0	78	12	313
01:00		2	69		
01:15		1	69		
01:30		1	63		
01:45		3	38	7	239
02:00		3	70		
02:15		1	71		
02:30		0	43		
02:45		0	59	4	243
03:00		1	65		
03:15		0	71		
03:30		1	66		
03:45		1	65	3	267
04:00		0	94		
04:15		2	93		
04:30		2	81		
04:45		10	80	14	348
05:00		5	76		
05:15		8	85		
05:30		13	68		
05:45		28	79	54	308
06:00		15	79		
06:15		18	75		
06:30		25	62		
06:45		39	56	97	272
07:00		44	43		
07:15		56	49		
07:30		83	37		
07:45		103	45	286	174
08:00		109	44		
08:15		80	39		
08:30		65	28		
08:45		51	31	305	142
09:00		44	35		
09:15		38	35		
09:30		52	25		
09:45		44	29	178	124
10:00		45	15		
10:15		49	14		
10:30		38	8		
10:45		34	8	166	45
11:00		36	6		
11:15		51	10		
11:30		56	3		
11:45		62	3	205	22
Total		1331	2497		
Percent		34.8%	65.2%		
Grand Total		1331	2497		
Percent		34.8%	65.2%		
ADT		ADT 3,828		AADT 3,828	

CITY TRAFFIC COUNTERS
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Camino Ruiz
S/O Adolfo Rd

Start Time	10-Apr-14 Thu	North Morning	North Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		2	39		
12:15		3	41		
12:30		1	35		
12:45		0	28	6	143
01:00		0	38		
01:15		1	26		
01:30		0	21		
01:45		1	20	2	105
02:00		0	14		
02:15		0	22		
02:30		0	21		
02:45		0	26	0	83
03:00		0	20		
03:15		0	27		
03:30		0	25		
03:45		0	28	0	100
04:00		0	27		
04:15		0	28		
04:30		0	29		
04:45		0	25	0	109
05:00		0	29		
05:15		1	31		
05:30		0	32		
05:45		2	25	3	117
06:00		6	31		
06:15		2	26		
06:30		8	23		
06:45		5	22	21	102
07:00		11	14		
07:15		14	18		
07:30		15	16		
07:45		9	22	49	70
08:00		13	14		
08:15		12	16		
08:30		14	11		
08:45		15	6	54	47
09:00		13	6		
09:15		7	8		
09:30		20	5		
09:45		11	9	51	28
10:00		22	5		
10:15		19	5		
10:30		22	3		
10:45		20	4	83	17
11:00		17	3		
11:15		16	1		
11:30		12	1		
11:45		27	0	72	5
Total		341	926		
Percent		26.9%	73.1%		
Grand Total		341	926		
Percent		26.9%	73.1%		
ADT		ADT 1,267		AADT 1,267	

CITY TRAFFIC COUNTERS
_626.991.7522_
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Camino Ruiz
N/O Adolfo Rd

Start Time	10-Apr-14 Thu	South Morning	South Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		0	8		
12:15		0	5		
12:30		0	4		
12:45		1	3	1	20
01:00		0	11		
01:15		0	6		
01:30		0	3		
01:45		0	10	0	30
02:00		0	6		
02:15		0	5		
02:30		0	8		
02:45		0	3	0	22
03:00		0	4		
03:15		0	4		
03:30		0	5		
03:45		1	9	1	22
04:00		0	3		
04:15		0	2		
04:30		1	4		
04:45		2	7	3	16
05:00		1	7		
05:15		2	4		
05:30		5	4		
05:45		1	7	9	22
06:00		1	4		
06:15		2	11		
06:30		6	4		
06:45		6	3	15	22
07:00		6	5		
07:15		9	9		
07:30		11	2		
07:45		17	3	43	19
08:00		10	5		
08:15		8	1		
08:30		7	2		
08:45		10	4	35	12
09:00		8	5		
09:15		6	2		
09:30		8	3		
09:45		3	2	25	12
10:00		3	3		
10:15		2	1		
10:30		4	2		
10:45		4	0	13	6
11:00		8	2		
11:15		0	0		
11:30		5	1		
11:45		6	1	19	4
Total		164	207		
Percent		44.2%	55.8%		
Grand Total		164	207		
Percent		44.2%	55.8%		
ADT		ADT 371		AADT 371	

CITY TRAFFIC COUNTERS
_626.991.7522_
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Adolfo Rd
E/O Camino Ruiz

Start Time	10-Apr-14 Thu	West Morning	West Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		1	51		
12:15		1	64		
12:30		1	64		
12:45		2	48	5	227
01:00		0	55		
01:15		3	43		
01:30		1	61		
01:45		0	40	4	199
02:00		2	36		
02:15		1	42		
02:30		1	72		
02:45		0	58	4	208
03:00		6	59		
03:15		1	57		
03:30		2	68		
03:45		0	57	9	241
04:00		0	54		
04:15		4	71		
04:30		2	101		
04:45		5	74	11	300
05:00		6	75		
05:15		12	84		
05:30		11	54		
05:45		15	61	44	274
06:00		9	45		
06:15		32	43		
06:30		40	69		
06:45		48	50	129	207
07:00		52	30		
07:15		57	30		
07:30		95	26		
07:45		89	26	293	112
08:00		89	13		
08:15		73	18		
08:30		58	7		
08:45		72	6	292	44
09:00		42	12		
09:15		50	13		
09:30		46	10		
09:45		40	10	178	45
10:00		55	7		
10:15		44	1		
10:30		47	5		
10:45		44	3	190	16
11:00		53	1		
11:15		41	6		
11:30		73	5		
11:45		64	0	231	12
Total		1390	1885		
Percent		42.4%	57.6%		
Grand Total		1390	1885		
Percent		42.4%	57.6%		
ADT		ADT 3,275		AADT 3,275	

CITY TRAFFIC COUNTERS
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Verdugo Way
W/O Camino Ruiz

Start Time	10-Apr-14 Thu	East Morning	East Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		0	49		
12:15		1	60		
12:30		2	57		
12:45		1	50	4	216
01:00		0	72		
01:15		2	75		
01:30		2	63		
01:45		1	53	5	263
02:00		0	48		
02:15		0	50		
02:30		1	35		
02:45		0	41	1	174
03:00		0	46		
03:15		0	40		
03:30		1	33		
03:45		0	43	1	162
04:00		0	46		
04:15		0	32		
04:30		2	31		
04:45		2	29	4	138
05:00		2	20		
05:15		6	28		
05:30		11	23		
05:45		15	27	34	98
06:00		37	25		
06:15		19	31		
06:30		40	29		
06:45		31	23	127	108
07:00		67	25		
07:15		124	18		
07:30		71	13		
07:45		149	21	411	77
08:00		94	12		
08:15		78	11		
08:30		64	8		
08:45		51	9	287	40
09:00		43	11		
09:15		41	7		
09:30		43	4		
09:45		44	11	171	33
10:00		46	12		
10:15		34	7		
10:30		38	7		
10:45		43	3	161	29
11:00		30	3		
11:15		29	1		
11:30		32	2		
11:45		34	1	125	7
Total		1331	1345		
Percent		49.7%	50.3%		
Grand Total		1331	1345		
Percent		49.7%	50.3%		
ADT		ADT 2,676		AADT 2,676	

CITY TRAFFIC COUNTERS
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Camino Ruiz
S/O Verdugo Way

Start Time	10-Apr-14 Thu	North Morning	North Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		0	16		
12:15		0	12		
12:30		0	20		
12:45		0	13	0	61
01:00		0	10		
01:15		0	8		
01:30		0	6		
01:45		0	17	0	41
02:00		0	10		
02:15		0	10		
02:30		0	38		
02:45		0	13	0	71
03:00		0	35		
03:15		0	26		
03:30		0	10		
03:45		0	7	0	78
04:00		0	17		
04:15		0	17		
04:30		0	14		
04:45		0	14	0	62
05:00		0	29		
05:15		0	16		
05:30		0	8		
05:45		0	7	0	60
06:00		2	7		
06:15		2	6		
06:30		4	5		
06:45		3	6	11	24
07:00		1	2		
07:15		0	6		
07:30		1	3		
07:45		2	2	4	13
08:00		5	0		
08:15		4	2		
08:30		10	1		
08:45		4	2	23	5
09:00		8	1		
09:15		4	1		
09:30		4	1		
09:45		16	3	32	6
10:00		8	0		
10:15		5	0		
10:30		11	1		
10:45		20	16	44	17
11:00		5	5		
11:15		8	1		
11:30		13	12		
11:45		20	1	46	19
Total		160	457		
Percent		25.9%	74.1%		
Grand Total		160	457		
Percent		25.9%	74.1%		
ADT		ADT 617		AADT 617	

CITY TRAFFIC COUNTERS
_626.991.7522_
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Camino Ruiz
N/O Verdugo Way

Start Time	10-Apr-14 Thu	South Morning	South Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		1	38		
12:15		1	28		
12:30		1	35		
12:45		0	28	3	129
01:00		0	33		
01:15		0	24		
01:30		0	18		
01:45		2	14	2	89
02:00		0	21		
02:15		1	19		
02:30		0	24		
02:45		0	15	1	79
03:00		0	15		
03:15		0	21		
03:30		1	14		
03:45		0	16	1	66
04:00		0	18		
04:15		1	18		
04:30		1	17		
04:45		1	15	3	68
05:00		0	20		
05:15		3	20		
05:30		4	18		
05:45		6	13	13	71
06:00		2	20		
06:15		9	18		
06:30		10	9		
06:45		16	14	37	61
07:00		22	12		
07:15		30	6		
07:30		30	11		
07:45		29	9	111	38
08:00		33	2		
08:15		33	7		
08:30		18	2		
08:45		16	2	100	13
09:00		18	2		
09:15		17	3		
09:30		20	6		
09:45		17	5	72	16
10:00		13	5		
10:15		14	0		
10:30		24	1		
10:45		18	0	69	6
11:00		20	0		
11:15		15	1		
11:30		20	0		
11:45		27	0	82	1
Total		494	637		
Percent		43.7%	56.3%		
Grand Total		494	637		
Percent		43.7%	56.3%		
ADT		ADT 1,131		AADT 1,131	

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Verdugo Way
E/O Camino Ruiz

Start Time	10-Apr-14 Thu	West Morning	West Afternoon	Hour Totals Morning	Hour Totals Afternoon
12:00		1	20		
12:15		2	25		
12:30		0	16		
12:45		0	24	3	85
01:00		0	22		
01:15		0	31		
01:30		1	19		
01:45		0	28	1	100
02:00		0	24		
02:15		0	20		
02:30		0	24		
02:45		1	23	1	91
03:00		0	35		
03:15		0	36		
03:30		0	41		
03:45		0	37	0	149
04:00		0	47		
04:15		0	42		
04:30		0	49		
04:45		0	100	0	238
05:00		2	74		
05:15		1	81		
05:30		4	58		
05:45		3	33	10	246
06:00		7	27		
06:15		8	29		
06:30		10	25		
06:45		13	19	38	100
07:00		15	18		
07:15		7	16		
07:30		13	19		
07:45		11	12	46	65
08:00		8	11		
08:15		10	14		
08:30		15	10		
08:45		9	9	42	44
09:00		11	10		
09:15		14	7		
09:30		10	5		
09:45		17	5	52	27
10:00		15	4		
10:15		21	6		
10:30		19	2		
10:45		22	3	77	15
11:00		20	5		
11:15		18	2		
11:30		16	2		
11:45		24	1	78	10
Total		348	1170		
Percent		22.9%	77.1%		
Grand Total		348	1170		
Percent		22.9%	77.1%		
ADT		ADT 1,518		AADT 1,518	

Appendix B

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 1
NORTH/SOUTH: Pleasant Valley Rd
EAST/WEST: Pancho Rd

SCENARIO: Existing Conditions

			Existing			
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.00	1,600	10	60	0.05	0.05 *
NBT	2.00	3,200	798	772	0.28 *	0.24
NBR	0.0	0	106	8	0.00	0.00
SBL	2.0	3,200	330	38	0.10 *	0.05
SBT	2.0	3,200	570	968	0.18	0.31 *
SBR	0.0	0	7	12	0.00	0.00
EBL	1.0	1,600	18	12	0.05 *	0.05 *
EBT	1.0	1,600	2	2	0.05	0.05
EBR	0.0	0	31	31	0.00	0.00
WBL	0.0	0	70	445	0.00	0.00
WBT	2.0	3,200	1	7	0.05 *	0.14 *
WBR	1.0 0	1,600	26	247	0.00	0.00
N/S Critical Movements					0.38	0.36
E/W Critical Movements					0.10	0.19
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.58	0.65
Level of Service (LOS)					A	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 2
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: EB 101 Ramps/Calle Cuesta

SCENARIO: Existing Conditions

	Existing					
Move-ment	Lane	Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	0.0	0	0	0	0.00 *	0.00 *
NBT	3.0	4,800	610	712	0.13	0.15
NBR	0.0	0	3	4	0.00	0.00
SBL	1.0	1,600	4	7	0.05	0.05
SBT	2.0	3,200	827	890	0.26 *	0.28 *
SBR	1.0 0	1,600	776	556	0.00	0.00
EBL	1.90	3,040	712	870	0.23 *	0.29 *
EBT	0.10	160	0	3	0.00	0.05
EBR	1.0 0	1,600	147	95	0.00	0.00
WBL	1.0	1,600	1	7	0.05	0.05
WBT	1.0	1,600	0	0	0.05 *	0.05 *
WBR	0.0	0	6	19	0.00	0.00
N/S Critical Movements					0.26	0.28
E/W Critical Movements					0.28	0.34
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.64	0.72
Level of Service (LOS)					B	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 3
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: WB 101 Ramps

SCENARIO: Existing Conditions

				Existing			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	0.0		0	0	0	0.00 *	0.00
NBT	3.0		4,800	1,203	1,351	0.25	0.28 *
NBR	2.0	F	3,200	120	164	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00 *
SBT	3.0		4,800	1,393	1,128	0.29 *	0.24
SBR	2.0	F	3,200	1,030	688	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	1.0		1,600	208	338	0.13 *	0.21 *
WBT	0.0		0	0	0	0.00	0.00
WBR	2.0	0	3,200	343	557	0.00	0.00
N/S Critical Movements						0.29	0.28
E/W Critical Movements						0.13	0.21
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.52	0.59
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 4
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Verdugo Way

SCENARIO: Existing Conditions

	Existing							
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	0.0		0	0	0	0.00	*	0.00	
NBT	4.0		6,400	1,111	1,758	0.17		0.27	*
NBR	1.0	0	1,600	420	182	0.00		0.00	
SBL	2.0		3,200	196	150	0.06		0.05	*
SBT	3.0		4,800	1,971	1,312	0.41	*	0.27	
SBR	0.0		0	0	0	0.00		0.00	
EBL	0.0		0	0	0	0.00		0.00	
EBT	0.0		0	0	0	0.00	*	0.00	*
EBR	0.0		0	0	0	0.00		0.00	
WBL	2.0		3,200	424	447	0.13	*	0.14	*
WBT	0.0		0	0	0	0.00		0.00	
WBR	1.0	0	1,600	52	73	0.00		0.00	
N/S Critical Movements						0.41		0.32	
E/W Critical Movements						0.13		0.14	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.64		0.56	
Level of Service (LOS)						B		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 5
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Adolfo Rd

SCENARIO: Existing Conditions

	Existing					
Move-ment	Lane	Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2.0	3,200	350	546	0.11 *	0.17 *
NBT	3.0	4,800	677	1,237	0.17	0.27
NBR	0.0	0	137	56	0.00	0.00
SBL	1.0	1,600	82	36	0.05	0.05
SBT	3.0	4,800	1,350	924	0.30 *	0.21 *
SBR	0.0	0	97	82	0.00	0.00
EBL	2.0	3,200	87	213	0.05	0.07 *
EBT	1.0	1,600	210	158	0.13 *	0.10
EBR	2.0 0	3,200	596	370	0.00	0.00
WBL	2.0	3,200	204	145	0.06 *	0.05
WBT	2.0	3,200	104	213	0.05	0.08 *
WBR	0.0	0	14	31	0.00	0.00
N/S Critical Movements					0.41	0.38
E/W Critical Movements					0.19	0.15
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.70	0.63
Level of Service (LOS)					B	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 6
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Los Pueblos Dr

SCENARIO: Existing Conditions

			Existing			
Move-ment	Lane	Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1.0	1,600	23	68	0.05 *	0.05
NBT	2.0	3,200	633	1,289	0.21	0.42 *
NBR	0.0	0	39	66	0.00	0.00
SBL	1.0	1,600	138	58	0.09	0.05 *
SBT	2.0	3,200	1,403	919	0.44 *	0.29
SBR	0.0	0	4	8	0.00	0.00
EBL	1.0	1,600	12	8	0.05	0.05 *
EBT	1.0	1,600	19	13	0.06 *	0.05
EBR	0.0	0	78	32	0.00	0.00
WBL	1.0	1,600	67	74	0.05 *	0.05
WBT	1.0	1,600	8	19	0.05	0.05 *
WBR	1.0 0	1,600	88	111	0.00	0.00
N/S Critical Movements					0.49	0.47
E/W Critical Movements					0.11	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.70	0.67
Level of Service (LOS)					B	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 7
NORTH/SOUTH: Mission Oaks Blvd
EAST/WEST: Adolfo Rd

SCENARIO: Existing Conditions

				Existing				
Move-				Volume		V/C Ratio		
ment	Lane		Capacity	AM	PM	AM		PM
NBL	2.0		3,200	152	39	0.05	*	0.05
NBT	2.0		3,200	119	243	0.05		0.08 *
NBR	1.0	P	1,600	188	149	0.05	*	0.00
SBL	2.0		3,200	193	101	0.06		0.05 *
SBT	2.0		3,200	332	229	0.10	*	0.07
SBR	1.0	P	1,600	192	99	0.00		0.00
EBL	1.0		1,600	180	197	0.11	*	0.12 *
EBT	2.0		3,200	504	471	0.16		0.15
EBR	1.0	P	1,600	86	25	0.00		0.00
WBL	1.0		1,600	72	140	0.05		0.09
WBT	2.0		3,200	293	497	0.15	*	0.22 *
WBR	0.0		0	178	201	0.00		0.00
N/S Critical Movements						0.15		0.13
E/W Critical Movements						0.26		0.34
Right Turn Critical Movement						0.05		0.00
Clearance Interval						0.10		0.10
ICU						0.56		0.57
Level of Service (LOS)						A		A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	286	66	106	236	1	13	2	33	2	13	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	25	308	71	114	254	1	14	2	35	2	14	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	255			378			787	875	189	722	910	127
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			378			787	875	189	722	910	127
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			90			94	99	96	99	94	96
cM capacity (veh/h)	1307			1177			238	254	820	273	242	899

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	25	205	173	114	169	86	52	48
Volume Left	25	0	0	114	0	0	14	2
Volume Right	0	0	71	0	0	1	35	32
cSH	1307	1700	1700	1177	1700	1700	467	476
Volume to Capacity	0.02	0.12	0.10	0.10	0.10	0.05	0.11	0.10
Queue Length 95th (ft)	1	0	0	8	0	0	9	8
Control Delay (s)	7.8	0.0	0.0	8.4	0.0	0.0	13.7	13.4
Lane LOS	A			A			B	B
Approach Delay (s)	0.5			2.6			13.7	13.4
Approach LOS							B	B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	34.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	316	61	1	34	5	7	1	0	25	26	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	56	390	75	1	42	6	9	1	0	31	32	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	48			465			651	552	390	549	624	45
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	48			465			651	552	390	549	624	45
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			97	100	100	93	92	91
cM capacity (veh/h)	1559			1096			318	425	658	433	387	1025

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	56	390	75	1	48	10	152
Volume Left	56	0	0	1	0	9	31
Volume Right	0	0	75	0	6	0	89
cSH	1559	1700	1700	1096	1700	328	630
Volume to Capacity	0.04	0.23	0.04	0.00	0.03	0.03	0.24
Queue Length 95th (ft)	3	0	0	0	0	2	23
Control Delay (s)	7.4	0.0	0.0	8.3	0.0	16.3	12.5
Lane LOS	A			A		C	B
Approach Delay (s)	0.8			0.2		16.3	12.5
Approach LOS						C	B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	87	204	27	44	293	1	52	3	58	1	2	18
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	222	29	48	318	1	57	3	63	1	2	20
Pedestrians											8	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	328			251			701	849	126	787	863	168
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	328			251			701	849	126	787	863	168
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			96			80	99	93	100	99	98
cM capacity (veh/h)	1221			1311			288	262	901	235	257	841

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	95	148	103	48	212	107	123	23
Volume Left	95	0	0	48	0	0	57	1
Volume Right	0	0	29	0	0	1	63	20
cSH	1221	1700	1700	1311	1700	1700	440	628
Volume to Capacity	0.08	0.09	0.06	0.04	0.12	0.06	0.28	0.04
Queue Length 95th (ft)	6	0	0	3	0	0	28	3
Control Delay (s)	8.2	0.0	0.0	7.8	0.0	0.0	16.3	10.9
Lane LOS	A			A			C	B
Approach Delay (s)	2.2			1.0			16.3	10.9
Approach LOS							C	B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	51	51	4	0	278	26	59	14	0	10	5	58
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	63	63	5	0	343	32	73	17	0	12	6	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	375			68			607	564	63	557	553	359
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	375			68			607	564	63	557	553	359
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			79	96	100	97	99	90
cM capacity (veh/h)	1183			1533			347	411	1002	410	418	685

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	63	63	5	0	375	90	90
Volume Left	63	0	0	0	0	73	12
Volume Right	0	0	5	0	32	0	72
cSH	1183	1700	1700	1700	1700	358	603
Volume to Capacity	0.05	0.04	0.00	0.00	0.22	0.25	0.15
Queue Length 95th (ft)	4	0	0	0	0	25	13
Control Delay (s)	8.2	0.0	0.0	0.0	0.0	18.4	12.0
Lane LOS	A					C	B
Approach Delay (s)	4.0			0.0		18.4	12.0
Approach LOS						C	B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	40.2%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 1
NORTH/SOUTH: Pleasant Valley Rd
EAST/WEST: Pancho Rd

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.00	1,600	10	60	0.05	0.05 *
NBT	2.00	3,200	869	799	0.30 *	0.25
NBR	0.0	0	106	8	0.00	0.00
SBL	2.0	3,200	330	38	0.10 *	0.05
SBT	2.0	3,200	586	1,037	0.19	0.33 *
SBR	0.0	0	7	12	0.00	0.00
EBL	1.0	1,600	18	12	0.05 *	0.05 *
EBT	1.0	1,600	2	2	0.05	0.05
EBR	0.0	0	31	31	0.00	0.00
WBL	0.0	0	70	445	0.00	0.00
WBT	2.0	3,200	1	7	0.05 *	0.14 *
WBR	1.0 0	1,600	26	247	0.00	0.00
N/S Critical Movements					0.40	0.38
E/W Critical Movements					0.10	0.19
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.60	0.67
Level of Service (LOS)					A	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 2
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: EB 101 Ramps/Calle Cuesta

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects						
				Volume		V/C Ratio	
Move-ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	3.0		4,800	681	755	0.14	0.16
NBR	0.0		0	3	4	0.00	0.00
SBL	1.0		1,600	4	7	0.05	0.05
SBT	2.0		3,200	841	942	0.26 *	0.29 *
SBR	1.0	0	1,600	791	629	0.00	0.00
EBL	1.90		3,040	792	891	0.26 *	0.29 *
EBT	0.10		160	0	3	0.00	0.05
EBR	1.0	0	1,600	149	102	0.00	0.00
WBL	1.0		1,600	1	7	0.05	0.05
WBT	1.0		1,600	0	0	0.05 *	0.05 *
WBR	0.0		0	6	19	0.00	0.00
N/S Critical Movements						0.26	0.29
E/W Critical Movements						0.31	0.34
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.67	0.73
Level of Service (LOS)						B	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 3
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: WB 101 Ramps

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects						
Move-				Volume		V/C Ratio	
ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00
NBT	3.0		4,800	1,310	1,379	0.27	0.29 *
NBR	2.0	F	3,200	129	168	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00 *
SBT	3.0		4,800	1,413	1,224	0.29 *	0.26
SBR	2.0	F	3,200	1,045	771	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	1.0		1,600	217	367	0.14 *	0.23 *
WBT	0.0		0	0	0	0.00	0.00
WBR	2.0	0	3,200	423	577	0.00	0.00
N/S Critical Movements						0.29	0.29
E/W Critical Movements						0.14	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.53	0.62
Level of Service (LOS)						A	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 4
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Verdugo Way

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects							
Move-				Volume		V/C Ratio		
ment	Lane		Capacity	AM	PM	AM		PM
NBL	0.0		0	0	0	0.00	*	0.00
NBT	4.0		6,400	1,161	1,771	0.18		0.28 *
NBR	1.0	0	1,600	557	217	0.00		0.00
SBL	2.0		3,200	196	150	0.06		0.05 *
SBT	3.0		4,800	1,981	1,360	0.41	*	0.28
SBR	0.0		0	0	0	0.00		0.00
EBL	0.0		0	0	0	0.00		0.00
EBT	0.0		0	0	0	0.00	*	0.00 *
EBR	0.0		0	0	0	0.00		0.00
WBL	2.0		3,200	449	568	0.14	*	0.18 *
WBT	0.0		0	0	0	0.00		0.00
WBR	1.0	0	1,600	52	73	0.00		0.00
N/S Critical Movements						0.41		0.33
E/W Critical Movements						0.14		0.18
Right Turn Critical Movement						0.00		0.00
Clearance Interval						0.10		0.10
ICU						0.65		0.61
Level of Service (LOS)						B		B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 5
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Adolfo Rd

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects					
Move-			Volume		V/C Ratio	
ment	Lane	Capacity	AM	PM	AM	PM
NBL	2.0	3,200	350	546	0.11 *	0.17 *
NBT	3.0	4,800	677	1,237	0.18	0.27
NBR	0.0	0	187	69	0.00	0.00
SBL	1.0	1,600	109	43	0.07	0.05
SBT	3.0	4,800	1,350	924	0.30 *	0.21 *
SBR	0.0	0	97	82	0.00	0.00
EBL	2.0	3,200	87	213	0.05	0.07 *
EBT	1.0	1,600	263	172	0.16 *	0.11
EBR	2.0 0	3,200	596	370	0.00	0.00
WBL	2.0	3,200	214	193	0.07 *	0.06
WBT	2.0	3,200	114	261	0.05	0.10 *
WBR	0.0	0	19	56	0.00	0.00
N/S Critical Movements					0.41	0.38
E/W Critical Movements					0.23	0.17
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.74	0.65
Level of Service (LOS)					C	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 6
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Los Pueblos Dr

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	23	68	0.05 *	0.05
NBT	2.0	3,200	638	1,314	0.21	0.43 *
NBR	0.0	0	39	66	0.00	0.00
SBL	1.0	1,600	138	58	0.09	0.05 *
SBT	2.0	3,200	1,430	926	0.45 *	0.29
SBR	0.0	0	4	8	0.00	0.00
EBL	1.0	1,600	12	8	0.05	0.05 *
EBT	1.0	1,600	19	13	0.06 *	0.05
EBR	0.0	0	78	32	0.00	0.00
WBL	1.0	1,600	67	74	0.05 *	0.05
WBT	1.0	1,600	8	19	0.05	0.05 *
WBR	1.0 0	1,600	88	111	0.00	0.00
N/S Critical Movements					0.50	0.48
E/W Critical Movements					0.11	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.71	0.68
Level of Service (LOS)					C	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 7
NORTH/SOUTH: Mission Oaks Blvd
EAST/WEST: Adolfo Rd

SCENARIO: Existing + Approved Projects Conditions

	Existing + Approved Projects						
Move-				Volume		V/C Ratio	
ment	Lane		Capacity	AM	PM	AM	PM
NBL	2.0		3,200	152	39	0.05 *	0.05
NBT	2.0		3,200	119	243	0.05	0.08 *
NBR	1.0	P	1,600	188	149	0.05 *	0.00
SBL	2.0		3,200	193	101	0.06	0.05 *
SBT	2.0		3,200	332	229	0.10 *	0.07
SBR	1.0	P	1,600	192	99	0.00	0.00
EBL	1.0		1,600	180	197	0.11 *	0.12 *
EBT	2.0		3,200	557	485	0.17	0.15
EBR	1.0	P	1,600	86	25	0.00	0.00
WBL	1.0		1,600	72	140	0.05	0.09
WBT	2.0		3,200	303	545	0.15 *	0.23 *
WBR	0.0		0	178	201	0.00	0.00
N/S Critical Movements						0.15	0.13
E/W Critical Movements						0.26	0.35
Right Turn Critical Movement						0.05	0.00
Clearance Interval						0.10	0.10
ICU						0.56	0.58
Level of Service (LOS)						A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	416	66	106	261	1	13	2	33	2	13	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	25	447	71	114	281	1	14	2	35	2	14	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	282			518			940	1042	259	819	1077	141
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	282			518			940	1042	259	819	1077	141
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			89			92	99	95	99	93	96
cM capacity (veh/h)	1278			1044			180	199	740	228	190	881

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	25	298	220	114	187	95	52	48
Volume Left	25	0	0	114	0	0	14	2
Volume Right	0	0	71	0	0	1	35	32
cSH	1278	1700	1700	1044	1700	1700	378	405
Volume to Capacity	0.02	0.18	0.13	0.11	0.11	0.06	0.14	0.12
Queue Length 95th (ft)	1	0	0	9	0	0	12	10
Control Delay (s)	7.9	0.0	0.0	8.9	0.0	0.0	16.0	15.1
Lane LOS	A			A			C	C
Approach Delay (s)	0.4			2.6			16.0	15.1
Approach LOS							C	C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	37.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	428	86	1	54	5	12	1	0	25	26	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	56	528	106	1	67	6	15	1	0	31	32	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	73			635			814	715	528	712	818	70
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73			635			814	715	528	712	818	70
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			94	100	100	91	89	91
cM capacity (veh/h)	1527			949			241	343	550	336	299	993

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	56	528	106	1	73	16	152
Volume Left	56	0	0	1	0	15	31
Volume Right	0	0	106	0	6	0	89
cSH	1527	1700	1700	949	1700	247	526
Volume to Capacity	0.04	0.31	0.06	0.00	0.04	0.07	0.29
Queue Length 95th (ft)	3	0	0	0	0	5	30
Control Delay (s)	7.4	0.0	0.0	8.8	0.0	20.6	14.6
Lane LOS	A			A		C	B
Approach Delay (s)	0.6			0.1		20.6	14.6
Approach LOS						C	B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	350	61	1	155	5	7	1	0	25	26	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	380	66	1	168	5	8	1	0	27	28	78
Pedestrians											8	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	182			447			690	696	223	470	726	95
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	182			447			690	696	223	470	726	95
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			97	100	100	94	92	92
cM capacity (veh/h)	1381			1110			275	348	780	457	335	937

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	49	254	193	1	112	62	9	134
Volume Left	49	0	0	1	0	0	8	27
Volume Right	0	0	66	0	0	5	0	78
cSH	1381	1700	1700	1110	1700	1700	282	588
Volume to Capacity	0.04	0.15	0.11	0.00	0.07	0.04	0.03	0.23
Queue Length 95th (ft)	3	0	0	0	0	0	2	22
Control Delay (s)	7.7	0.0	0.0	8.2	0.0	0.0	18.2	12.9
Lane LOS	A			A			C	B
Approach Delay (s)	0.8			0.1			18.2	12.9
Approach LOS							C	B

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	51	76	14	0	358	26	100	14	0	10	5	58
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	63	94	17	0	442	32	123	17	0	12	6	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	474			111			736	694	94	686	695	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474			111			736	694	94	686	695	458
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			56	95	100	96	98	88
cM capacity (veh/h)	1088			1479			278	345	963	332	345	603

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	63	94	17	0	474	141	90
Volume Left	63	0	0	0	0	123	12
Volume Right	0	0	17	0	32	0	72
cSH	1088	1700	1700	1700	1700	285	518
Volume to Capacity	0.06	0.06	0.01	0.00	0.28	0.49	0.17
Queue Length 95th (ft)	5	0	0	0	0	64	16
Control Delay (s)	8.5	0.0	0.0	0.0	0.0	29.4	13.4
Lane LOS	A					D	B
Approach Delay (s)	3.1			0.0		29.4	13.4
Approach LOS						D	B

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 1
NORTH/SOUTH: Pleasant Valley Rd
EAST/WEST: Pancho Rd

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project						
			Volume		V/C Ratio		
Move-ment	Lane	Capacity	AM	PM	AM	PM	
NBL	1.00	1,600	10	60	0.05	0.05	*
NBT	2.00	3,200	874	815	0.31	0.26	*
NBR	0.0	0	106	8	0.00	0.00	
SBL	2.0	3,200	334	40	0.10	0.05	*
SBT	2.0	3,200	598	1,047	0.19	0.33	*
SBR	0.0	0	7	12	0.00	0.00	
EBL	1.0	1,600	18	12	0.05	0.05	*
EBT	1.0	1,600	2	2	0.05	0.05	*
EBR	0.0	0	31	31	0.00	0.00	
WBL	0.0	0	70	445	0.00	0.00	
WBT	2.0	3,200	1	7	0.05	0.14	*
WBR	1.0 0	1,600	27	250	0.00	0.00	
N/S Critical Movements					0.41	0.38	
E/W Critical Movements					0.10	0.19	
Right Turn Critical Movement					0.00	0.00	
Clearance Interval					0.10	0.10	
ICU					0.61	0.67	
Level of Service (LOS)					B	B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 2
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: EB 101 Ramps/Calle Cuesta

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project						
				Volume		V/C Ratio	
Move-ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	3.0		4,800	687	758	0.14	0.16
NBR	0.0		0	3	4	0.00	0.00
SBL	1.0		1,600	4	7	0.05	0.05
SBT	2.0		3,200	859	964	0.27 *	0.30 *
SBR	1.0	0	1,600	847	691	0.00	0.00
EBL	1.90		3,040	809	947	0.27 *	0.31 *
EBT	0.10		160	0	3	0.00	0.05
EBR	1.0	0	1,600	149	102	0.00	0.00
WBL	1.0		1,600	1	7	0.05	0.05
WBT	1.0		1,600	0	0	0.05 *	0.05 *
WBR	0.0		0	6	19	0.00	0.00
N/S Critical Movements						0.27	0.30
E/W Critical Movements						0.32	0.36
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.69	0.76
Level of Service (LOS)						B	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 3
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: WB 101 Ramps

SCENARIO: Existing + Approved Projects + Project Conditions

				Existing + Approved Projects + Project			
				Volume		V/C Ratio	
Move-ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00
NBT	3.0		4,800	1,333	1,454	0.28	0.30 *
NBR	2.0	F	3,200	129	168	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00 *
SBT	3.0		4,800	1,487	1,308	0.31 *	0.27
SBR	2.0	F	3,200	1,101	833	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	1.0		1,600	217	367	0.14 *	0.23 *
WBT	0.0		0	0	0	0.00	0.00
WBR	2.0	0	3,200	439	634	0.00	0.00
N/S Critical Movements						0.31	0.30
E/W Critical Movements						0.14	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.55	0.63
Level of Service (LOS)						A	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 4
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Verdugo Way

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project							
Move-				Volume		V/C Ratio		
ment	Lane		Capacity	AM	PM	AM		PM	
NBL	0.0		0	0	0	0.00	*	0.00	
NBT	4.0		6,400	1,172	1,797	0.18		0.28	*
NBR	1.0	0	1,600	585	323	0.00		0.00	
SBL	2.0		3,200	196	150	0.06		0.05	*
SBT	3.0		4,800	2,003	1,395	0.42	*	0.29	
SBR	0.0		0	0	0	0.00		0.00	
EBL	0.0		0	0	0	0.00		0.00	
EBT	0.0		0	0	0	0.00	*	0.00	*
EBR	0.0		0	0	0	0.00		0.00	
WBL	2.0		3,200	557	679	0.17	*	0.21	*
WBT	0.0		0	0	0	0.00		0.00	
WBR	1.0	0	1,600	52	73	0.00		0.00	
N/S Critical Movements						0.42		0.33	
E/W Critical Movements						0.17		0.21	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.69		0.64	
Level of Service (LOS)						B		B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 5
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Adolfo Rd

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	2.0	3,200	350	546	0.11 *	0.17 *
NBT	3.0	4,800	677	1,237	0.18	0.28
NBR	0.0	0	198	95	0.00	0.00
SBL	1.0	1,600	114	59	0.07	0.05
SBT	3.0	4,800	1,350	924	0.30 *	0.21 *
SBR	0.0	0	97	82	0.00	0.00
EBL	2.0	3,200	87	213	0.05	0.07
EBT	1.0	1,600	273	206	0.17 *	0.13 *
EBR	2.0 0	3,200	596	370	0.00	0.00
WBL	2.0	3,200	236	228	0.07 *	0.07 *
WBT	2.0	3,200	147	301	0.06	0.12
WBR	0.0	0	35	75	0.00	0.00
N/S Critical Movements					0.41	0.38
E/W Critical Movements					0.24	0.20
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.75	0.68
Level of Service (LOS)					C	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 6
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Los Pueblos Dr

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	23	68	0.05 *	0.05
NBT	2.0	3,200	654	1,333	0.22	0.44 *
NBR	0.0	0	39	66	0.00	0.00
SBL	1.0	1,600	138	58	0.09	0.05 *
SBT	2.0	3,200	1,435	942	0.45 *	0.30
SBR	0.0	0	4	8	0.00	0.00
EBL	1.0	1,600	12	8	0.05	0.05 *
EBT	1.0	1,600	19	13	0.06 *	0.05
EBR	0.0	0	78	32	0.00	0.00
WBL	1.0	1,600	67	74	0.05 *	0.05
WBT	1.0	1,600	8	19	0.05	0.05 *
WBR	1.0 0	1,600	88	111	0.00	0.00
N/S Critical Movements					0.50	0.49
E/W Critical Movements					0.11	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.71	0.69
Level of Service (LOS)					C	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 7
NORTH/SOUTH: Mission Oaks Blvd
EAST/WEST: Adolfo Rd

SCENARIO: Existing + Approved Projects + Project Conditions

	Existing + Approved Projects + Project							
Move-				Volume		V/C Ratio		
ment	Lane		Capacity	AM	PM	AM		PM
NBL	2.0		3,200	152	39	0.05	*	0.05
NBT	2.0		3,200	119	243	0.05		0.08 *
NBR	1.0	P	1,600	188	149	0.05	*	0.00
SBL	2.0		3,200	193	101	0.06		0.05 *
SBT	2.0		3,200	332	229	0.10	*	0.07
SBR	1.0	P	1,600	192	99	0.00		0.00
EBL	1.0		1,600	180	197	0.11	*	0.12 *
EBT	2.0		3,200	567	519	0.18		0.16
EBR	1.0	P	1,600	86	25	0.00		0.00
WBL	1.0		1,600	72	140	0.05		0.09
WBT	2.0		3,200	336	585	0.16	*	0.25 *
WBR	0.0		0	178	201	0.00		0.00
N/S Critical Movements						0.15		0.13
E/W Critical Movements						0.27		0.37
Right Turn Critical Movement						0.05		0.00
Clearance Interval						0.10		0.10
ICU						0.57		0.60
Level of Service (LOS)						A		A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	23	416	66	106	261	4	28	2	33	2	13	30
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	25	447	71	114	281	4	30	2	35	2	14	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	285			518			940	1045	259	820	1078	142
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	285			518			940	1045	259	820	1078	142
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			89			83	99	95	99	93	96
cM capacity (veh/h)	1274			1044			180	199	740	227	190	879

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	25	298	220	114	187	98	68	48
Volume Left	25	0	0	114	0	0	30	2
Volume Right	0	0	71	0	0	4	35	32
cSH	1274	1700	1700	1044	1700	1700	299	404
Volume to Capacity	0.02	0.18	0.13	0.11	0.11	0.06	0.23	0.12
Queue Length 95th (ft)	1	0	0	9	0	0	21	10
Control Delay (s)	7.9	0.0	0.0	8.9	0.0	0.0	20.5	15.1
Lane LOS	A			A			C	C
Approach Delay (s)	0.4			2.5			20.5	15.1
Approach LOS							C	C

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	428	98	2	54	5	64	16	2	25	29	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	56	528	121	2	67	6	79	20	2	31	36	89
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	73			649			818	717	528	727	835	70
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	73			649			818	717	528	727	835	70
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			67	94	100	90	88	91
cM capacity (veh/h)	1527			937			236	341	550	314	292	993

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	56	528	121	2	73	101	156
Volume Left	56	0	0	2	0	79	31
Volume Right	0	0	121	0	6	2	89
cSH	1527	1700	1700	937	1700	255	501
Volume to Capacity	0.04	0.31	0.07	0.00	0.04	0.40	0.31
Queue Length 95th (ft)	3	0	0	0	0	45	33
Control Delay (s)	7.4	0.0	0.0	8.9	0.0	28.1	15.4
Lane LOS	A			A		D	C
Approach Delay (s)	0.6			0.3		28.1	15.4
Approach LOS						D	C

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	45	350	73	1	155	5	14	1	0	25	26	72
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	49	380	79	1	168	5	15	1	0	27	28	78
Pedestrians											8	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											4.0	
Percent Blockage											1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	182			460			697	702	230	470	739	95
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	182			460			697	702	230	470	739	95
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			100			94	100	100	94	91	92
cM capacity (veh/h)	1381			1098			272	345	773	457	329	937

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	49	254	206	1	112	62	16	134
Volume Left	49	0	0	1	0	0	15	27
Volume Right	0	0	79	0	0	5	0	78
cSH	1381	1700	1700	1098	1700	1700	276	584
Volume to Capacity	0.04	0.15	0.12	0.00	0.07	0.04	0.06	0.23
Queue Length 95th (ft)	3	0	0	0	0	0	5	22
Control Delay (s)	7.7	0.0	0.0	8.3	0.0	0.0	18.9	13.0
Lane LOS	A			A			C	B
Approach Delay (s)	0.7			0.1			18.9	13.0
Approach LOS							C	B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	51	76	56	2	358	26	124	21	1	10	17	58
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	63	94	69	2	442	32	153	26	1	12	21	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	474			163			749	699	94	697	752	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474			163			749	699	94	697	752	458
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			42	92	100	96	93	88
cM capacity (veh/h)	1088			1416			262	342	963	320	319	603

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	63	94	69	2	474	180	105
Volume Left	63	0	0	2	0	153	12
Volume Right	0	0	69	0	32	1	72
cSH	1088	1700	1700	1416	1700	273	470
Volume to Capacity	0.06	0.06	0.04	0.00	0.28	0.66	0.22
Queue Length 95th (ft)	5	0	0	0	0	107	21
Control Delay (s)	8.5	0.0	0.0	7.5	0.0	40.6	14.8
Lane LOS	A			A		E	B
Approach Delay (s)	2.4			0.0		40.6	14.8
Approach LOS						E	B

Intersection Summary			
Average Delay	9.5		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 1
NORTH/SOUTH: Pleasant Valley Rd
EAST/WEST: Pancho Rd

SCENARIO: 2030 Conditions

	2030							
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1.00		1,600	17	34	0.05		0.05	
NBT	2.00		3,200	900	870	0.28	*	0.27	*
NBR	1.0	0	1,600	275	163	0.00		0.00	
SBL	2.0		3,200	376	80	0.12	*	0.05	*
SBT	2.0		3,200	807	741	0.26		0.24	
SBR	0.0		0	9	17	0.00		0.00	
EBL	1.0		1,600	32	14	0.05	*	0.05	*
EBT	1.0		1,600	2	4	0.05		0.05	
EBR	0.0		0	46	19	0.00		0.00	
WBL	0.0		0	119	467	0.00		0.00	
WBT	2.0		3,200	1	5	0.05	*	0.15	*
WBR	1.0	0	1,600	106	354	0.00		0.00	
N/S Critical Movements						0.40		0.32	
E/W Critical Movements						0.10		0.20	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.60		0.62	
Level of Service (LOS)						A		B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 2
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: EB 101 Ramps/Calle Cuesta

SCENARIO: 2030 Conditions

					2030			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	0.0		0	0	0	0.00	*	0.00	*
NBT	3.0		4,800	1,154	1,136	0.24		0.24	
NBR	0.0		0	1	5	0.00		0.00	
SBL	1.0		1,600	21	25	0.05		0.05	
SBT	2.0		3,200	1,009	921	0.32	*	0.29	*
SBR	1.0	0	1,600	983	845	0.00		0.00	
EBL	0.00		0	1,001	1,153	0.00		0.00	
EBT	2.00		3,200	2	3	0.31	*	0.36	*
EBR	1.0	0	1,600	211	78	0.00		0.00	
WBL	1.0		1,600	1	7	0.05	*	0.05	*
WBT	1.0		1,600	0	0	0.05		0.05	
WBR	0.0		0	6	19	0.00		0.00	
N/S Critical Movements						0.32		0.29	
E/W Critical Movements						0.36		0.41	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.78		0.80	
Level of Service (LOS)						C		C	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 3
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: WB 101 Ramps

SCENARIO: 2030 Conditions

				2030			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	3.0		4,800	1,478	1,753	0.31	0.37
NBR	2.0	F	3,200	144	240	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	3.0		4,800	1,897	1,870	0.40 *	0.39 *
SBR	2.0	F	3,200	1,119	846	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	1.0		1,600	383	392	0.24 *	0.25 *
WBT	0.0		0	0	0	0.00	0.00
WBR	2.0	0	3,200	615	674	0.00	0.00
N/S Critical Movements						0.40	0.39
E/W Critical Movements						0.24	0.25
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.74	0.74
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 4
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Verdugo Way

SCENARIO: 2030 Conditions

Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
				2030			
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	4.0		6,400	1,388	1,989	0.22	0.31
NBR	1.0	0	1,600	702	219	0.00	0.00
SBL	2.0		3,200	216	105	0.07	0.05
SBT	3.0		4,800	2,544	1,945	0.53 *	0.41 *
SBR	0.0		0	0	0	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	2.0		3,200	297	730	0.09 *	0.23 *
WBT	0.0		0	0	0	0.00	0.00
WBR	1.0	0	1,600	61	121	0.00	0.00
N/S Critical Movements						0.53	0.41
E/W Critical Movements						0.09	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.72	0.74
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 5
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

	2030							
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	2.0		3,200	448	583	0.14	*	0.18	*
NBT	3.0		4,800	716	1,436	0.20		0.34	
NBR	0.0		0	242	216	0.00		0.00	
SBL	1.0		1,600	84	59	0.05		0.05	
SBT	3.0		4,800	1,592	1,025	0.33	*	0.21	*
SBR	1.0	0	1,600	144	102	0.00		0.00	
EBL	2.0		3,200	61	166	0.05		0.05	
EBT	1.0		1,600	234	128	0.15	*	0.08	*
EBR	2.0	0	3,200	718	630	0.00		0.00	
WBL	2.0		3,200	266	352	0.08	*	0.11	*
WBT	2.0		3,200	95	240	0.05		0.10	
WBR	0.0		0	11	82	0.00		0.00	
N/S Critical Movements						0.47		0.39	
E/W Critical Movements						0.23		0.19	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.80		0.68	
Level of Service (LOS)						C		B	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 6
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Los Pueblos Dr

SCENARIO: 2030 Conditions Plus Circulation Element Improvements

	2030					
Move-ment	Lane	Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1.0	1,600	21	64	0.05 *	0.05
NBT	2.0	3,200	763	1,664	0.25	0.55 *
NBR	0.0	0	51	89	0.00	0.00
SBL	1.0	1,600	205	165	0.13	0.10 *
SBT	2.0	3,200	1,799	1,016	0.57 *	0.32
SBR	0.0	0	11	14	0.00	0.00
EBL	1.0	1,600	10	14	0.05	0.05 *
EBT	1.0	1,600	22	15	0.08 *	0.05
EBR	0.0	0	108	42	0.00	0.00
WBL	1.0	1,600	65	87	0.05 *	0.05
WBT	1.0	1,600	4	14	0.05	0.05 *
WBR	1.0 0	1,600	70	225	0.00	0.00
N/S Critical Movements					0.62	0.65
E/W Critical Movements					0.13	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.85	0.85
Level of Service (LOS)					D	D

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 7
NORTH/SOUTH: Mission Oaks Blvd
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
			2030				
NBL	2.0		3,200	150	41	0.05 *	0.05
NBT	2.0		3,200	151	370	0.05	0.12 *
NBR	1.0	P	1,600	251	176	0.00	0.00
SBL	2.0		3,200	302	117	0.09	0.05 *
SBT	2.0		3,200	717	255	0.22 *	0.08
SBR	1.0	P	1,600	223	114	0.00	0.00
EBL	1.0		1,600	154	214	0.10	0.13 *
EBT	2.0		3,200	557	557	0.17 *	0.17
EBR	1.0	P	1,600	16	44	0.00	0.00
WBL	1.0		1,600	225	120	0.14 *	0.08
WBT	2.0		3,200	256	420	0.12	0.21 *
WBR	0.0		0	116	267	0.00	0.00
N/S Critical Movements						0.27	0.17
E/W Critical Movements						0.31	0.34
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.68	0.61
Level of Service (LOS)						B	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 8
NORTH/SOUTH: Camino Ruiz
EAST/WEST: Verdugo Way

SCENARIO: 2030 Conditions

			2030			
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	7	59	0.05 *	0.05 *
NBT	1.0	1,600	1	14	0.05	0.05
NBR	0.0	0	0	0	0.00	0.00
SBL	1.0	1,600	25	10	0.05	0.05
SBT	1.0	1,600	26	5	0.06 *	0.05 *
SBR	0.0	0	72	58	0.00	0.00
EBL	1.0	1,600	45	51	0.05	0.05 *
EBT	1.0	1,600	469	150	0.29 *	0.09
EBR	1.0 0	1,600	61	4	0.00	0.00
WBL	1.0	1,600	1	0	0.05 *	0.00
WBT	1.0	1,600	115	436	0.08	0.29 *
WBR	0.0	0	5	26	0.00	0.00
N/S Critical Movements					0.11	0.10
E/W Critical Movements					0.34	0.34
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.55	0.54
Level of Service (LOS)					A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 9
NORTH/SOUTH: Camino Ruiz
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

	2030					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	13	52	0.05 *	0.05 *
NBT	1.0	1,600	2	3	0.05	0.05
NBR	0.0	0	33	58	0.00	0.00
SBL	1.0	1,600	2	1	0.05	0.05
SBT	1.0	1,600	13	2	0.05 *	0.05 *
SBR	0.0	0	30	18	0.00	0.00
EBL	1.0	1,600	23	87	0.05	0.05 *
EBT	2.0	3,200	439	303	0.16 *	0.10
EBR	0.0	0	66	27	0.00	0.00
WBL	1.0	1,600	106	44	0.07 *	0.05
WBT	2.0	3,200	317	451	0.10	0.14 *
WBR	0.0	0	1	1	0.00	0.00
N/S Critical Movements					0.10	0.10
E/W Critical Movements					0.23	0.19
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.43	0.39
Level of Service (LOS)					A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 1
NORTH/SOUTH: Pleasant Valley Rd
EAST/WEST: Pancho Rd

SCENARIO: 2030 Conditions

				w/GPA 2013-03			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	1.00		1,600	17	34	0.05	0.05
NBT	2.00		3,200	899	866	0.28 *	0.27 *
NBR	1.0	0	1,600	275	163	0.00	0.00
SBL	2.0		3,200	379	75	0.12 *	0.05 *
SBT	2.0		3,200	810	736	0.26	0.24
SBR	0.0		0	9	17	0.00	0.00
EBL	1.0		1,600	32	14	0.05 *	0.05 *
EBT	1.0		1,600	2	4	0.05	0.05
EBR	0.0		0	46	19	0.00	0.00
WBL	0.0		0	119	467	0.00	0.00
WBT	2.0		3,200	1	5	0.05 *	0.15 *
WBR	1.0	0	1,600	105	350	0.00	0.00
N/S Critical Movements						0.40	0.32
E/W Critical Movements						0.10	0.20
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.60	0.62
Level of Service (LOS)						A	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 2
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: EB 101 Ramps/Calle Cuesta

SCENARIO: 2030 Conditions

	w/GPA 2013-03						
				Volume		V/C Ratio	
Move-ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00
NBT	3.0		4,800	1,153	1,129	0.24	0.24 *
NBR	0.0		0	1	5	0.00	0.00
SBL	1.0		1,600	21	25	0.05	0.05 *
SBT	2.0		3,200	1,015	911	0.32 *	0.28
SBR	1.0	0	1,600	1,000	816	0.00	0.00
EBL	0.00		0	999	1,132	0.00	0.00
EBT	2.00		3,200	2	3	0.31 *	0.35 *
EBR	1.0	0	1,600	211	78	0.00	0.00
WBL	1.0		1,600	1	7	0.05 *	0.05 *
WBT	1.0		1,600	0	0	0.05	0.05
WBR	0.0		0	6	19	0.00	0.00
N/S Critical Movements						0.32	0.29
E/W Critical Movements						0.36	0.40
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.78	0.79
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 3
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: WB 101 Ramps

SCENARIO: 2030 Conditions

				w/GPA 2013-03			
				Volume		V/C Ratio	
Move-ment	Lane		Capacity	AM	PM	AM	PM
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	3.0		4,800	1,475	1,725	0.31	0.36
NBR	2.0	F	3,200	144	240	0.00	0.00
SBL	0.0		0	0	0	0.00	0.00
SBT	3.0		4,800	1,903	1,860	0.40 *	0.39 *
SBR	2.0	F	3,200	1,136	817	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	1.0		1,600	383	392	0.24 *	0.25 *
WBT	0.0		0	0	0	0.00	0.00
WBR	2.0	0	3,200	613	653	0.00	0.00
N/S Critical Movements						0.40	0.39
E/W Critical Movements						0.24	0.25
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.74	0.74
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 4
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Verdugo Way

SCENARIO: 2030 Conditions

	w/GPA 2013-03						
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	0.0		0	0	0	0.00 *	0.00 *
NBT	4.0		6,400	1,388	1,989	0.22	0.31
NBR	1.0	0	1,600	697	170	0.00	0.00
SBL	2.0		3,200	215	101	0.07	0.05
SBT	3.0		4,800	2,544	1,945	0.53 *	0.41 *
SBR	0.0		0	0	0	0.00	0.00
EBL	0.0		0	0	0	0.00	0.00
EBT	0.0		0	0	0	0.00 *	0.00 *
EBR	0.0		0	0	0	0.00	0.00
WBL	2.0		3,200	320	691	0.10 *	0.22 *
WBT	0.0		0	0	0	0.00	0.00
WBR	1.0	0	1,600	64	116	0.00	0.00
N/S Critical Movements						0.53	0.41
E/W Critical Movements						0.10	0.22
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.73	0.73
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 5
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

	w/GPA 2013-03						
Move-			Volume		V/C Ratio		
ment	Lane		Capacity	AM	PM	AM	PM
NBL	2.0		3,200	445	583	0.14 *	0.18 *
NBT	3.0		4,800	719	1,433	0.20	0.34
NBR	0.0		0	242	216	0.00	0.00
SBL	1.0		1,600	84	59	0.05	0.05
SBT	3.0		4,800	1,591	1,021	0.33 *	0.21 *
SBR	1.0	0	1,600	144	102	0.00	0.00
EBL	2.0		3,200	61	166	0.05	0.05
EBT	1.0		1,600	233	188	0.15 *	0.12 *
EBR	2.0	0	3,200	718	630	0.00	0.00
WBL	2.0		3,200	269	352	0.08 *	0.11 *
WBT	2.0		3,200	104	225	0.05	0.10
WBR	0.0		0	11	82	0.00	0.00
N/S Critical Movements						0.47	0.39
E/W Critical Movements						0.23	0.23
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.80	0.72
Level of Service (LOS)						C	C

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 6
NORTH/SOUTH: Santa Rosa Rd
EAST/WEST: Los Pueblos Dr

SCENARIO: 2030 Conditions Plus Circulation Element Improvements

			w/GPA 2013-03			
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	21	64	0.05 *	0.05
NBT	2.0	3,200	766	1,659	0.26	0.55 *
NBR	0.0	0	51	89	0.00	0.00
SBL	1.0	1,600	205	165	0.13	0.10 *
SBT	2.0	3,200	1,798	1,012	0.57 *	0.32
SBR	0.0	0	11	14	0.00	0.00
EBL	1.0	1,600	10	14	0.05	0.05 *
EBT	1.0	1,600	22	15	0.08 *	0.05
EBR	0.0	0	108	42	0.00	0.00
WBL	1.0	1,600	65	87	0.05 *	0.05
WBT	1.0	1,600	4	14	0.05	0.05 *
WBR	1.0 0	1,600	70	225	0.00	0.00
N/S Critical Movements					0.62	0.65
E/W Critical Movements					0.13	0.10
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.85	0.85
Level of Service (LOS)					D	D

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 7
NORTH/SOUTH: Mission Oaks Blvd
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

				w/GPA 2013-03			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM	V/C Ratio PM
NBL	2.0		3,200	150	41	0.05 *	0.05
NBT	2.0		3,200	151	370	0.05	0.12 *
NBR	1.0	P	1,600	251	176	0.00	0.00
SBL	2.0		3,200	302	117	0.09	0.05 *
SBT	2.0		3,200	717	255	0.22 *	0.08
SBR	1.0	P	1,600	223	114	0.00	0.00
EBL	1.0		1,600	154	214	0.10	0.13 *
EBT	2.0		3,200	556	547	0.17 *	0.17
EBR	1.0	P	1,600	16	44	0.00	0.00
WBL	1.0		1,600	225	120	0.14 *	0.08
WBT	2.0		3,200	265	405	0.12	0.21 *
WBR	0.0		0	116	267	0.00	0.00
N/S Critical Movements						0.27	0.17
E/W Critical Movements						0.31	0.34
Right Turn Critical Movement						0.00	0.00
Clearance Interval						0.10	0.10
ICU						0.68	0.61
Level of Service (LOS)						B	B

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 8
NORTH/SOUTH: Camino Ruiz
EAST/WEST: Verdugo Way

SCENARIO: 2030 Conditions

					w/GPA 2013-03			
Move-ment	Lane		Capacity	Volume AM	Volume PM	V/C Ratio AM		V/C Ratio PM	
NBL	1.0		1,600	64	108	0.05	*	0.07	*
NBT	1.0		1,600	16	21	0.05		0.05	
NBR	0.0		0	2	1	0.00		0.00	
SBL	1.0		1,600	25	10	0.05		0.05	
SBT	1.0		1,600	29	17	0.06	*	0.05	*
SBR	0.0		0	72	58	0.00		0.00	
EBL	1.0		1,600	45	51	0.05		0.05	*
EBT	1.0		1,600	581	175	0.36	*	0.11	
EBR	1.0	U	1,600	98	56	0.00		0.00	
WBL	1.0		1,600	2	2	0.05	*	0.05	
WBT	1.0		1,600	135	486	0.09		0.32	*
WBR	0.0		0	5	26	0.00		0.00	
N/S Critical Movements						0.11		0.12	
E/W Critical Movements						0.41		0.37	
Right Turn Critical Movement						0.00		0.00	
Clearance Interval						0.10		0.10	
ICU						0.62		0.59	
Level of Service (LOS)						B		A	

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

INTERSECTION CAPACITY UTILIZATION

INTERSECTION NO. 9
NORTH/SOUTH: Camino Ruiz
EAST/WEST: Adolfo Rd

SCENARIO: 2030 Conditions

	w/GPA 2013-03					
			Volume		V/C Ratio	
Move-ment	Lane	Capacity	AM	PM	AM	PM
NBL	1.0	1,600	42	65	0.05 *	0.05 *
NBT	1.0	1,600	2	3	0.05	0.05
NBR	0.0	0	33	58	0.00	0.00
SBL	1.0	1,600	2	1	0.05	0.05
SBT	1.0	1,600	13	2	0.05 *	0.05 *
SBR	0.0	0	30	18	0.00	0.00
EBL	1.0	1,600	23	87	0.05	0.05 *
EBT	2.0	3,200	569	337	0.20 *	0.12
EBR	0.0	0	73	50	0.00	0.00
WBL	1.0	1,600	106	44	0.07 *	0.05
WBT	2.0	3,200	342	522	0.11	0.16 *
WBR	0.0	0	1	1	0.00	0.00
N/S Critical Movements					0.10	0.10
E/W Critical Movements					0.27	0.21
Right Turn Critical Movement					0.00	0.00
Clearance Interval					0.10	0.10
ICU					0.47	0.41
Level of Service (LOS)					A	A

Notes: ICU - Intersection Capacity Utilization
V/C - Volume to Capacity Ratio
Right Turn Conditions:
P - Protected right turn movement
U - Unprotected right turn movement
N - No right turn on red
F - Free right turn lane

Appendix C

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	NA	NA
DIST	CO	RTE	PM

COUNT DATE 4-10-14
CALC SMD DATE 5-3-14
CHK _____ DATE 5-3-14

Major St: ADOLFO ROAD
Minor St: CAMINO RUIZ
EXISTING CONDITIONS

Critical Approach Speed 45 mph
Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				4-5P	8-9A	5-6P	7-8A	12-1P	3-4P	6-7P	2-3P	Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	648	597	582	579	540	508	479	451	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	109	54	117	49	143	100	102	83	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)									

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	✓	Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	12-1P	5-6P	4-5P	6-7P	Hour
Both Approaches - Major Street		✓	540	582	648	479	
Higher Approach - Minor Street	✓		143	117	109	102	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☐**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

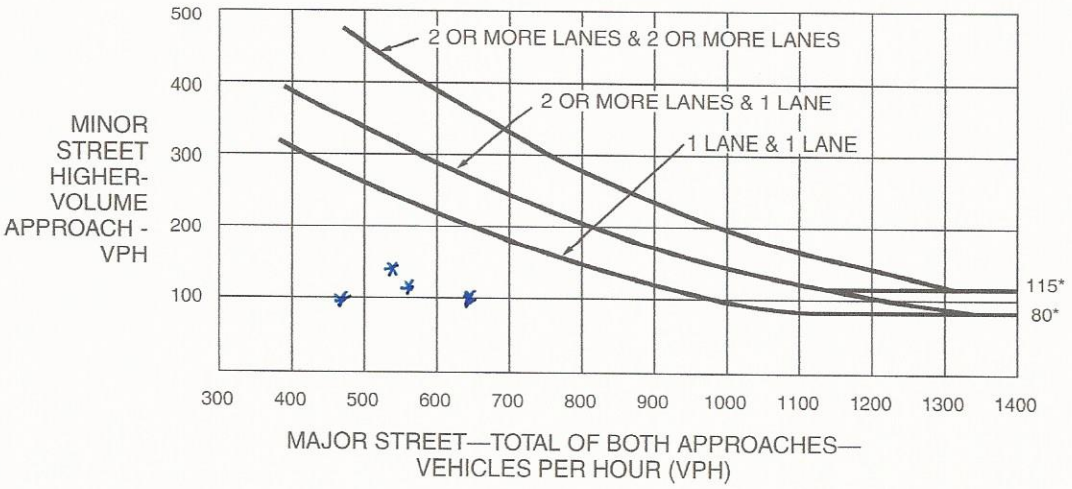
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	12-1P	Hour
Both Approaches - Major Street		✓	540	
Higher Approach - Minor Street	✓		143	

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

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

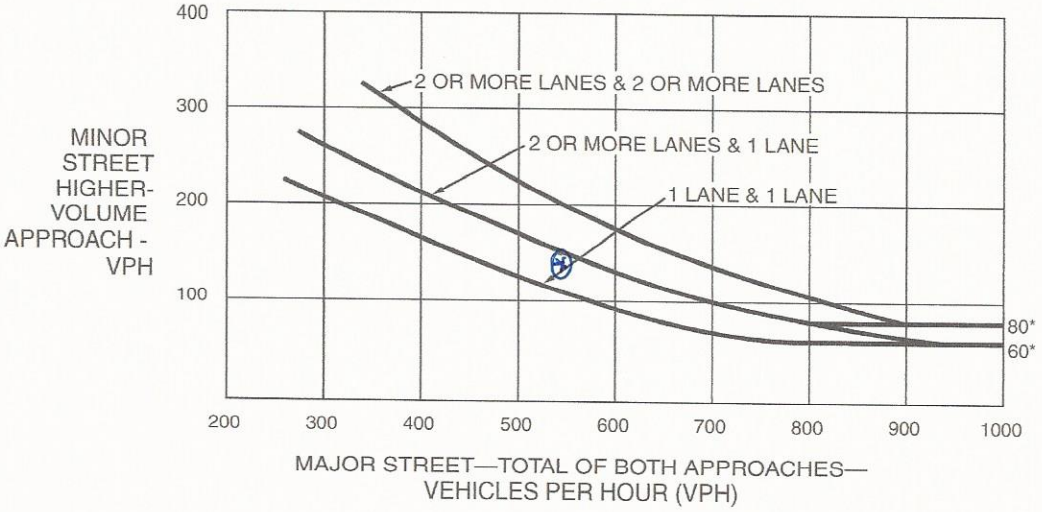
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

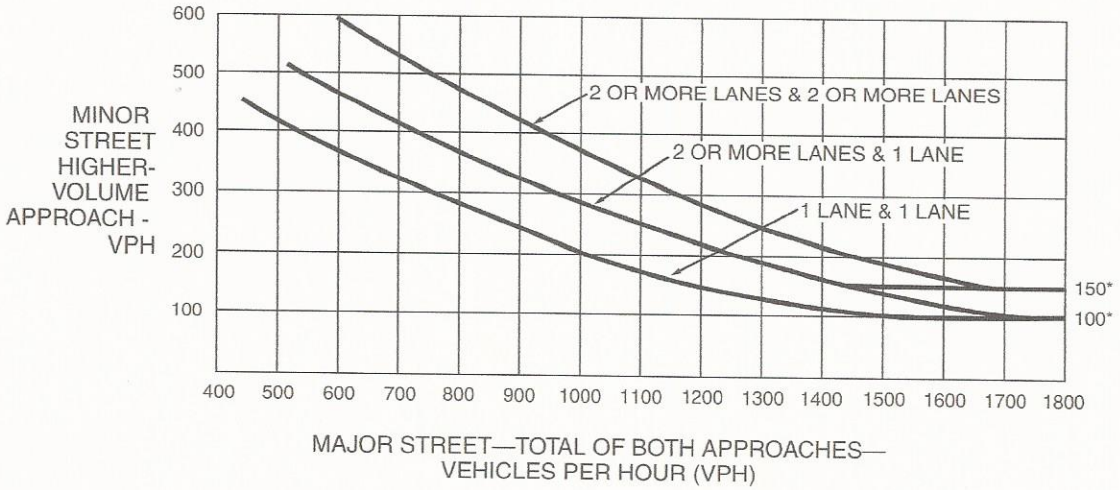
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

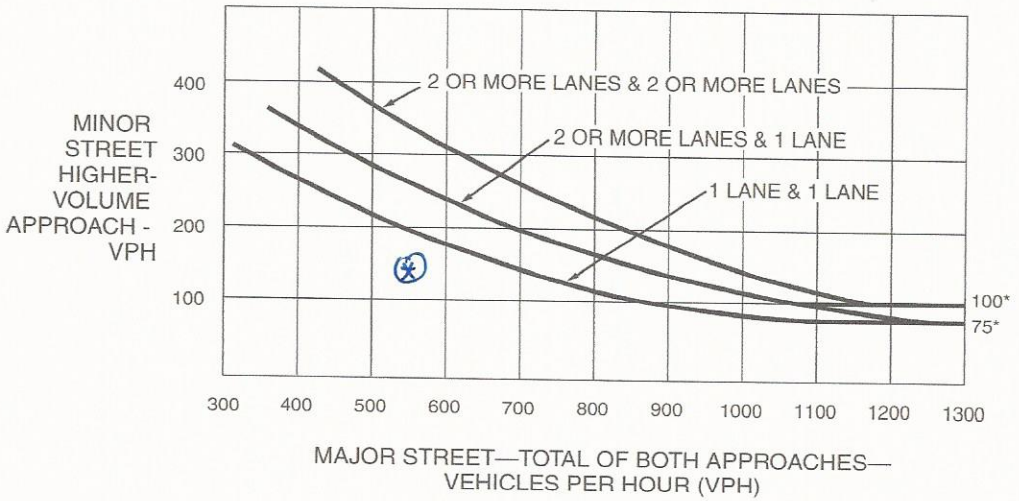
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Part 1 (Parts A or B must be satisfied)

	Hours - - ->	7-8P	8-9P	4-5P	5-6P
A.	Vehicles per hour for any 4 hours	579	597	648	582
	Pedestrians per hour for any 4 hours	8	8	15	6

MIN 107

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☒

	Hours - - ->				
B.	Vehicles per hour for any 1 hour				
	Pedestrians per hour for any 1 hour				

MIN 75

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☒

Part 2

SATISFIED YES ☒ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☒	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☒	No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☒

NA

Part A
Gap/Minutes and # of Children

SATISFIED YES ☐ NO ☐

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

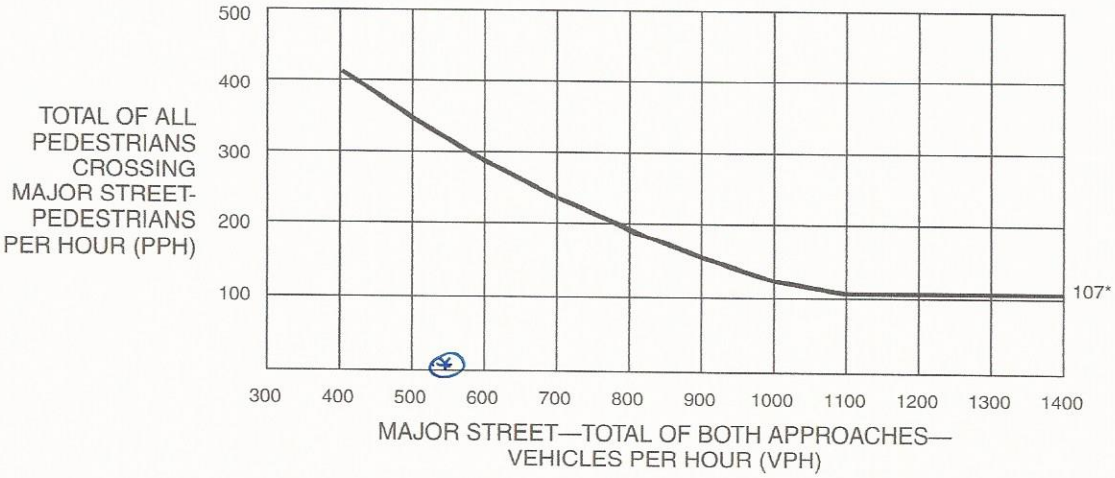
Part B

SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

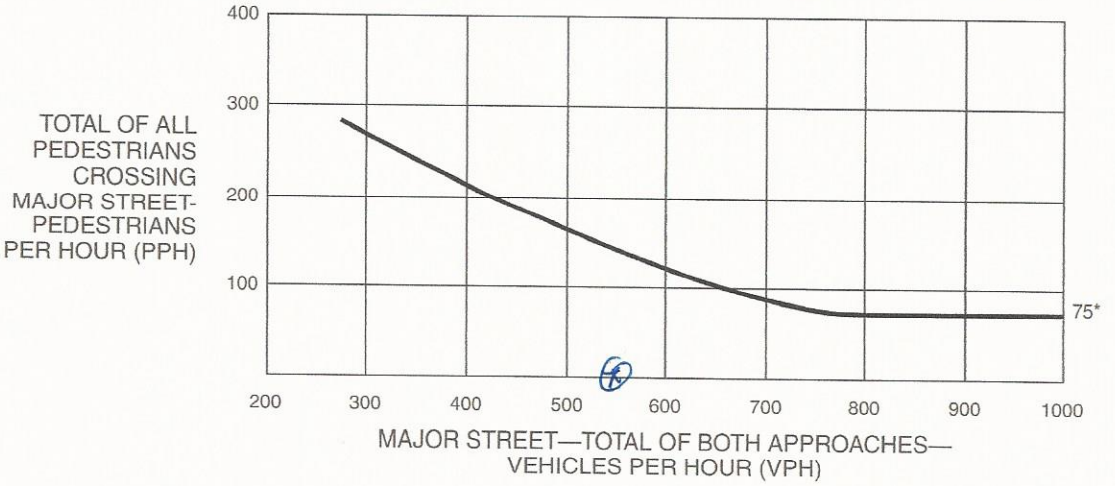
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



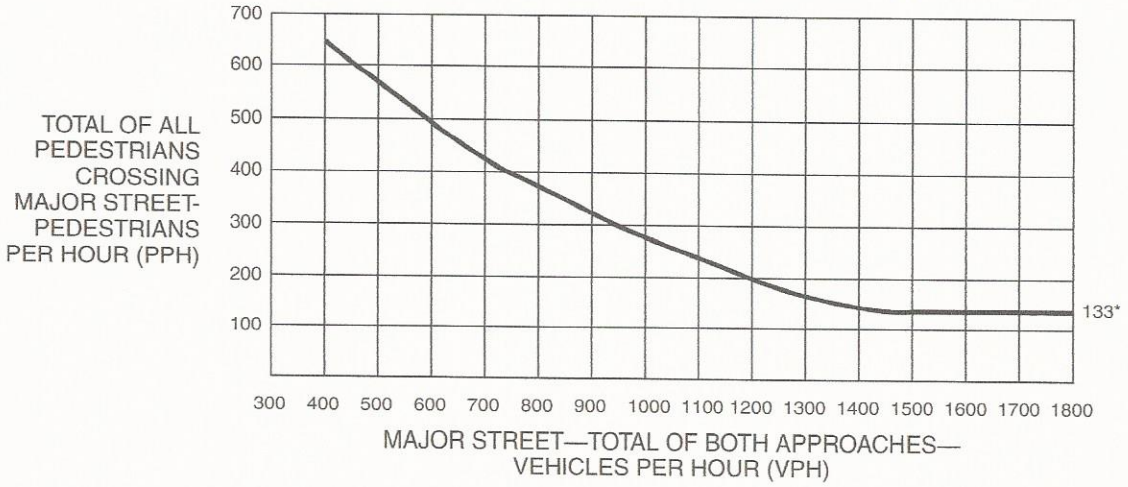
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



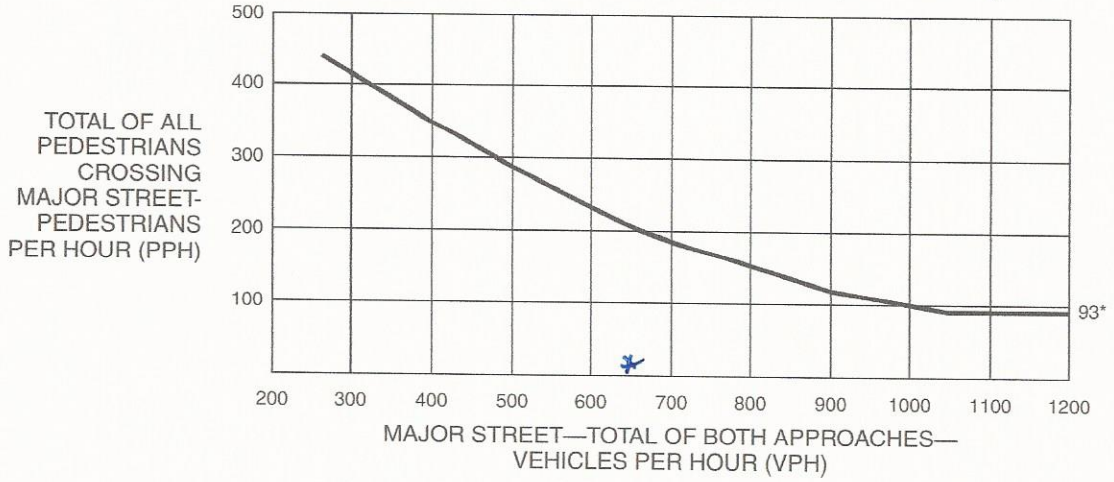
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied) — **SATISFIED YES ☒ NO ☐**

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N >1000 ft, S >1000 ft, E >1000 ft, W >1000 ft	Yes ☒ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☒ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied) — **SATISFIED YES ☐ NO ☒**

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	✓	Yes ☒ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied) — **SATISFIED YES ☐ NO ☒**

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour >1000 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.	✓	Yes ☒ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic	✓		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City	✓		
Appears as Major Route on an Official Plan	✓		
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☐**

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	Yes ☐ No ☐

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	–	–
DIST	CO	RTE	PM

COUNT DATE Existing + App.
CALC SAO DATE 6-06-14
CHK SAO DATE 06-6-14

Major St: Adolfo Road
Minor St: Camino Ruiz

Critical Approach Speed 45 mph
Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				4-5P	8-9A	5-6P	7-8A	12-1P	3-4P	6-7P	2-3P
	U	R	U	R								
APPROACH LANES	1		2 or More									Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	703	652	602	629	590	548	479	481
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	109	54	117	49	143	100	102	83

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)			S	A	M	E		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	12-1P	5-6P	4-5P	6-7P Hour
Both Approaches - Major Street		✓	590	602	703	479
Higher Approach - Minor Street	✓		143	117	109	102

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☐	No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	12-1P Hour
Both Approaches - Major Street		✓	590
Higher Approach - Minor Street	✓		143

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

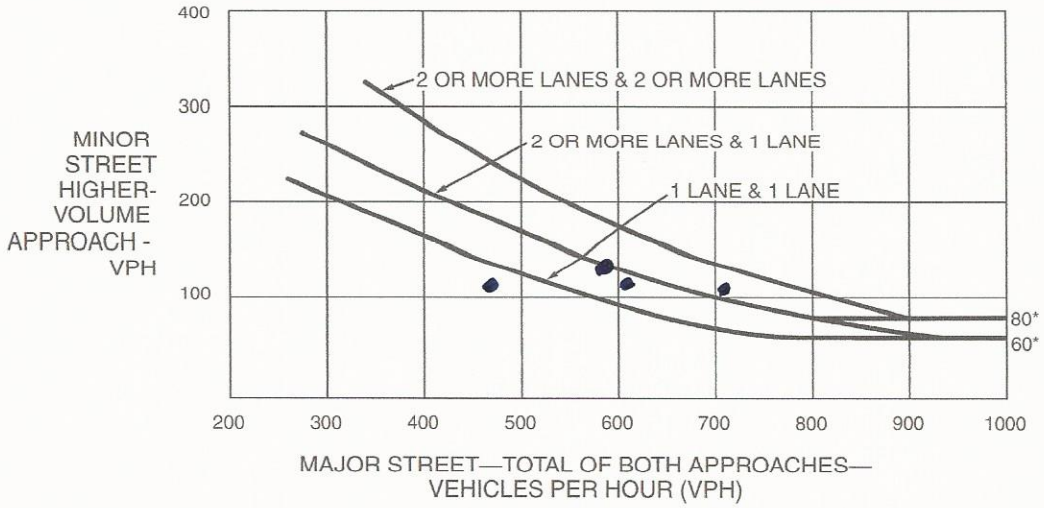
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

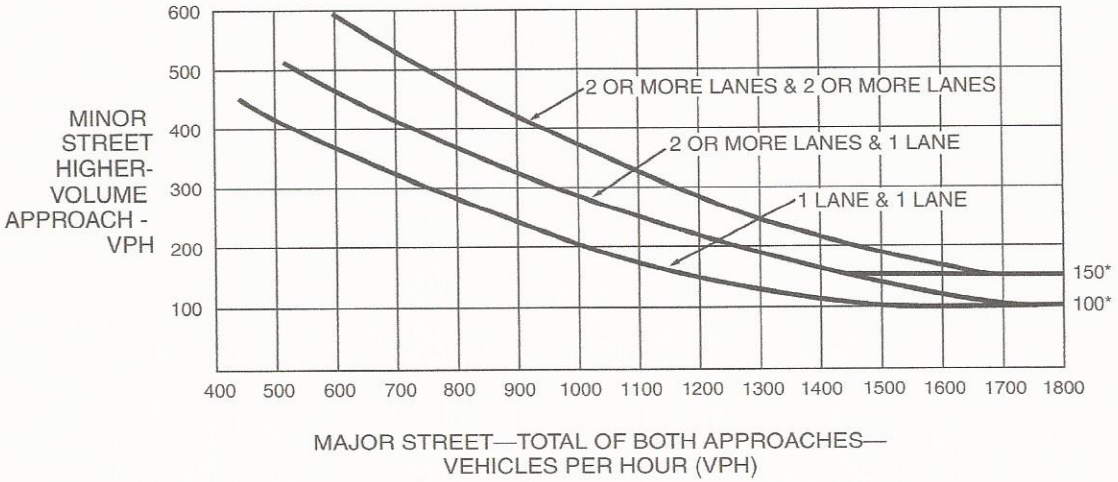
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

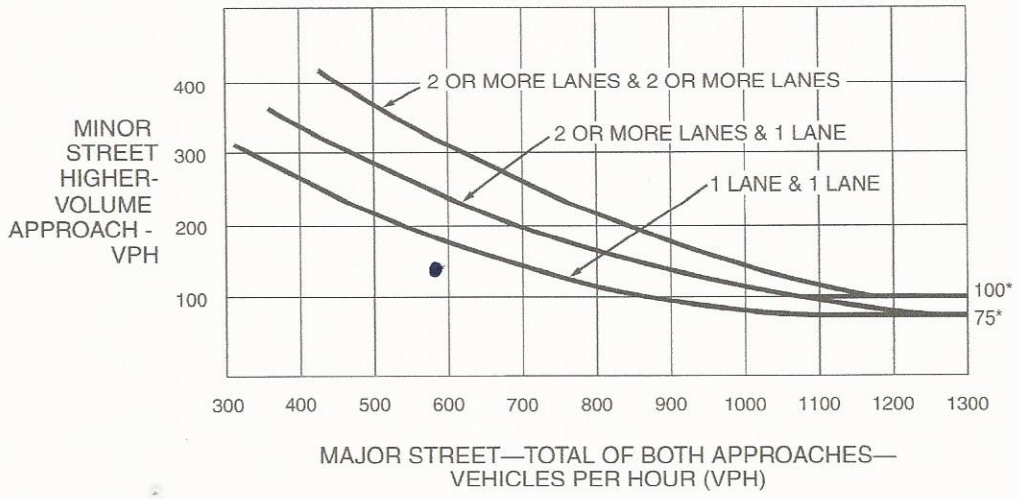
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Part 1 (Parts A or B must be satisfied)

A.

Hours - - ->				
Vehicles per hour for any 4 hours				
Pedestrians per hour for any 4 hours	15	MAX		

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☒

MIN 75

B.

Hours - - ->				
Vehicles per hour for any 1 hour				
Pedestrians per hour for any 1 hour	15	MAX		

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☒

MIN 93

Part 2 SATISFIED YES ☐ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐	No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☒ NA

Part A SATISFIED YES ☐ NO ☐
Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

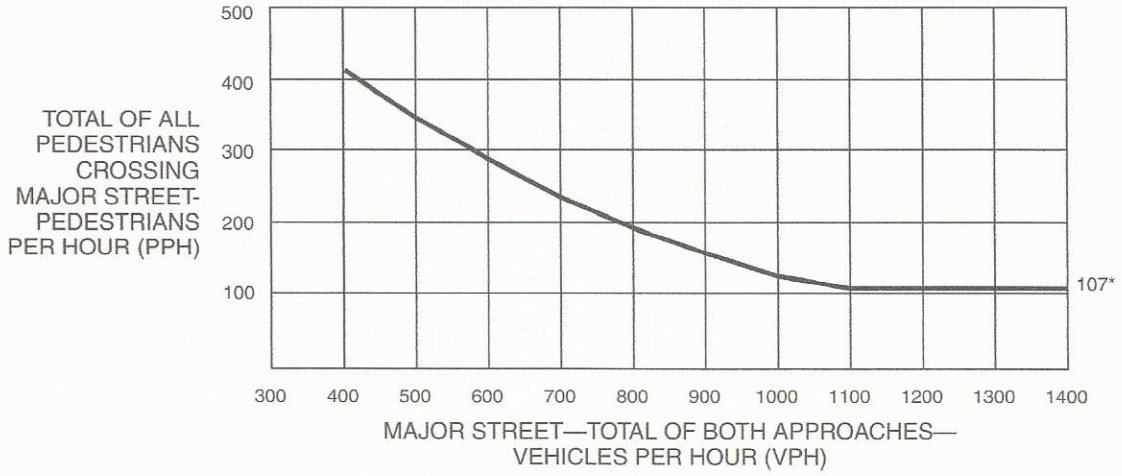
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

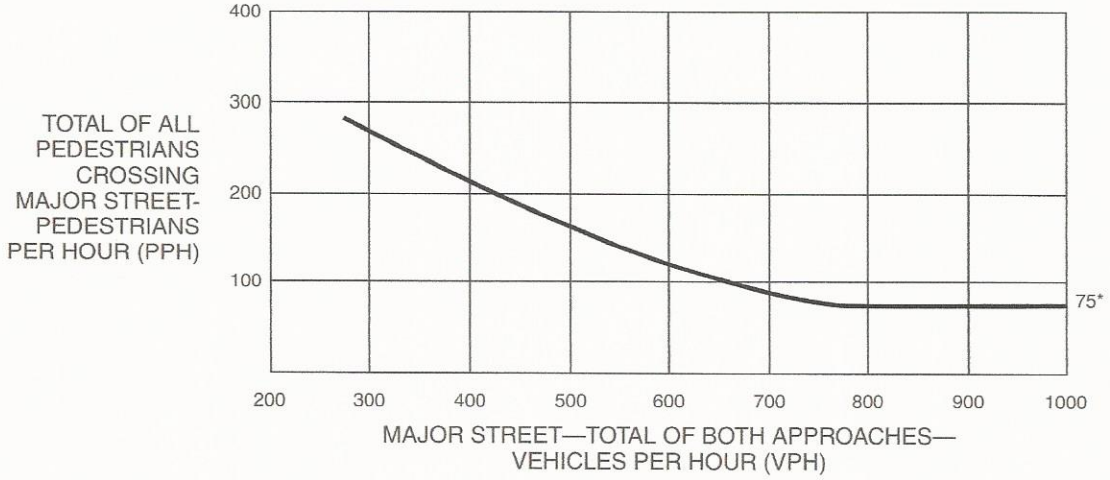
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



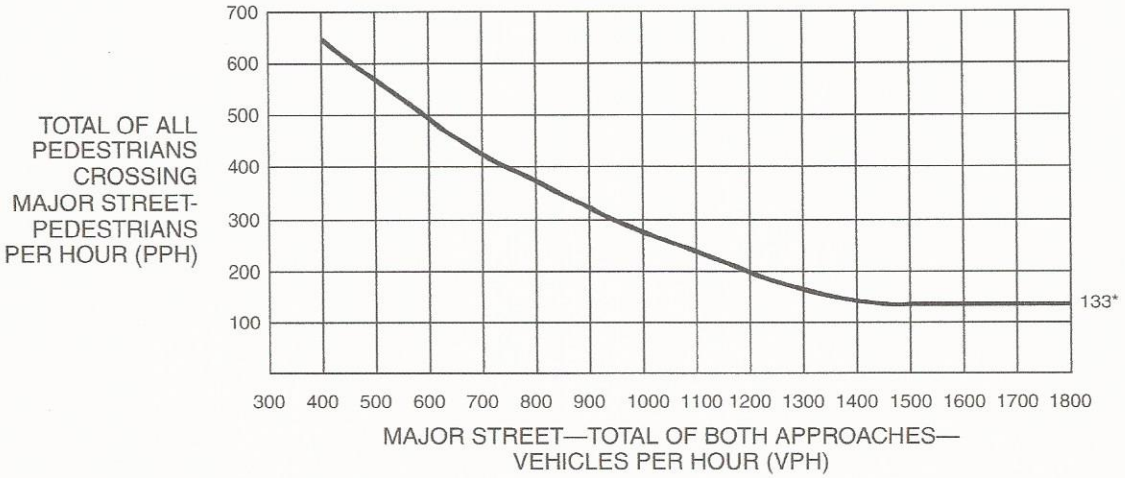
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



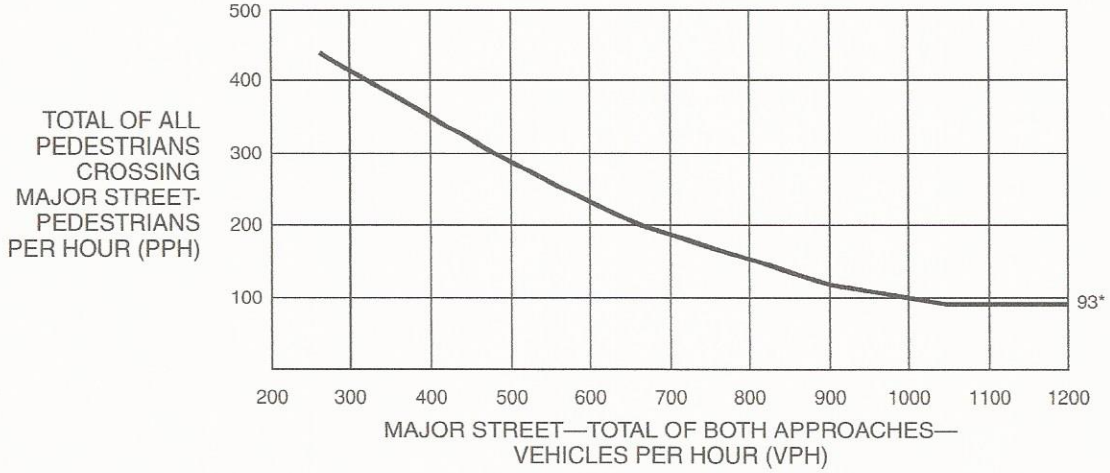
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied) — SATISFIED YES ☒ NO ☐

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N <1000 ft, S <1000 ft, E <1000 ft, W <1000 ft	Yes ☒ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☒ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied) — SATISFIED YES ☐ NO ☒

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		Yes ☐ No ☒
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied) — SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 733 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☒
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic	✓		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan	✓		
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☒ NA**

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	—	—
DIST	CO	RTE	PM

COUNT DATE EX.+App+Proj
CALC SAO DATE 6-6-14
CHK SAO DATE 6-6-14

Major St: Adolfo Road
Minor St: Camino Ruiz

Critical Approach Speed 45 mph
Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☒ NO ☐
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				4-5P	8-9A	5-6P	7-8A	12-1P	3-4P	6-7P	2-3P	Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	805	731	732	679	690	648	599	481	
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	122	83	129	76	163	125	128	108	

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)												Hour
	U	R	U	R									
APPROACH LANES	1		2 or More										
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)									
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)									

Combination of Conditions A & B SATISFIED YES ☐ NO ☐

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	✓	Yes ☒ No ☐
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC	✓	
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☒ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	12-1P	5-6P	6-7P	3-4P Hour
Both Approaches - Major Street		✓	690	732	599	648
Higher Approach - Minor Street	✓		163	129	128	125

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☒	No ☐

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☒**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

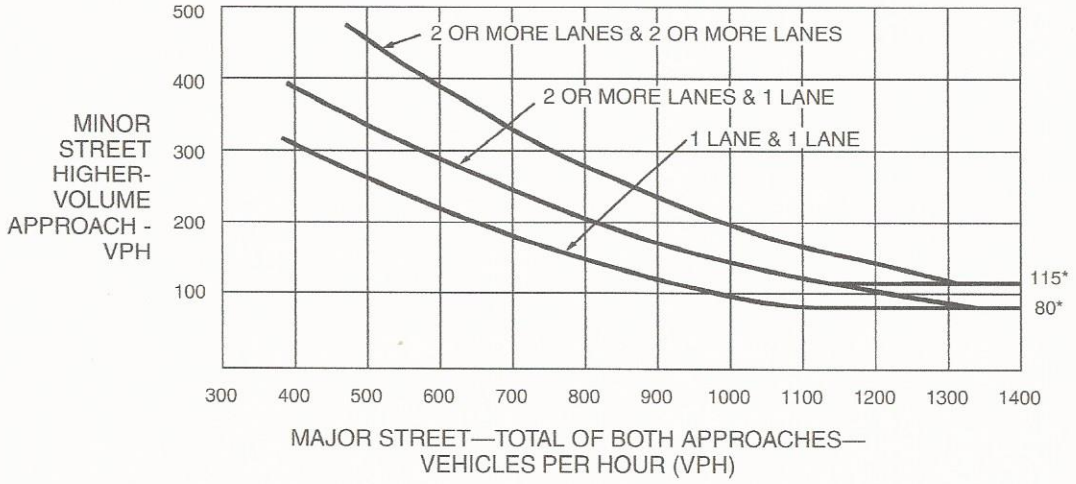
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	12-1P Hour
Both Approaches - Major Street		✓	690
Higher Approach - Minor Street	✓		163

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

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

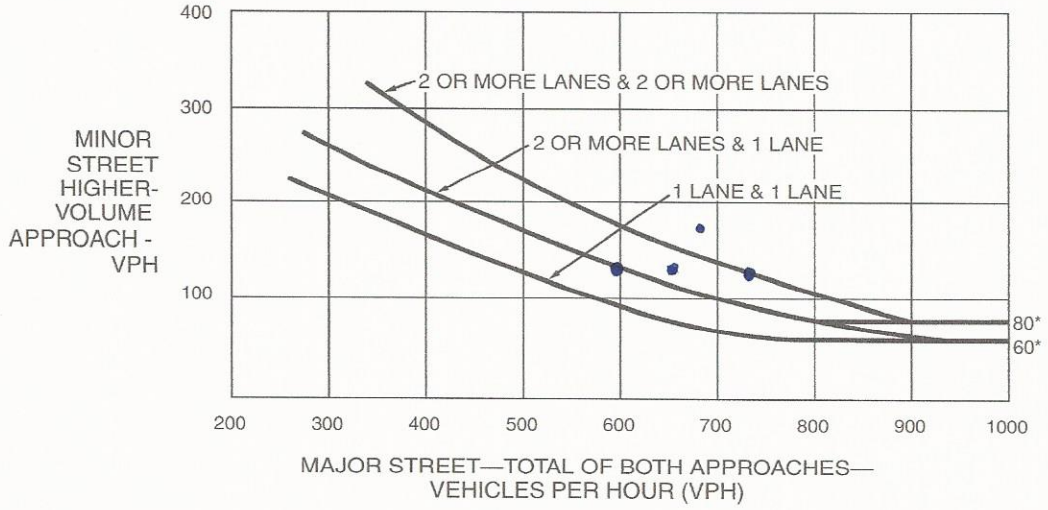
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

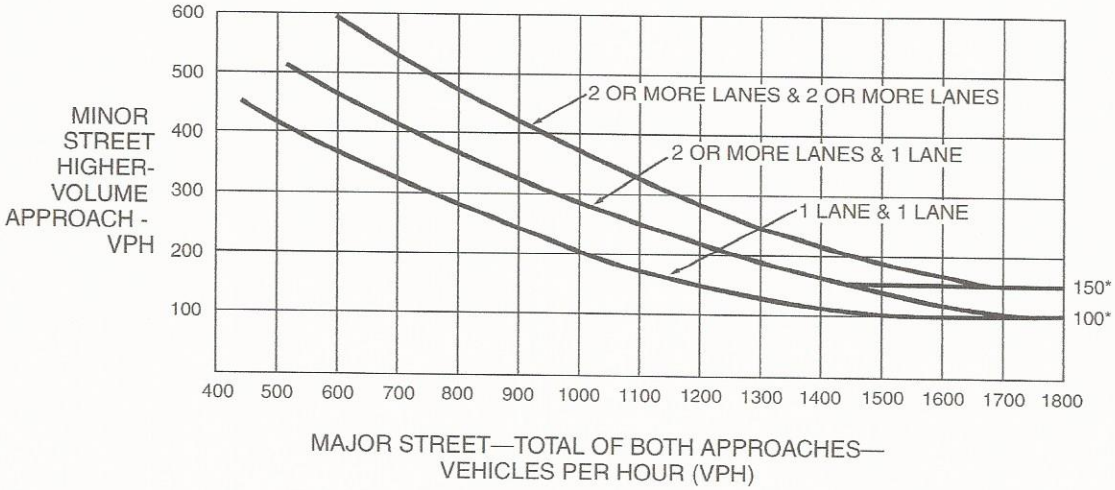
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

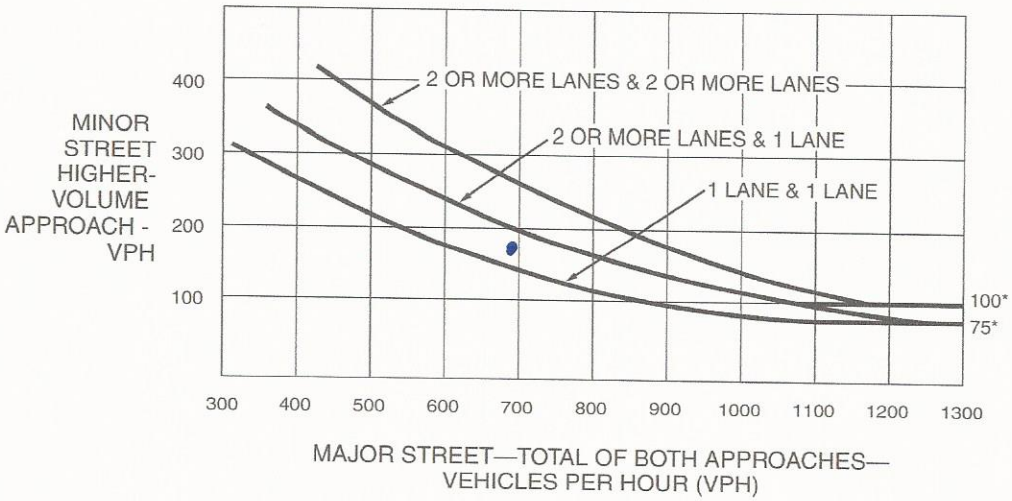
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume (Parts 1 and 2 Must Be Satisfied) — SATISFIED YES ☐ NO ☑

Part 1 (Parts A or B must be satisfied)

A.

Hours - - ->				
Vehicles per hour for any 4 hours				
Pedestrians per hour for any 4 hours	15	MAX		

MIN 75

Figure 4C-5 or Figure 4C-6 SATISFIED YES ☐ NO ☑

B.

Hours - - ->				
Vehicles per hour for any 1 hour				
Pedestrians per hour for any 1 hour	15	MAX		

MIN 93

Figure 4C-7 or Figure 4C-8 SATISFIED YES ☐ NO ☑

Part 2 — SATISFIED YES ☐ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐	No ☐

WARRANT 5 - School Crossing (Parts A and B Must Be Satisfied) — SATISFIED YES ☐ NO ☑ NA

Part A — SATISFIED YES ☐ NO ☐

Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes	YES ☐	NO ☐
AND Children > 20/hr	YES ☐	NO ☐

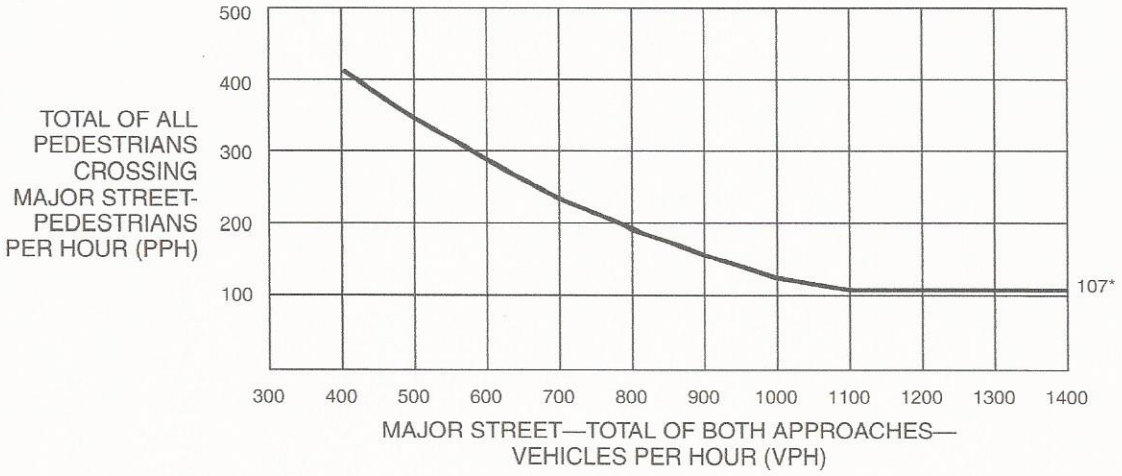
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B — SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

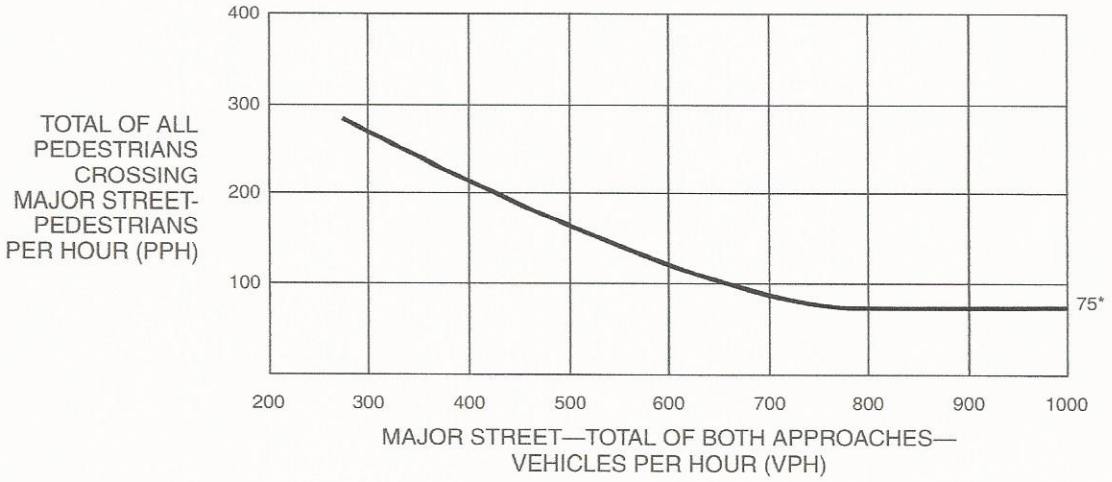
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



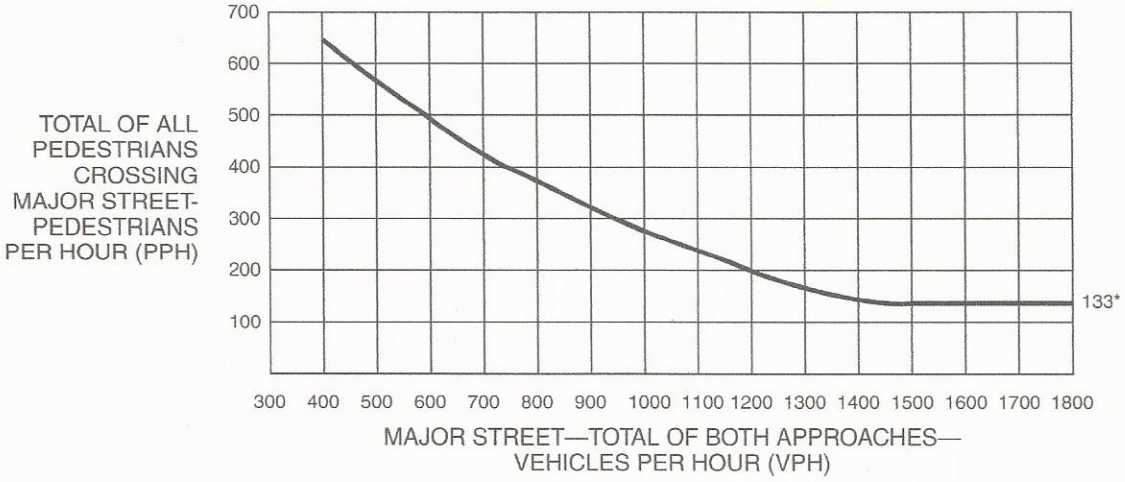
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



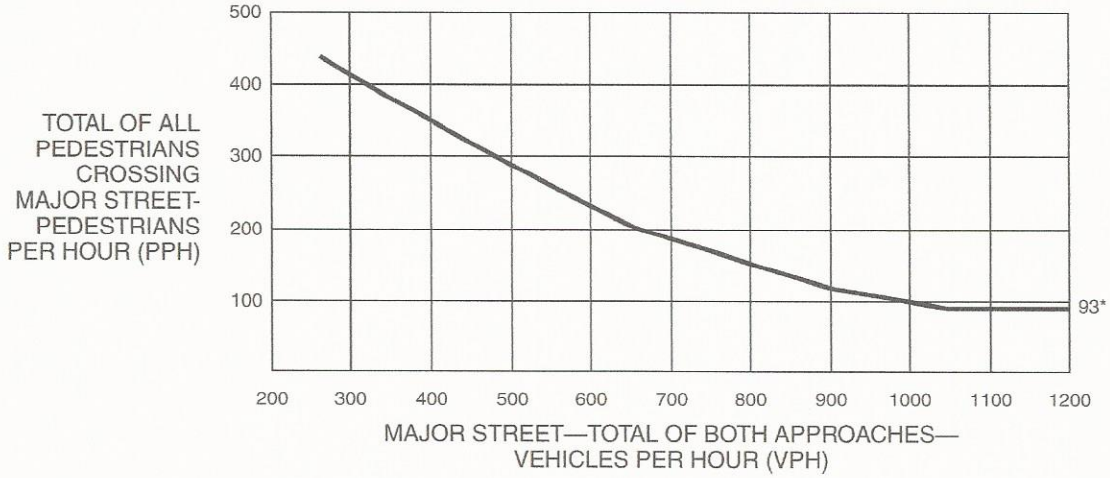
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied) — **SATISFIED YES ☒ NO ☐**

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N >1000 ft, S >1000 ft, E >1000 ft, W >1000 ft	Yes ☒ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☒ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied) — **SATISFIED YES ☐ NO ☒**

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	✓	Yes ☒ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	✓	
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied) — **SATISFIED YES ☐ NO ☒**

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 1027 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.	✓	Yes ☒ No ☐
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic	✓	
Rural or Suburban Highway Outside Of, Entering, or Traversing a City	✓	
Appears as Major Route on an Official Plan	✓	
Any Major Route Characteristics Met, Both Streets		Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☒ NA**

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH - **OR, There are two or more minor street approach lanes at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	Yes ☐ No ☐

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	NA	NA
DIST	CO	RTE	PM

COUNT DATE 4/10/14
CALC SAO DATE 5/3/14
CHK SAO DATE 5/3/14

Major St: Verdugo WAY
Minor St: CAMINO RUIZ

Critical Approach Speed 40 mph
Critical Approach Speed 25 mph

EXISTING CONDITIONS

Speed limit or critical speed on major street traffic > 40 mph..... ☒ or
In built up area of isolated community of < 10,000 population..... ☐ } RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7-8 AM	4-5 PM	1-2 PM	5-6 PM	8-9 AM	3-4 PM	12-1 PM	2-3 PM
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	457	376	363	344	329	311	301	265
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	111	68	89	71	100	66	129	79

Hour

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)								
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Hour

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	7-8 AM	4-5 PM	1-2 PM	5-6 PM Hour
Both Approaches - Major Street		✓	457	376	363	344
Higher Approach - Minor Street	✓		111	68	89	71

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☐**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	7-8 AM Hour
Both Approaches - Major Street		✓	457
Higher Approach - Minor Street	✓		111

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

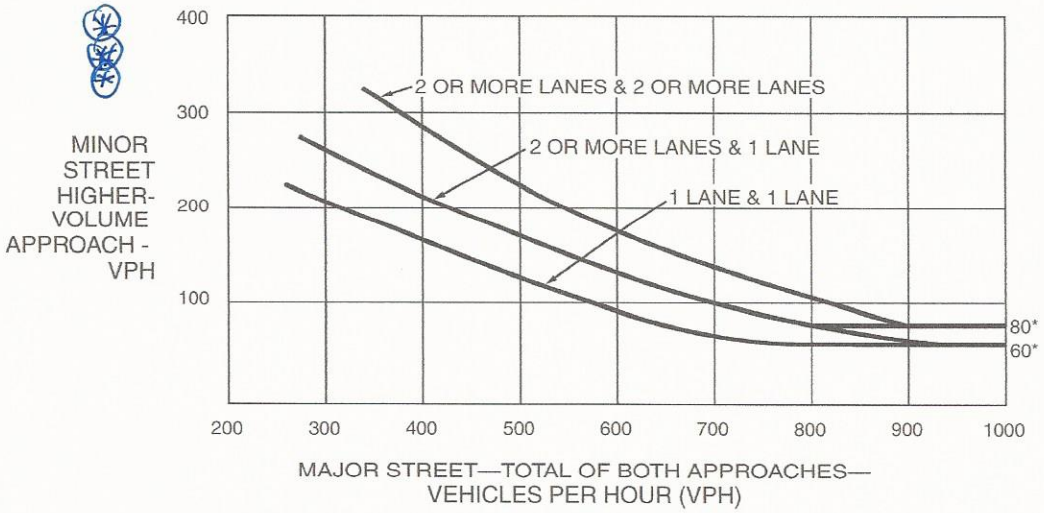
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume

*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

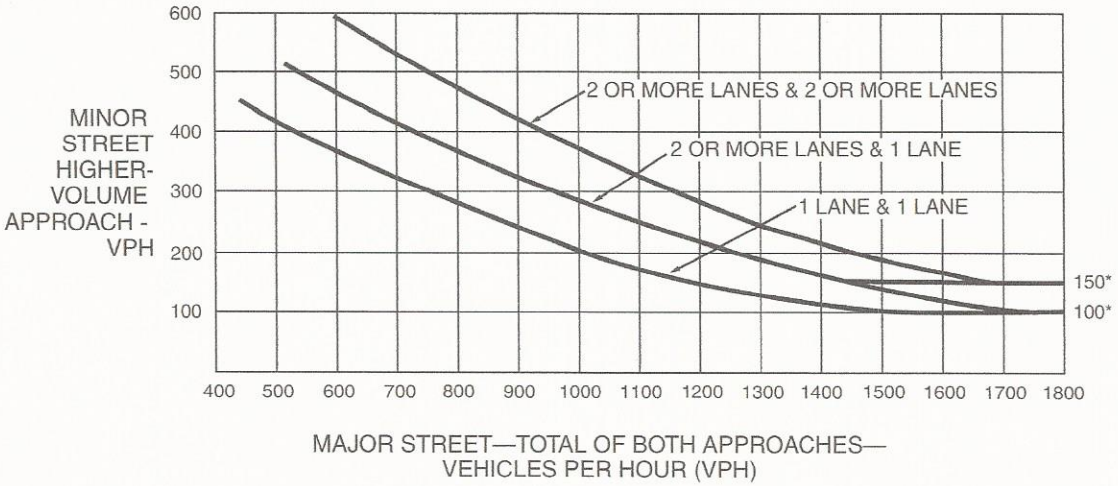
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

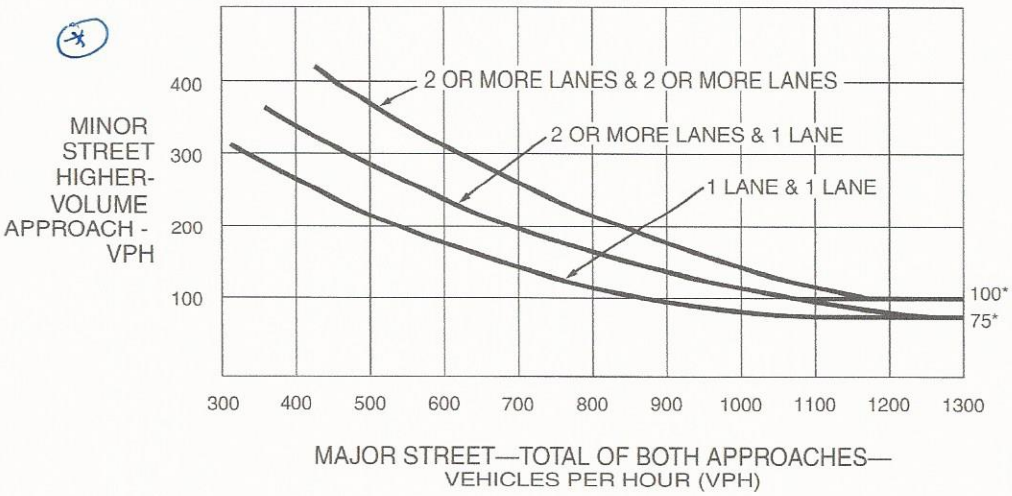
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume (Parts 1 and 2 Must Be Satisfied) SATISFIED YES ☐ NO ☒

Part 1 (Parts A or B must be satisfied)

A.

Hours - - ->				
Vehicles per hour for any 4 hours				
Pedestrians per hour for any 4 hours	4	15	5	9

Figure 4C-5 or Figure 4C-6 SATISFIED YES ☐ NO ☒

min 75

B.

Hours - - ->				
Vehicles per hour for any 1 hour				
Pedestrians per hour for any 1 hour	4	15	5	9

Figure 4C-7 or Figure 4C-8 SATISFIED YES ☐ NO ☒

min 93

Part 2 SATISFIED YES ☒ NO ☐

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☒	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☒	No ☐

WARRANT 5 - School Crossing (Parts A and B Must Be Satisfied) SATISFIED YES ☐ NO ☐

NA

Part A SATISFIED YES ☐ NO ☐

Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐

AND Children > 20/hr YES ☐ NO ☐

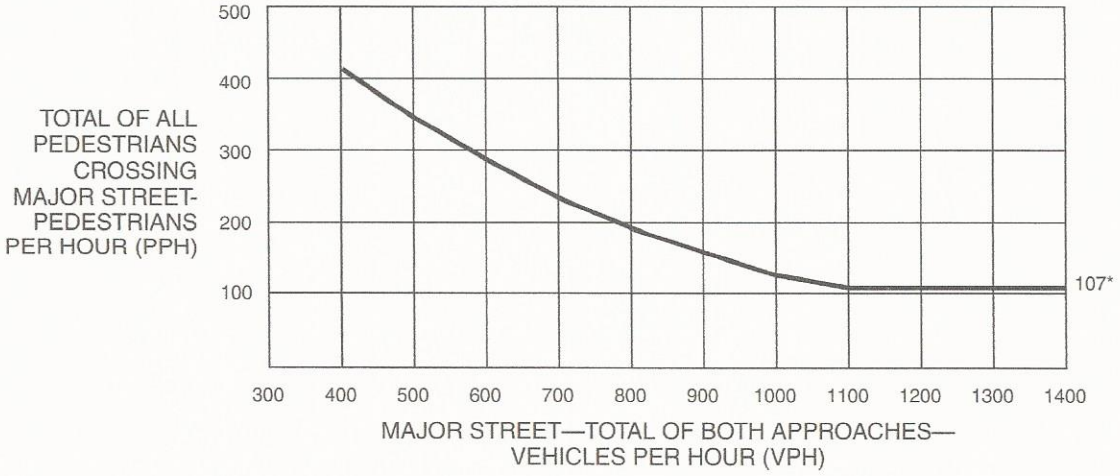
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

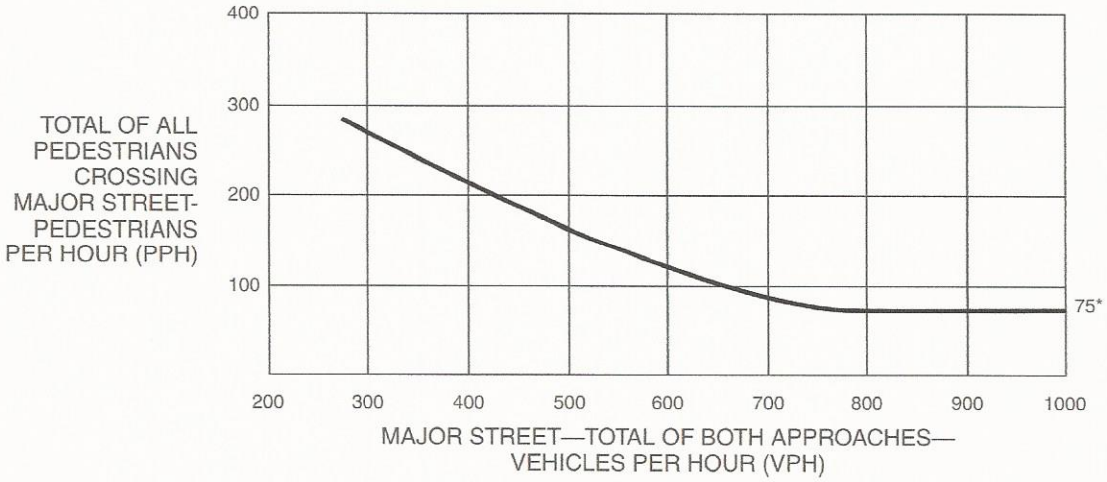
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



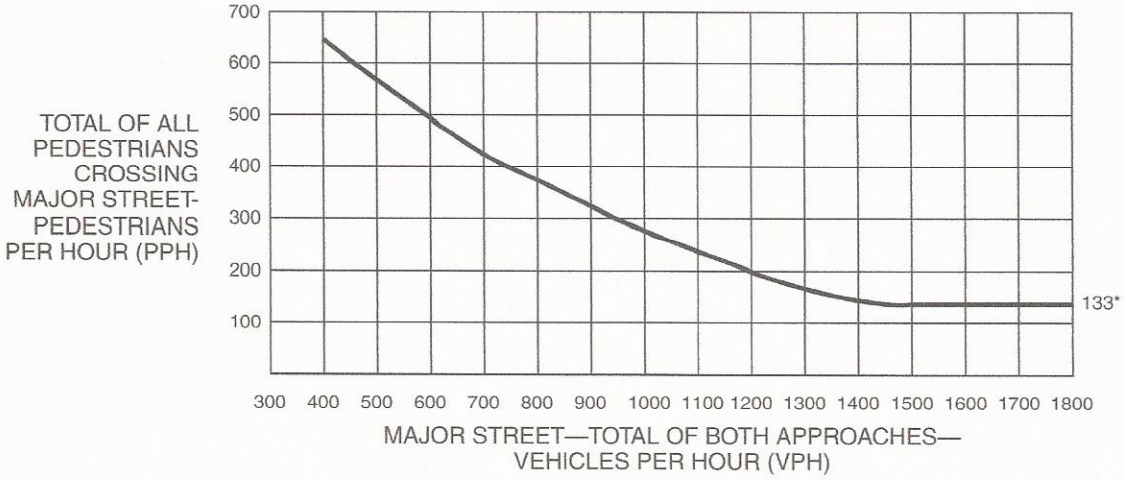
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



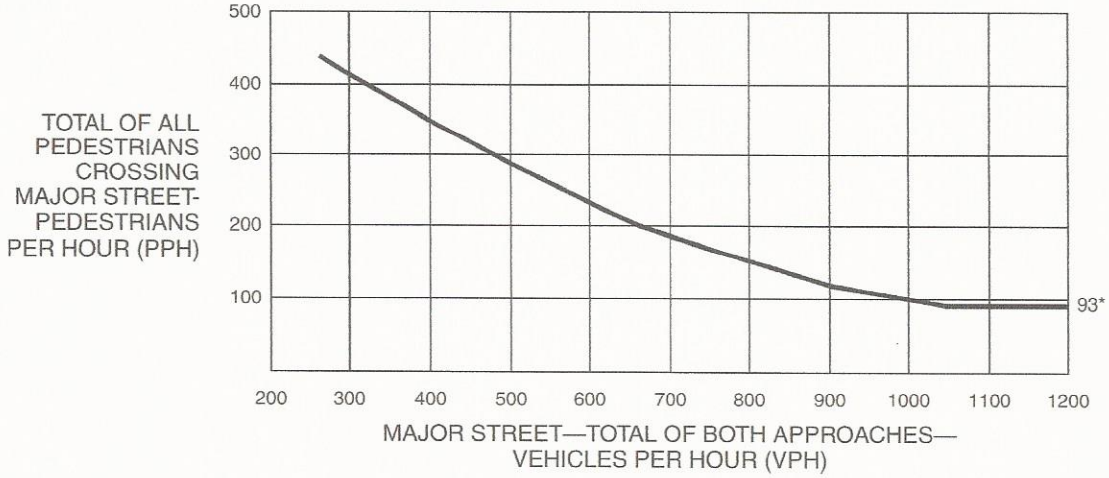
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied) SATISFIED YES ☒ NO ☐

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N >1000 ft, S >1000 ft, E >1000 ft, W >1000 ft	Yes ☒ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☒ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied) SATISFIED YES ☐ NO ☒

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	Yes ☐ No ☒
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume		
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic		
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied) SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 600 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☒
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic	✓		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan	✓		
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☒** NA

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH	Yes ☐ No ☐
OR, There are two or more minor street approach lanes at the track crossing - During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	—	—
DIST	CO	RTE	PM

COUNT DATE Ex+ APP
CALC SAO DATE 6-6-14
CHK SAO DATE 6-6-14

Major St: Verdugo Way
Minor St: CAMINO RUIZ

Critical Approach Speed 40 mph
Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☑
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)
☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)				7-8A	4-5P	1-2P	5-6P	8-9A	3-4P	12-1P	2-3P
	U	R	U	R								
APPROACH LANES	1		2 or More									Hour
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	603	491	463	424	909	391	421	345
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	111	68	89	71	100	66	129	79

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									Hour
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)			S	A	M	E		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME		Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☐**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	12-1P	7-8A	8-9A	1-2P	Hour
Both Approaches - Major Street		✓	421	603	409	463	
Higher Approach - Minor Street	✓		129	111	100	89	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour **SATISFIED YES ☐ NO ☐**
(Part A or Part B must be satisfied)

PART A **SATISFIED YES ☐ NO ☒**
(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

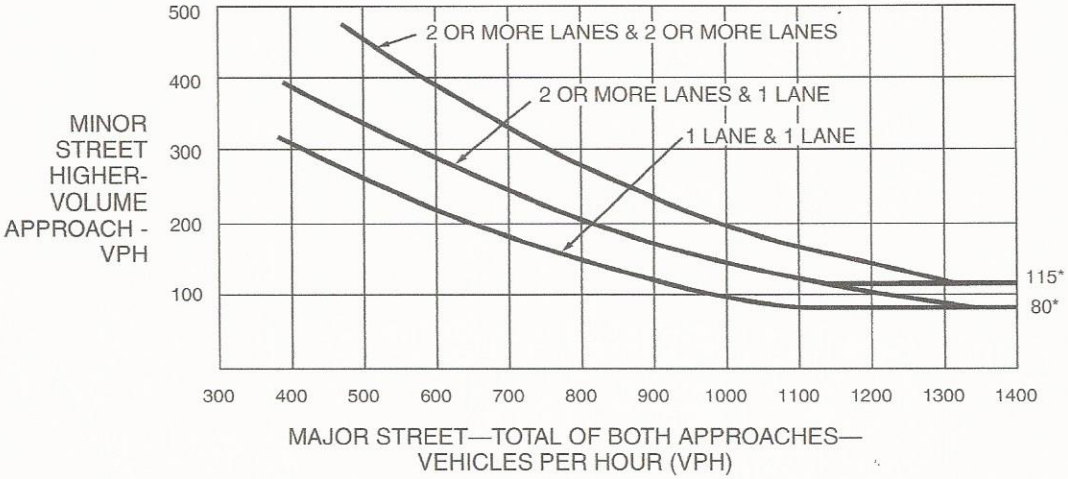
PART B **SATISFIED YES ☐ NO ☐**

APPROACH LANES	One	2 or More	12-1	Hour
Both Approaches - Major Street		✓	421	
Higher Approach - Minor Street	✓		129	

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

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

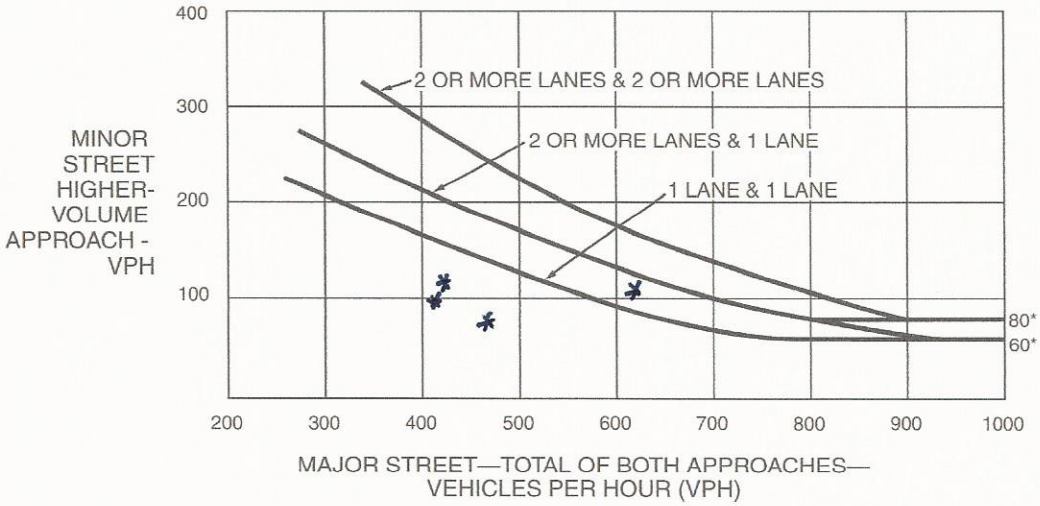
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

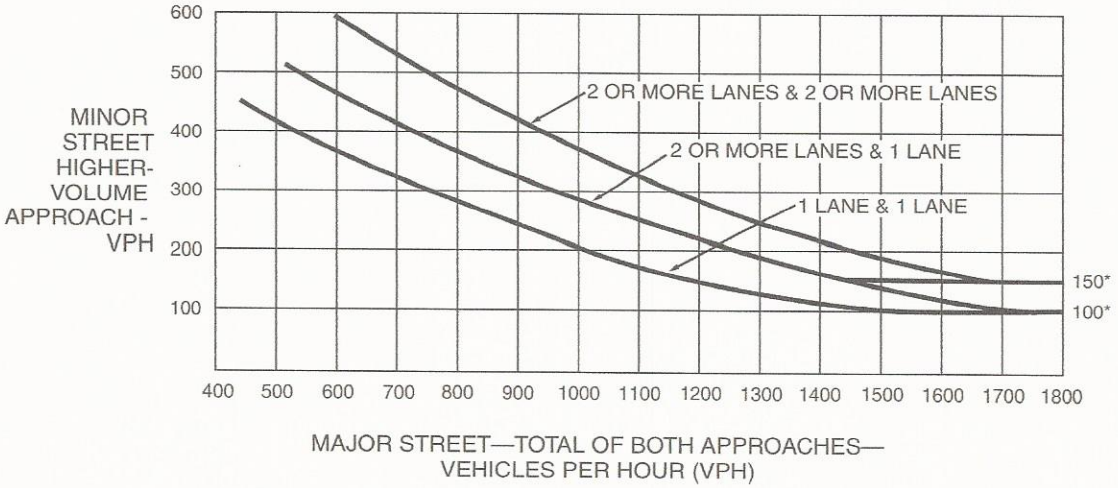
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

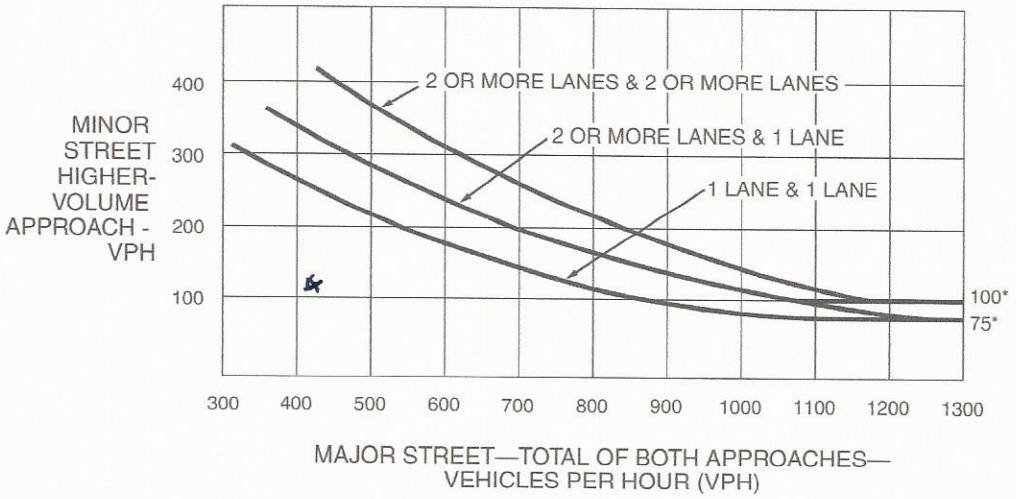
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume (Parts 1 and 2 Must Be Satisfied) SATISFIED YES ☐ NO ☒

Part 1 (Parts A or B must be satisfied)

A.

Hours - - ->				
Vehicles per hour for any 4 hours				
Pedestrians per hour for any 4 hours	9	MAX		

75min

Figure 4C-5 or Figure 4C-6 SATISFIED YES ☐ NO ☒

B.

Hours - - ->				
Vehicles per hour for any 1 hour				
Pedestrians per hour for any 1 hour	9	MAX		

93 min

Figure 4C-7 or Figure 4C-8 SATISFIED YES ☐ NO ☒

Part 2 SATISFIED YES ☐ NO ☒

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☒
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☐	No ☒

WARRANT 5 - School Crossing (Parts A and B Must Be Satisfied) SATISFIED YES ☐ NO ☒ NA

Part A SATISFIED YES ☐ NO ☒

Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐

AND Children > 20/hr YES ☐ NO ☐

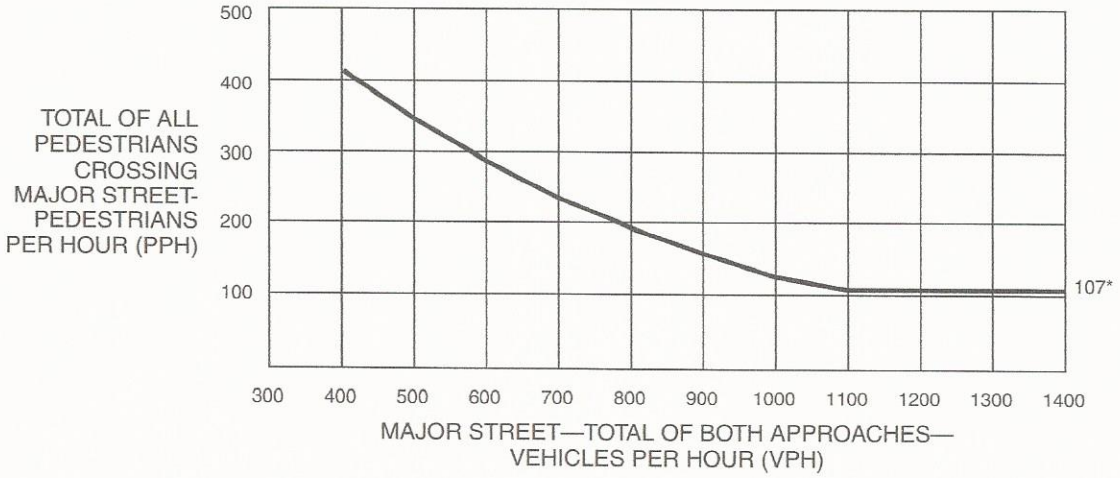
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B SATISFIED YES ☐ NO ☐

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

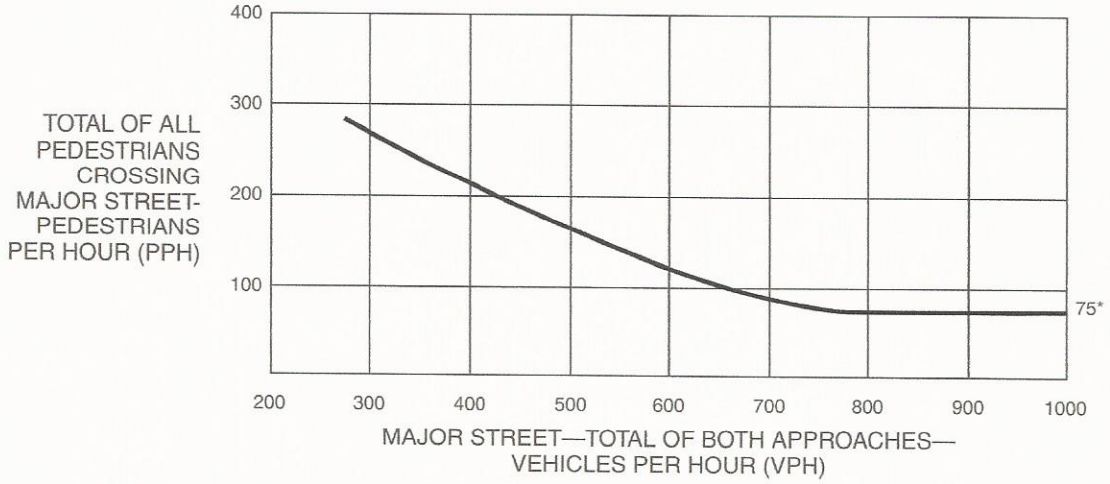
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



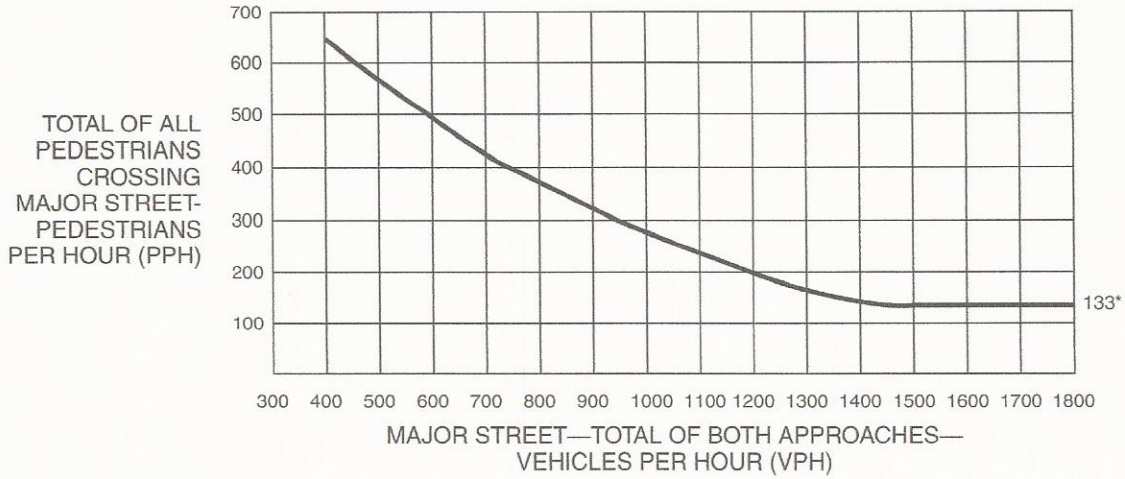
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



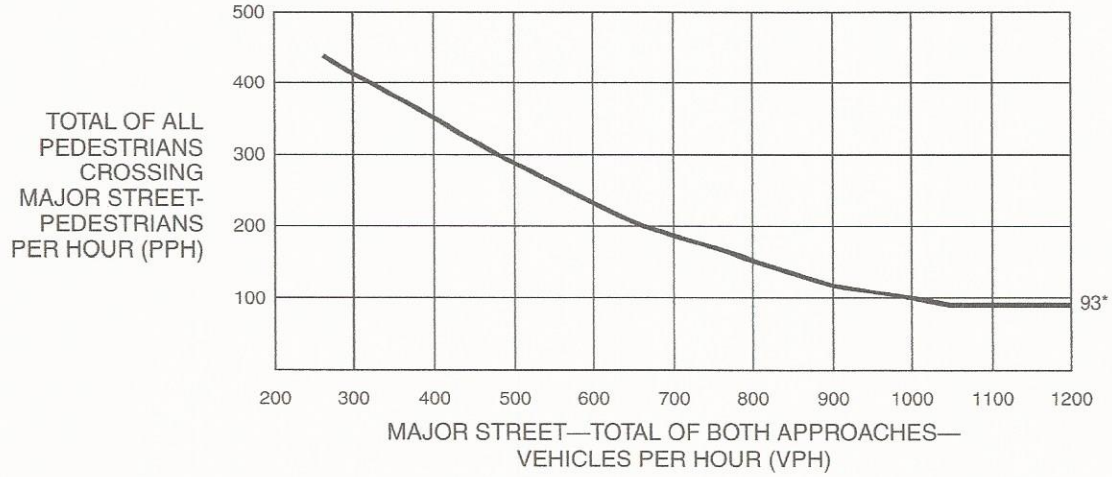
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied)

SATISFIED YES ☒ NO ☐

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N >1000 ft, S >1000 ft, E >1000 ft, W >1000 ft	Yes ☒ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☒ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☒
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☒
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	✓	Yes ☒ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	✓	
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied)

SATISFIED YES ☐ NO ☒

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 714 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☒
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B
Hwy. System Serving as Principal Network for Through Traffic	✓	
Rural or Suburban Highway Outside Of, Entering, or Traversing a City		
Appears as Major Route on an Official Plan	✓	
Any Major Route Characteristics Met, Both Streets		Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☐** NA

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH - **OR, There are two or more minor street approach lanes at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	Yes ☐ No ☐

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 1 of 5)

07	VEN	—	—
DIST	CO	RTE	PM

COUNT DATE Ex+App+Proj
CALC SAO DATE 6-6-14
CHK SAO DATE 6-6-14

Major St: Verdugo Way
Minor St: Camino Ruiz

Critical Approach Speed 40 mph
Critical Approach Speed 25 mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒
or
In built up area of isolated community of < 10,000 population..... ☐
} RURAL (R)

☐ URBAN (U)

WARRANT 1 - Eight Hour Vehicular Volume SATISFIED YES ☐ NO ☒
(Condition A or Condition B or combination of A and B must be satisfied)

Condition A - Minimum Vehicle Volume 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☒ NO ☐

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									
Hour					7-8A	4-5P	1-2P	5-6P	8-9A	3-4P	12-1P	2-3P
Both Approaches Major Street	500 (400)	350 (280)	600 (480)	420 (336)	603	577	575	550	509	486	466	405
Highest Approach Minor Street	150 (120)	105 (84)	200 (160)	140 (112)	118	91	109	93	106	87	151	100

Condition B - Interruption of Continuous Traffic 100% SATISFIED YES ☐ NO ☒
80% SATISFIED YES ☐ NO ☒

	MINIMUM REQUIREMENTS (80% SHOWN IN BRACKETS)											
	U	R	U	R								
APPROACH LANES	1		2 or More									
Hour												
Both Approaches Major Street	750 (600)	525 (420)	900 (720)	630 (504)			S	A	M	E		
Highest Approach Minor Street	75 (60)	53 (42)	100 (80)	70 (56)								

Combination of Conditions A & B SATISFIED YES ☐ NO ☒

REQUIREMENT	CONDITION	✓	FULFILLED
TWO CONDITIONS SATISFIED 80%	A. MINIMUM VEHICULAR VOLUME	✓	Yes ☐ No ☒
	AND, B. INTERRUPTION OF CONTINUOUS TRAFFIC		
AND, AN ADEQUATE TRIAL OF OTHER ALTERNATIVES THAT COULD CAUSE LESS DELAY AND INCONVENIENCE TO TRAFFIC HAS FAILED TO SOLVE THE TRAFFIC PROBLEMS			Yes ☐ No ☒

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume **SATISFIED* YES ☐ NO ☒**

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	12-1P	7-8A	1-2P	8-9A	Hour
Both Approaches - Major Street		✓	466	603	575	509	
Higher Approach - Minor Street	✓		151	118	109	106	

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
OR, All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☒

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied) **SATISFIED YES ☐ NO ☒**

PART A **SATISFIED YES ☐ NO ☒**

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND	Yes ☐	No ☒
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☐	No ☒

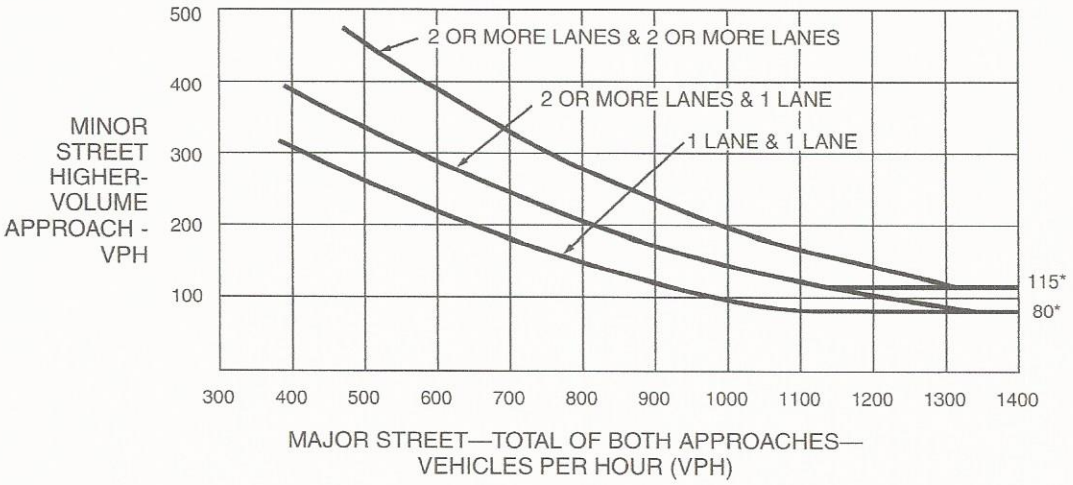
PART B **SATISFIED YES ☐ NO ☒**

APPROACH LANES	One	2 or More	12-1P	Hour
Both Approaches - Major Street		✓	466	
Higher Approach - Minor Street	✓		151	

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
OR, The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☐	No ☒

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

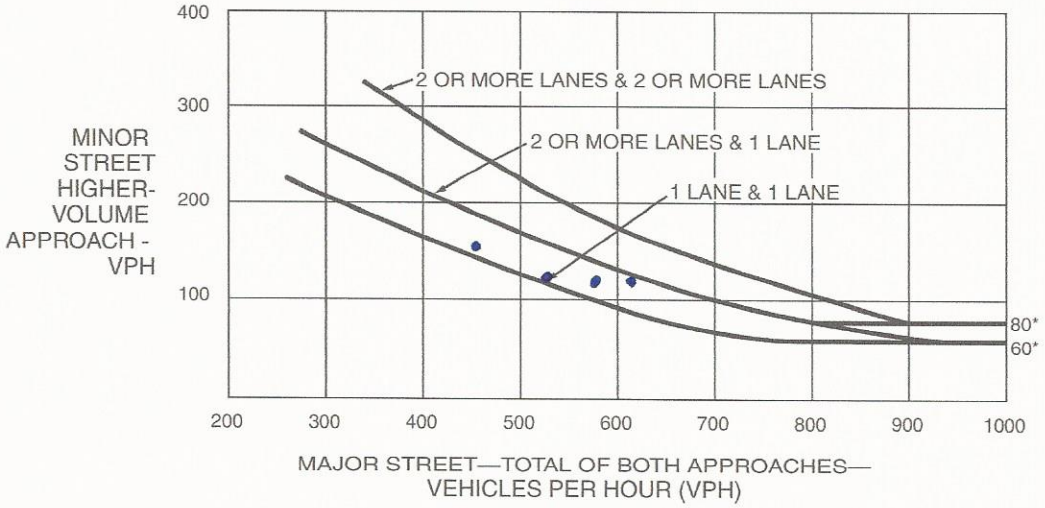
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

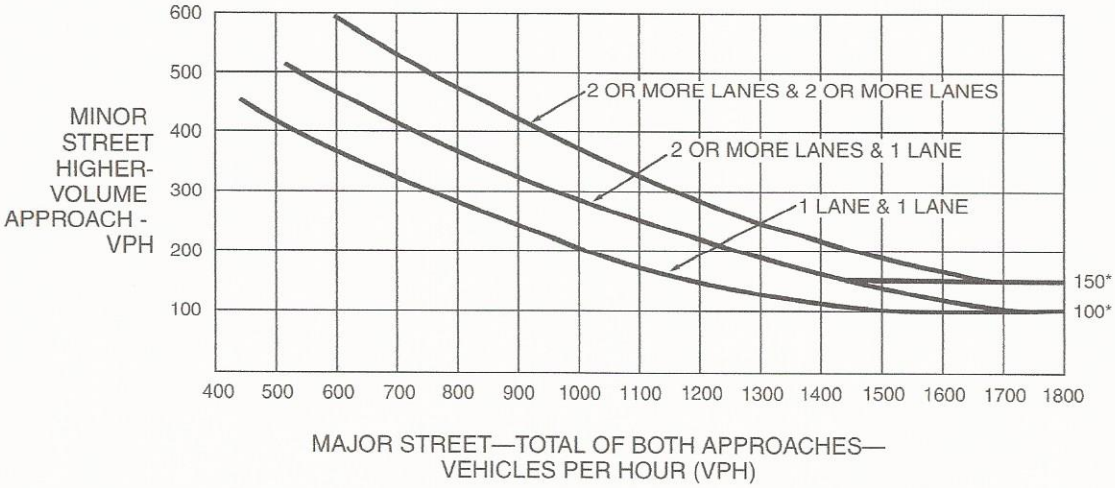
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

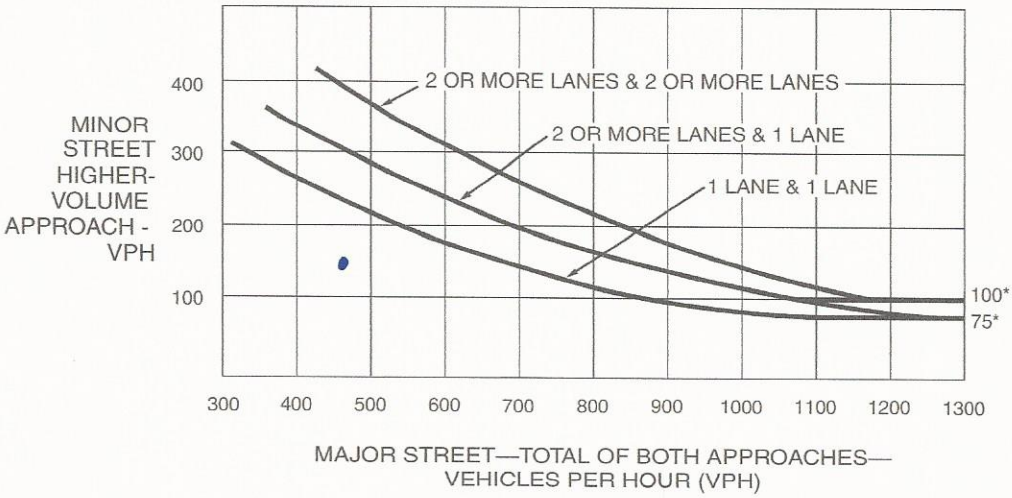
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 3 of 5)

WARRANT 4 - Pedestrian Volume
(Parts 1 and 2 Must Be Satisfied)

SATISFIED YES ☐ NO ☒

Part 1 **(Parts A or B must be satisfied)**

A.

Hours - - ->				
Vehicles per hour for any 4 hours				
Pedestrians per hour for any 4 hours	9	MAX		

75 min

Figure 4C-5 or Figure 4C-6
SATISFIED YES ☐ NO ☒

B.

Hours - - ->				
Vehicles per hour for any 1 hour				
Pedestrians per hour for any 1 hour	9	MAX		

93 min

Figure 4C-7 or Figure 4C-8
SATISFIED YES ☐ NO ☒

Part 2 **SATISFIED YES ☒ NO ☐**

AND, The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☒	No ☐
OR, The proposed traffic signal will not restrict progressive traffic flow along the major street.	Yes ☒	No ☐

WARRANT 5 - School Crossing
(Parts A and B Must Be Satisfied)

SATISFIED YES ☐ NO ☒

NA

Part A **SATISFIED YES ☐ NO ☒**
Gap/Minutes and # of Children

		Hour
Gaps vs Minutes	Minutes Children Using Crossing	
	Number of Adequate Gaps	
School Age Pedestrians Crossing Street / hr		

Gaps < Minutes YES ☐ NO ☐
AND Children > 20/hr YES ☐ NO ☐

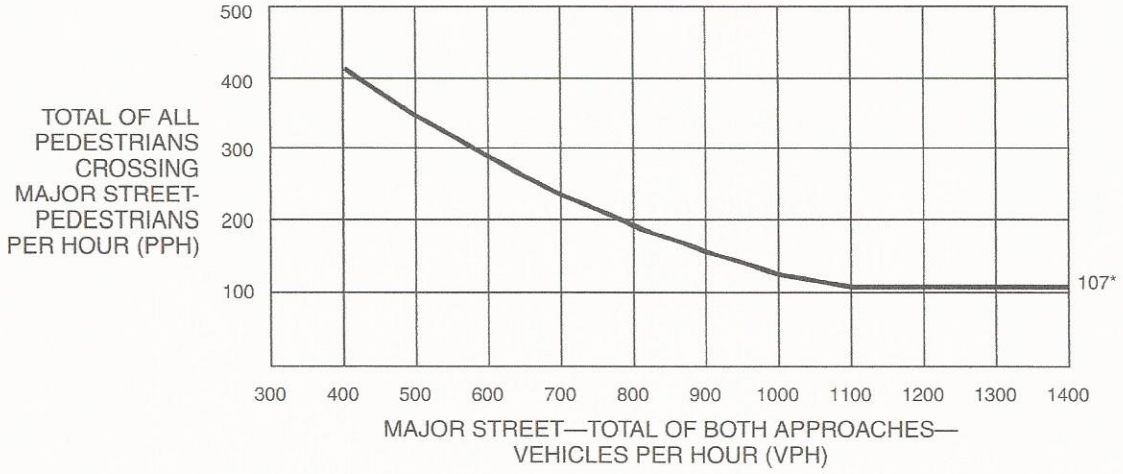
AND, Consideration has been given to less restrictive remedial measures.	Yes ☐	No ☐

Part B **SATISFIED YES ☐ NO ☐**

The distance to the nearest traffic signal along the major street is greater than 300 ft	Yes ☐	No ☐
OR, The proposed signal will not restrict the progressive movement of traffic.	Yes ☐	No ☐

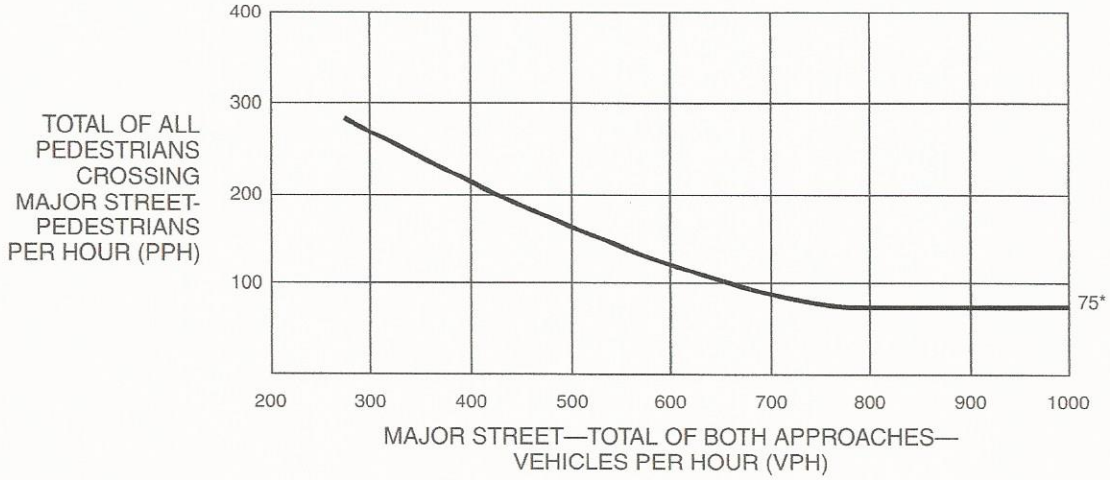
The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



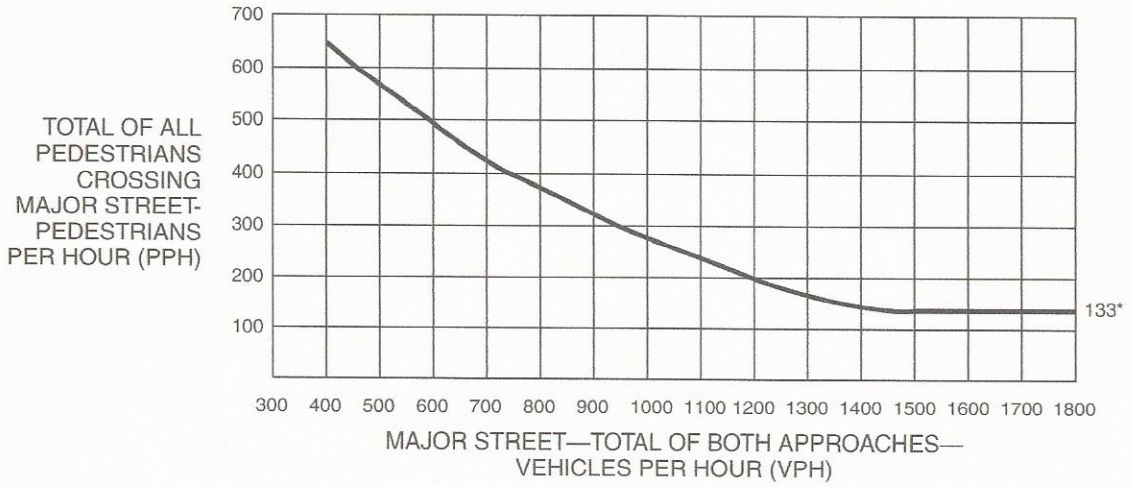
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



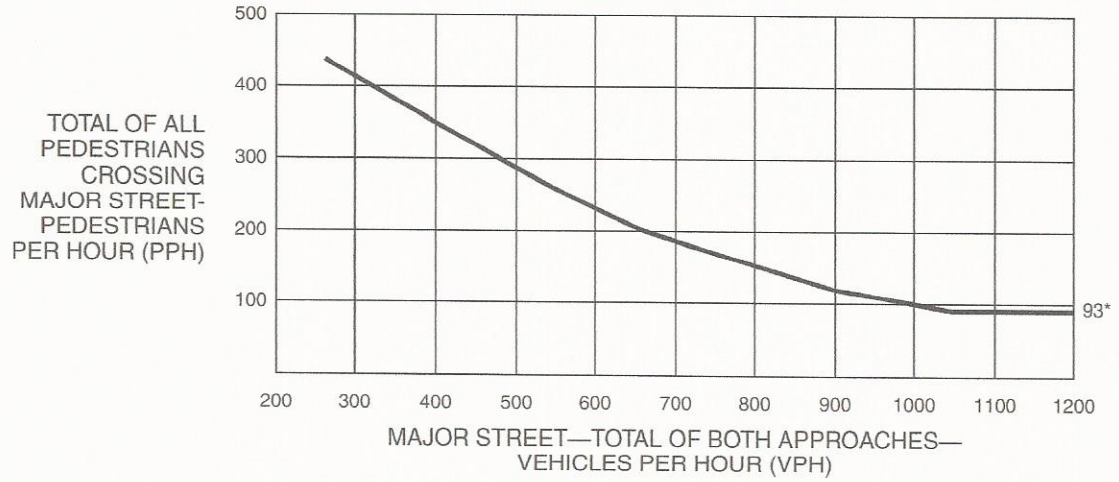
*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)



*Note: 93 pph applies as the lower threshold volume.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 4 of 5)

WARRANT 6 - Coordinated Signal System (All Parts Must Be Satisfied) — SATISFIED YES ☑ NO ☐

MINIMUM REQUIREMENTS	DISTANCE TO NEAREST SIGNAL	
≥ 1000 ft	N >1000 ft, S >1000 ft, E >1000 ft, W >1000 ft	Yes ☑ No ☐
On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.		Yes ☑ No ☐
OR, On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.		

WARRANT 7 - Crash Experience Warrant (All Parts Must Be Satisfied) — SATISFIED YES ☐ NO ☑

Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency.			Yes ☐ No ☑
REQUIREMENTS <5	Number of crashes reported within a 12 month period susceptible to correction by a traffic signal, and involving injury or damage exceeding the requirements for a reportable crash.		Yes ☐ No ☑
5 OR MORE			
REQUIREMENTS	CONDITIONS	✓	
ONE CONDITION SATISFIED 80%	Warrant 1, Condition A - Minimum Vehicular Volume	✓	Yes ☑ No ☐
	OR, Warrant 1, Condition B - Interruption of Continuous Traffic	✓	
	OR, Warrant 4, Pedestrian Volume Condition Ped Vol ≥ 152 for any hour OR, Ped Vol ≥ 80 for any 4 hours		

WARRANT 8 - Roadway Network (All Parts Must Be Satisfied) — SATISFIED YES ☐ NO ☑

MINIMUM VOLUME REQUIREMENTS	ENTERING VOLUMES - ALL APPROACHES	✓	FULFILLED
1000 Veh/Hr	During Typical Weekday Peak Hour 820 Veh/Hr and has 5-year projected traffic volumes that meet one or more of Warrants 1, 2, and 3 during an average weekday.		Yes ☐ No ☑
	OR During Each of Any 5 Hrs. of a Sat. or Sun _____ Veh/Hr		

CHARACTERISTICS OF MAJOR ROUTES	MAJOR ROUTE A	MAJOR ROUTE B	
Hwy. System Serving as Principal Network for Through Traffic	✓		
Rural or Suburban Highway Outside Of, Entering, or Traversing a City			
Appears as Major Route on an Official Plan	✓		
Any Major Route Characteristics Met, Both Streets			Yes ☐ No ☑

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

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 5 of 5)

WARRANT 9 - Intersection Near a Grade Crossing (Both Parts A and B Must Be Satisfied) **SATISFIED YES ☐ NO ☒ NA**

PART A A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach. Track Center Line to Limit Line _____ ft	Yes ☐ No ☐
PART B **There is one minor street approach lane at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-9. Major Street - Total of both approaches: _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calculate AF) = _____ VPH - **OR, There are two or more minor street approach lanes at the track crossing -** During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point falls above the applicable curve in Figure 4C-10. Major Street - Total of both approaches : _____ VPH Minor Street - Crosses the track (one direction only, approaching the intersection): _____ VPH X AF (Use Tables 4C-2, 3, & 4 below to calcualte AF) = _____ VPH	Yes ☐ No ☐

The minor street approach volume may be multiplied by up to three following adjustment factors (AF) as described in Section 4C.10.

1- Number of Rail Traffic per Day_____ Adjustment factor from table 4C-2____

2- Percentage of High-Occupancy Buses on Minor Street Approach_____ Adjustment factor from table 4C-3____

3- Percentage of Tractor-Trailer Trucks on Minor Street Approach_____ Adjustment factor from table 4C-4____

NOTE: If no data is availale or known, then use AF = 1 (no adjustment)

Appendix E

Stormwater Management Plan

Post Construction Stormwater Management Plan

5/1/2013

City of Camarillo
Public Works Department - Stormwater Division
805-383-5659

The City of Camarillo requires all applicable development and redevelopment projects to submit this Post Construction Stormwater Management Plan (PCSMP) with the Public Works Department approval with the project application. A fee deposit of $2,000 to the City of Camarillo will also be required with submittal of PCSMP.

The PCSMP is an electronic based tool located on the following spreadsheet tabs. Please read the instructions on the second tab for specific instructions and be sure to include the required attachments listed on the "submittal list" tab.

This PCSMP must be approved by the Public Works Department before the project application will be deemed complete for processing.
If you have any questions regarding the PCSMP, please contact Anita Kuhlman, Stormwater Program Manager, at 805-383-5659 or akuhlman@ci.camarillo.ca.us

INSTRUCTIONS

► The following set of spreadsheets are intended to assist project applicants in meeting the Planning and Land Development requirements contained in Part 4, Section E of the Los Angeles Regional Water Quality Control Board's municipal separate storm sewer system (MS4) permit (Order R4-2010-0108) for new development and redevelopment projects.

► The spreadsheets are not intended to replace the 2011 Technical Guidance Manual (TGM). The 2011 TGM is referenced in multiple locations and should be consulted for additional guidance on complying with the Planning and Land Development requirements. Specifically, definitions and details on site assessment and BMP selection can be found in the 2011 TGM.

► The 0.75-inch storm event (2011 TGM Methodology #3) is used as the stormwater quality design volume (SQDV) throughout the workbook; applicants should not use this workbook if using a methodology other than Methodology #3.

► Project applicants should fill out each applicable spreadsheet; when complete, make sure to print "entire workbook."

► A few additional tips:
- All green boxes denote a numeric input.
- Blue cells indicate that text should be included.
- Follow prompts where applicable.
- When finished filling out the applicable steps, go to "Submittal List" for additional required project submittals.

VENTURA COUNTYWIDE STORMWATER QUALITY PROGRAM
POST-CONSTRUCTION STORMWATER MANAGEMENT PLAN (PCSMP)
FOR
Mission Oaks Apartments
PARCEL #: APNs 160-0-091-125, -055, -065, -105

Project Name: Mission Oaks Apartments

Preparation/Revision Date: **28-May-14**

Prepared for:
Name of Owner/Developer: PB Companies
Stress Address: 412 Marsh Street
City, State, Zip Code: San Luis Obispo, CA 93401
Telephone: (805) 542-9900

Prepared by:
Name and Title of Preparer: Scott D. Meckstroth, Senior Engineer
Company Name: Penfield and Smith
Stress Address: 1327 Del Norte Road, Suite 200
City, State, Zip Code: Camarillo, CA, 93010
Telephone: (805) 981-0706

I hereby certify that the information provided in this Application is correct.

Application Prepared by: Scott D. Meckstroth, Penfield and Smith
Print Name and Firm

Signed
Signature of Project Engineer in the Firm Named Above

Title Civil Engineer RCE No. 63337, Exp. 06/30/16
Affix Professional registration stamp of the person named above with signature and expiration date

Project Name: Mission Oaks Apartments

STEP 1: DETERMINE PROJECT APPLICABILITY

Instructions:
For new development projects, answer yes, no, or NA to questions (1) - (10) below.
For redevelopment projects , answer yes, no, or NA to questions (11) - (13) below.

NEW DEVELOPMENT PROJECTS	
Does the new development project fall within categories (1) - (10) below?	
Project Type and/or Characteristics	**Y/N/NA**
1) Development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area **→go to Step 2**	Y
2) Industrial parks with 10,000 square feet or more of total altered surface area **→go to Step 2**	
3) Commercial strip malls with 10,000 square feet or more of impervious surface area **→go to Step 2**	
4) Retail gasoline outlets with 5,000 square feet or more of total altered surface area **→go to Step 2**	
5) Restaurants (Standard Industrial Classification (SIC) of 5812) with 5,000 square feet or more of total altered surface area **→go to Step 2**	
6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces **→go to Step 2**	
7) Streets, roads, highways, and freeway construction of 10,000 square feet or more of impervious surface area **→ go to Roadway Projects**	
8) Automotive service facilities (Standard Industrial Classification (SIC) of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) of 5,000 square feet or more of total altered surface area **→go to Step 2**	
9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will: a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and b. Create 2,500 square feet or more of impervious surface area **→go to Step 2**	

10) Single-family hillside homes (see Section 2 of the TGM for specific requirements) **→go to SF Hillside**	

Project Name: Mission Oaks Apartments

PROJECT APPLICABILITY, CONT.

REDEVELOPMENT PROJECTS	
For redevelopment projects that fall within categories (1) through (9) above, and that conduct land-disturbing activities that result in the creation, or addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site, answer questions 11-13 below.Existing single-family dwelling and accessory structures are exempt from redevelopment projects unless such projects create, add, or replace 10,000 square feet of impervious surface area.	
Project Type and/or Characteristics	**Y/N/NA**
11) Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to the post development stormwater quality control requirements of Board Order 00-108, these projects must mitigate the entire redevelopment project area **→go to Step 2**	
12) Projects where redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was subject to the post development stormwater quality control requirements of Board Order 00-108, the project must mitigate only the altered portion of the redevelopment project area and not the entire project area **→go to Step 2**	
13) Projects where redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development these projects must mitigate only the altered portion of the redevelopment project area and not the entire project area **→go to Step 2**	

Project Name: Mission Oaks Apartments

STEP 2: ASSESS SITE CONDITIONS

Provide an assessment of the project site using the following tables

New Development Project General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	8.70
Total Disturbed Area	8.70
Total Existing (Pre-Project) Impervious Area	0.00
Post-Project Impervious Area [1]	6.00
Area of Green Roof (ET-1) [1]	
Area Draining to Hydrologic Source Controls (ET-2) [1]	
Revised Post-Project Impervious Area	6.00
Project Imperviousness (%)	69.00%

Redevelopment Project General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	
Total Altered Area [6]	
Total Existing (Pre-Project) Impervious Area	
Was existing (pre-project) impervious area subject to post-development stormwater quality control requirements? [2]	
Amount of Existing Impervious Area Altered [3]	
Amount of Impervious Area Added	
% Alteration of Existing Impervious Area [4]	N/A
Post-Project Impervious Area (Impervious Area to be Mitigated) [1], [4]	0.00
Area of Green Roof (ET-1) [1]	
Area Draining to Hydrologic Source Controls (ET-2) [1]	
Revised Post-Project Impervious Area	0.00
Project Imperviousness (%) [5]	

Project Name: Mission Oaks Apartments

Project Description

Briefly describe project:
The intent of the Mission Oaks Project is to develop four parcels in the Mission Oaks community of Camarillo, with a combined total area of approximately 8.7 acres, into a High-Density Residential development.
Describe current and proposed zoning and land use designation:
The site is currently undeveloped land consisting of open brush. Based on the City's zoing guide, the site is zoned as LM (Limited Manufacturing)
Describe topography of project area. Identify low and high points and the location of steep slopes (provide a range of grades):
The site generally slopes in an easterly direction at a mild slope of about one percent, on average, towards Camino Ruiz. Existing elevations range between 125 and 115 feet above sea level.
Describe the site's soil types (A, B, C, D) and geological conditions
Per the Ventura County Soils Map the project site is located in an area with Soil Number 5. Per the Vefntura County Technical Guidance Manual (TGM), Soil Number 5 is within Group B soils which are typically silty loams or loams. They have a moderate infiltration rate when thoroughly wetted and consist chiefly of moderately deep to deep and moderately well to well drained soils with moderately fine to moderately coarse texture. The range for the measured infiltration rate is 0.65 to 0.91 in/hr (0.78 in/hr average used in calculations). *Attach soil type information*

Project Name: Mission Oaks Apartments

Project Description, cont'd

Describe the site's groundwater conditions (e.g. depth to seasonal high groundwater):
According to the Web Soil Survey Report of the project site, downloaded from the USDA Natural Resources Conservation Service website, the depth to water table is more than 80 inches. A more detailed elevation will be provided once a geotechincal report is prepared for the project.

Is there offsite drainage on the site? If so, identify the location(s) and source(s) of offsite drainage and the volume of water running onto the site:
No offsite run-on is anticipated on the project site.
Describe any existing utilities within the project area that would limit the possible locations of certain BMPs:
Based on the known elevations for the existing utilities, it is not a a limiting factor in the possible locations of certain BMPs at this time.
Describe any environmentally sensitive areas (e.g. riparian areas, wetlands) within the project area:
There are currently no known environmentally sensitive areas within the project area.

Geotechnical considerations:	
Does the site contain any of the following characteristics:	**Y/N/NA**
Collapsible Soil	N
Expansion Soil	N
Potential for seismically-inducted soil liquefaction	N
Additional considerations:	
The geotechnical considerations above are based on the soil type characteristics. A site specific geotechnical report will be conducted to confirm the assumptions. *Attach relevant geotechnical information*	

Project Name: Mission Oaks Apartments

STEP 2: POLLUTANTS OF CONCERN

Pollutants of Concern (See Section 3.3 of 2011 TGM)

Activity / Potential Land Uses	Potential Pollutant*								
	Sediment	Nutrients	Metals	Pesticides	Oxygen Demanding Substances	Toxic Organics	Oil & Grease	Bacteria	Trash and Debris
Parking Lots	X		X		X	X			X
Other [fill in if necessary]									
Other [fill in if necessary]									

*Denote potential pollutant with "x"

Receiving Waterbody Listings (see Section 3.3. of 2011 TGM)

Receiving Waterbody (watershed indicated in parentheses)	**Constituent Group [7]**	**Distance to Project (ft)**
Calleguas Creek watershed above Potrero Rd (Calleguas Creek)	Bacteria, Salts, Trash, Metals, Nutrients, Pesticides, PCBs, Sediment	3100.00
Other [fill in if necessary]		

[1] Applicant should enter post-project impervious cover prior to accounting for green roof and hydrologic source control (HSC) credits. Volume reduction provided by green roofs and HSCs are accounted for implicitly in the sizing calcuations for BMPs by assuming the roof area covered by a green roof or the area draining to a HSC is pervious rather than impervious when caluclating the runoff coefficient for the site. Green roofs and HSCs are not required to be considered for all project locations and types. **In order to obtain credit, Green Roofs and HSCs must be designed as specified in the 2011 TGM.** Additional detail on Green Roofs (ET-1) and HSCs (ET-2) can be found in Section 6 of the 2011 TGM.

[2] Land-disturbing activity that results in the creation or addition or replacement of less than 5,000 square feet of impervious surface area on an already developed site, or that results in a decrease in impervious area which was subject to the post development stormwater quality control requirements of Board Order 00-108, is not subject to mitigation unless so directed by the local permitting agency

[3] Redevelopment does not include routine maintenance activities that are conducted to maintain the original line and grade, hydraulic capacity, or original purpose of the facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and roadways, that does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Agencies' flood control, drainage, and wet utilities projects that maintain original line and grade or hydraulic capacity are considered routine maintenance. Redevelopment also does not include the repaving of existing roads to maintain original line and grade.

[4] "% Alteration of Existing Impervious Area" determines the 50% threshold which is key in determining portion of site that must comply with post-construction requirements - see Step 1 redevelopment categories for more detail. The amount of "Post Project Impervious Area" that must adhere to post-construction requirements is dependant on 50% threshold

[5] "Project Imperviousness" is calculated using the "Total Project Area" except when redevelopment projects that must mitigate only the altered portion of the redevelopment project area. In this case, the "Total Disturbed Area" is used to calculate "Project Imperviousness"

[6] For the purposes of this calculation, Total Altered Area shall mean any area that is altered as a result of land disturbance, such as clearing, grading, grubbing, and excavation. This excludes areas used exclusively for temporary stockpiling.

[7] If a waterbody is listed for "toxicity" and the cause and/or contribution to toxicity is known, then the consituent group known to contribute to toxicity are listed here (in lieu of listing "toxicity")

Project Name: Mission Oaks Apartments

STEP 3: APPLY SITE DESIGN PRINCIPLES AND TECHNIQUES

Provide a brief description of site design principles and techniques included within the proposed project site.

Site Design Measures [1]	Included? Y/N/NA	Brief Description of the Site Design Measure
Site Planning	Y	The site has been raised to allow conveyance of runoff via overland and pipe flows toward the stormwater detention and bioretention basins prior to discharging offsite. Pre-treament BMPs will be implemented.
Protect and Restore Natural Areas	N	The site is currently undeveloped land consisting of open brush. Due to the project type, high density residential, mass grading is required for development of the site. Landscape areas are incorporated in the plan.
Minimize Land Disturbance	N	Due to the project type, high density residential, mass grading is required for development of the site.
Minimize Impervious Cover	Y	Landscaped areas, planter areas, and a bioretention basin is incorporated in the plan.
Apply LID at Various Scales	Y	The use of landscaped areas and the bioretention basin will help reduce the effective imperviousness of the site by treating and retaining onsite stormwater runoff.
Implement Integrated Water Resource Management Practices	Y	Infiltration of stormwater runoff and selection of drought-tolerant landscaping.

[1] Refer to Section 4.2 - 4.7 of the 2011 TGM for applicable Design Criteria.

Project Name: Mission Oaks Apartments

STEP 4: APPLY SOURCE CONTROL MEASURES

Provide a brief description of the source control measures included in the proposed project site.

Site-Specific Source Control Measures[1]	Included? Y/N/NA	Brief Description of the Source Control Measure
S-1: Storm Drain Message and Signage	Y	Storm drain signage will be implemented.
S-2: Outdoor Material Storage Area Design	Y	An area(s) will be designated for material storage.
S-3: Outdoor Trash Storage and Waste Handling Area Design	Y	An area(s) will be designated for trash storage and waste handling.
S-4: Outdoor Loading/Unloading Dock Area Design	Y	Loading/unloading areas will be designated for construction deliveries.
S-5: Outdoor Repair/Maintenance Bay Design	Y	An area will be designated for repair/maintenance of construction equipment.
S-6: Outdoor Vehicle /Equipment/ Accessory Washing Area Design	Y	A concrete washout area will be designated on site.
S-7: Fueling Area Design	Y	An area will be designated for equipment fueling and constructed per the standards of the California Stormwater BMP Handbook - Construction, NS-9.
S-8: Proof of Control Measure Maintenance	Y	A maintenance plan will be provided.

[1] Refer to Fact Sheets in Section 5 of the 2011 TGM for detailed information and design criteria

Project Name: Mission Oaks Apartments

STEP 5: APPLY BMPS TO REDUCE EIA TO <=5%

New development and redevelopment projects (Categories 1-6, 8, and 9) must reduce EIA to <=5%

Step 5a: Calculate Allowable EIA

EIA is defined as impervious area that is hydrologically connected via sheet flow over a hardened conveyance or impervious surface without any intervening medium to mitigate flow volume.

The allowable "EIA" for a project is calculated as:

$$EIA_{allowable} = (A_{project})*(\%_{allowable}) \qquad \text{Equation 2-1}$$

Where:

$EIA_{allowable}$ = The maximum impervious area from which runoff can be treated and discharged offsite (and not retained onsite) [acres]

$A_{project}$ = The total project area [acres] [1]

$\%_{allowable}$ = 5 percent

Input:		Units
$A_{project}$ [1]	8.70	Acres
$\%_{allowable}$	5.00%	Percent
$EIA_{allowable}$	**0.44**	Acres

Step 5b: Calculate Impervious Area to be Retained

The impervious area from which runoff must be retained onsite is the total impervious area minus the EIA allowable, which should be calculated as follows:

$$A_{retain} = TIA - EIA_{allowable} = (IMP*A_{project}) - EIA_{allowable} \qquad \text{Equation 2-2}$$

Where:

A_{retain} = the drainage area from which runoff must be retained [acres]

TIA = total impervious area [acres]

IMP = imperviousness of project area (%)

Input:		Units
Imperviousness	69.00%	
$A_{project}$ [1]	8.70	Acres
$EIA_{allowable}$	0.44	Acres
A_{retain}	**5.57**	Acres

Project Name: Mission Oaks Apartments

BMPS TO REDUCE EIA TO <=5%, CONT.

Step 5c: Calculate the Volume to be Retained (SQDV)

The runoff volume that is to be retained onsite should be calculated using Equation 2-3 below:

$$V_{retain} = C*(0.75/12)*A_{retain} \qquad \text{Equation 2-3}$$

Where:

V_{retain} = The stormwater quality design volume (SQDV) that must be retained onsite [ac-ft]

C = runoff coefficient (equals 0.95 for impervious surfaces)

Input:		**Units**
C	0.95	
A_{retain}	5.57	Acres
V_{retain}	0.331	ac-ft
	107,727.1	gallons
	14,400.9	cu.ft.

Continue to Step 5d

Project Name: Mission Oaks Apartments

STEP 5d: SELECT RETENTION BMPs

Select and size Retention BMPs to meet the 5% EIA Requirement. Retention BMPs include INF1-6, RWH-1, and ET 1 and 2. See 2011 TGM, Section 6 for more information.

Retention BMPs	Included? Y/N	Drainage Area Retained (acres) [2]	Drainage Area Runoff Coefficient	Volume Retained (SQDV) (ac-ft) [1],[2]	If not applicable, state brief reason
Infiltration BMPs					
INF-1: Infiltration Basin			0.95		Bioretention BMP suitable to treat entire site.
INF-2: Infiltration Trench			0.95		Bioretention BMP suitable to treat entire site.
INF-3: Bioretention	Y	5.57	0.95	0.331	
INF-4: Drywell			0.95		Bioretention BMP suitable to treat entire site.
INF-5: Permeable Pavement			0.95		Bioretention BMP suitable to treat entire site.
INF-6: Proprietary Infiltration			0.95		Bioretention BMP suitable to treat entire site.
Rainwater Harvesting BMPs					
RWH-1: Rainwater Harvesting			2		Bioretention BMP suitable to treat entire site.
TOTAL Volume Retained				0.331	ac-ft
				107,727.1	gallons
				14,400.9	cu.ft.
REMAINING Volume to meet 5% EIA requirement				0.0	ac-ft
				0	gallons
				0	cu.ft.

[1] SQDV Methodology #3 used here.
[2] If a Retention BMP is used more than once on a site (i.e., 2 Infiltration Trenches implemented on one site) then drainage area and volume retained shown here should be additive. A separate BMP sizing worksheet (see Appendix E of the 2011 TGM) should be submitted for each BMP.

ADDITIONAL INSTRUCTIONS: Retention BMPs must be used onsite to the maximum extent practicable. If the remaining volume to meet 5% EIA cannot be met, then project applicants must demonstrate technical infeasibilty. Consult Section 3.2 of the 2011 TGM for infeasability criteria. A technical infeasability site-specific analysis must be submitted. Projects that cannot prove technical infeasibility must reduce EIA to <=5% using Retention BMPs.

If onsite Retention BMPs cannot feasibly be used to meet the 5% EIA Requirement, move onto Step 5e; if 5%EIA Requirement is met go to Step 7

	Y/N/NA
A completed copy of the applicable "BMP Sizing Worksheet(s)" for the project's Retention BMPs from Appendix E of the 2011 TGM is included as an attachment. BMPs must be sized to meet the SQDV or SQDF (See Section 2 Step 7 of the 2011 TGM).	Y

Project Name: Mission Oaks Apartments

STEP 5e: SELECT AND SIZE BIOFILTRATION BMPS TO REDUCE EIA TO <=5%

New development and redevelopment projects that demonstrate technical infeasibility (see Section 3.2 of 2011 TGM) for reducing EIA to <= 5% using Retention BMPs are eligible to use Biofiltration BMPs to achieve the 5% EIA Requirement.

	Y/N
Is it technically infeasible for Retention BMPs to meet the 5% EIA Requirement?	N
If yes, volume-based biofiltration BMPs shall be sized to treat 1.5 times the volume not retained using Retention BMPs.	

The onsite biofiltered volume ($V_{biofilter}$), should be calculated as follows:

$$V_{biofilter} = (V_{retain} - V_{achieved}) * 1.5 \qquad \text{Equation 2-4}$$

Where:

$V_{biofilter}$ = the volume that must be captured and treated in a Biofiltration BMP [ac-ft]

V_{retain} = the stormwater quality design volume (SQDV) that must be retained [ac-ft]

$V_{achieved}$ = the volume retained onsite using Retention BMPs [ac-ft]

Input		**Units**
$V_{achieved}$	0.331	ac-ft
V_{retain}	0.331	ac-ft
$V_{biofilter}$	**0.00**	ac-ft
	0	gallons
	0	cu.ft.

BIOFILTRATION BMPs, CONT.

Biofiltration BMPs	Included? Y/N	Drainage Area Biofiltered (acres) [3]	Drainage Area Runoff Coefficient	Volume Biofiltered (1.5xSQDV) (ac-ft) [2],[3]	If not applicable, state brief reason
BIO-1: Bioretention with Underdrain			0.95		
BIO-2: Planter Box			0.95		
BIO-3: Vegetated Swale [1]			0.95		
BIO-4: Vegetated Filter Strip [1]			0.95		
BIO-5: Proprietary Biotreatment [1]			0.95		
TOTAL Volume Biofiltered				0.00	ac-ft
				0.0	gallons
				0.0	cu.ft
REMAINING Volume to be addressed by Alternative Compliance				0.00	ac-ft
				0.0	gallons
				0.0	cu.ft

[1] BIO-3 and BIO-4 are flow-based and should be calculated using SQDF for sizing (see Table 2-1 of the TGM for the applicable design criteria for sizing). The SQDV is shown here for 5% EIA Requirement compliance purposes only.
[2] SQDV Methodology #3 used here.
[3] If a Biofiltration BMP is used more than once on a site (e.g., 2 Planter Boxes implemented on one site) then drainage area and volume biofiltered shown here be additive. A separate BMP sizing worksheet (see Appendix E of the 2011 TGM) should be submitted for each BMP.

ADDITIONAL INSTRUCTIONS: Certain new development and redevelopment project types are eligible for alternative compliance measures if onsite Retention and/or Biofiltration BMPs cannot feasibly be used to meet the 5% EIA requirement. Infeasibility is described in Section 3.2 of the 2011 TGM. A technical feasability site-specific analysis must be submitted. Projects that cannot prove infesibility must reduce EIA to <=5%.

If onsite Retention BMPs and/or Biofiltration BMPs cannot feasibly be used to meet the 5% EIA standard, move onto Step 6, otherwise, skip Step 6.

	Y/N/NA
A completed a copy of the applicable "BMP Sizing Worksheet(s)" for the project's Biofiltration BMPs from Appendix E of the 2011 TGM is included as an attachment.. BMPs must be sized to meet the 1.5 times SQDV or SQDF (see Section 2, Step 7 of the 2011 TGM) requirement. Guidance on flow based design for 150% sizing provided in Table 2-1 of the 2011 TGM.	N/A

Project Name: Mission Oaks Apartments

STEP 6: ALTERNATIVE COMPLIANCE [1], [2]
Mitigation Volume

► *Alternative compliance options will be based on the "mitigation volume." The mitigation volume is the difference between the volume of runoff associated with 5% EIA and the volume of runoff associated with the actual EIA achieved onsite less than or equal to 30% EIA.*
► *The offsite mitigation requirement for EIA is excess of 30% (>30%) is 1.5 times the amount of stormwater not managed onsite.*
► *Applicants must contact the local approval agency before proceeding with Alternative Compliance*

6a) Determine the volume of runoff that is retained and biofiltered onsite ($V_{ret/bio}$) using the equation below:

$$V_{ret/bio} = (V_{achieved} + (V_{biofiltered}/1.5)) \qquad \text{Equation 2-5}$$

Where:

$V_{ret/bio}$ = the total volume of runoff retained and/or biofiltered onsite using Retention and Biofiltration BMPs [ac-ft]
$V_{achieved}$ = the runoff volume retained onsite [ac-ft]
$V_{biofiltered}$ = the runoff volume biofiltered onsite [ac-ft]

Eqn. 2-5		**Units**
$V_{achieved}$	0.331	ac-ft
$V_{biofiltered}$	0.000	ac-ft
$V_{ret/bio}$	**0.331**	ac-ft
	107,727.1	gallons
	14,400.9	cu.ft.

6b) Determine the Mitigation Volume ($V_{mitigation}$) @ 1:1 ratio, using the equation below:

$$V_{mitigation} = V_{retain} - V_{ret/bio} \qquad \text{Equation 2-6}$$

Where:
$V_{mitigation}$ = the volume of runoff that must be mitigated offsite [ac-ft]
V_{retain}= the SQDV that must be retained onsite per the 5% EIA requirement calculated in Equation 2-3 [ac-ft]

$V_{ret/bio}$ = the total volume of runoff retained and/or biofiltered onsite using Retention and Biofiltration BMPs calculated in Equation 2-5 [ac-ft]

Eqn. 2-6		**Units**
V_{retain}	0.331	ac-ft
$V_{ret/bio}$	0.331	ac-ft
$V_{mitigation}$	**0.000**	ac-ft
	0.0	gallons
	0.0	cu.ft.

Project Name: Mission Oaks Apartments

ALTERNATIVE COMPLIANCE, CONT.

6c) Determine whether EIA is reduced to <= 30% EIA

6c-1: Calculate area associated with 30% EIA ($A_{30\%eia}$)

$$A_{30\%eia} = (IMP*A_{project}) - (30\%*A_{project})$$ Equation 2-7

Where:

$A_{30\%eia}$ = the impervious portion of the drainage area retained or biofiltered at 30% EIA [acres]
IMP = total imperviousness of project area (%)
$A_{project}$ = the total project area [acres]

Eqn. 2-7		**Units**
IMP	69%	
$A_{project}$	8.70	acres
$A_{30\%eia}$	**3.39**	acres

6c-2:Calculate volume retained or biofiltered onsite at 30% EIA ($V_{30\%eia}$):

$$V_{30\%eia} = C*(0.75/12)*A_{30\%eia}$$ Equation 2-8

Where:

$V_{30\%eia}$ = SQDV retained or biofiltered at 30% EIA [ac-ft]
(note: for the purposes of this calculation, the biofiltered volume does not include the 1.5 multiplier)
C = runoff coefficient (equals 0.95 for impervious surfaces)

$A_{30\%eia}$ = the impervious area from which runoff would have been retained or biofiltered at 30% EIA [acres]

Eqn. 2-8		**Units**
C	0.95	
$A_{30\%eia}$	3.39	acres
$V_{30\%eia}$	**0.201**	ac-ft
	65,646.2	gallons
	8,775.6	cu.ft.

Project Name: Mission Oaks Apartments

ALTERNATIVE COMPLIANCE, CONT.

6d) Determine if the project's current EIA is greater than, equal to, or less than the volume at 30% EIA ($V_{30\%eia}$)

$V_{ret/bio}$ = the total volume of runoff retained and/or biofiltered onsite using Retention and Biofiltration BMPs [ac-ft]
$V_{30\%eia}$ = SQDV retained or biofiltered at 30% EIA [ac-ft]

$V_{30\%eia}$	0.201	ac-ft
$V_{ret/bio}$	0.331	ac-ft
Your project's EIA is	**LESS THAN**	30%

Less than or equal to (<=) 30% EIA → go to Step 6e

Greater than (>) 30% EIA → go to Step 6f-g

[1] In order to simplify the use of the spreadsheet, these steps deviate from those presented in the 2011 TGM
[2] References to equations (e.g., Equation 2-5) refer to equations contained within the 2011 TGM

Projects w/ EIA<=30%

6e) Pursue Alternative Compliance for $V_{mitigation}$ at 1:1 Ratio

$V_{mitigation}$ = the volume of runoff that must be mitigated offsite [ac-ft] calculated in Equation 2-6

$V_{mitigation}$	**0.000**	ac-ft
	0.0	gallons
	0.0	cu.ft.

The site is required to mitigate the following volume:

0.000	ac-ft
0.0	gallons
0.0	cu.ft.

Continue to Step 7

Project Name: Mission Oaks Apartments

ALTERNATIVE COMPLIANCE, CONT.

Projects with EIA > 30%

When the EIA of the project exceeds 30% due to infeasibility, the runoff volume associated with the EIA up to 30% must be mitigated offsite at a one-to-one ratio and the runoff volume associated with the EIA greater than 30% must be mitigated offsite at 1.5 times the volume.

6f) Determine the Mitigation Volume for 30% EIA ($V_{mitigation30\%}$), using the equation below:

$$V_{mitigation30\%} = V_{Retain} - V_{30\%EIA} \qquad \text{Equation 2-11}$$

Where:

$V_{mitigation30\%}$ = the mitigation volume for 30% EIA [ac-ft]

V_{retain}= the SQDV that must be retained onsite per the 5% EIA requirement calculated in Equation 2-3 [ac-ft]

$V_{30\%eia}$ = SQDV at 30% EIA [ac-ft]

		Units
V_{retain}	N/A	ac-ft
$V_{30\%eia}$	N/A	ac-ft
$V_{mitigation30\%}$	**N/A**	ac-ft
		gallons
		cu.ft.

6g) Determine the Mitigation Volume for >30% EIA ($V_{mitigation>30\%}$), using the equation below:

$$V_{mitigation>30\%} = (V_{30\%eia} - V_{ret/bio})*1.5$$

Where:

$V_{mitigation>30\%}$ = the mitigation volume for >30% EIA [ac-ft]

$V_{30\%eia}$ = SQDV at 30% EIA [ac-ft]

$V_{ret/bio}$ = the total volume of runoff retained and/or biofiltered onsite using Retention and Biofiltration BMPs calculated

		Units
$V_{30\%eia}$	N/A	ac-ft
$V_{ret/bio}$	N/A	ac-ft
$V_{mitigation>30\%}$	**N/A**	ac-ft
		gallons
		cu.ft.

6h) Determine the Total Mitigation Volume ($V_{mitigationtotal}$), using the equation below:

$$V_{mitigationtotal} = V_{mitigation>30\%} + V_{mitigation30\%} \qquad \text{Equation 2-13}$$

Where:

$V_{mitigationtotal}$ = the total mitigation volume for 30% EIA [ac-ft]

$V_{mitigation>30\%}$ = the mitigation volume for >30% EIA, calculated using Equation 2-11 [ac-ft]

$V_{mitigation30\%}$ = the mitigation volume for 30% EIA calculated using Equation 2-10 [ac-ft]

Eqn. 2-13		**Units**
$V_{mitigation30\%}$	N/A	ac-ft
$V_{mitigation>30\%}$	N/A	ac-ft
$V_{mitigationtotal}$	**N/A**	ac-ft
		gallons
		cu.ft.

The site is required to mitigate the following volume:

N/A	ac-ft
	gallons
	cu.ft.

Continue to Step 7

Project Name: Mission Oaks Apartments

STEP 7: APPLY TREATMENT CONTRL MEASURES

► *Stormwater runoff from EIA and developed pervious surfaces must be mitigated using Retention BMPs, Biofiltration BMPs, or Treatment Control Measures (See Chapter 6 of 2011 TGM).*
► *Treatment Control Measures should be selected per the BMP selection process outlined in Section 3.3 of the 2011 TGM.*
► *BMPs must be sized to meet the SQDV or SQDF. See Section 2, Step 7 of the 2011 for guidance on calculating the SQDV and SQDF.*

	Y/N
Completed copy of the applicable "BMP Sizing Worksheet(s)" for the project's stormwater BMP(s) from Appendix E of the 2011 Technical Guidance Manual is included.	Y

Project Name: Mission Oaks Apartments

SINGLE FAMILY HILLSIDE HOMES: ASSESS SITE CONDITIONS

►*This tab only applies to projects proposing the development of a Single Family Hillside Home*
►*Provide an assessment of the project site using the following tables*

General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	
Estimated Disturbed Area	
Total Pre-Project Impervious Area	
Post-Project Impervious Area [1]	
Area of Green Roof (ET-1) [1]	
Area Draining to Hydrologic Source Controls (ET-2) [1]	
Revised Post-Project Impervious Area	0.00
Project Imperviousness (%)	

Project Description

Briefly describe project:
Describe current and proposed zoning and land use designation:
Describe topography of project area. Identify low and high points and the location of steep slopes (provide a range of grades):
Describe the site's soil types (A, B, C, D) and geological conditions:
Attach soil type information
Describe the site's groundwater conditions (e.g. depth to seasonal high groundwater):
Attach source of groundwater information

Project Name: Mission Oaks Apartments

SINGLE FAMILY HILLSIDE HOMES: ASSESS SITE CONDITIONS, CONT.

Is there offsite drainage on the site? If so, identify the location(s) and source(s) of offsite drainage and the volume of water running onto the site:
Describe any existing utilities within the project area that would limit the possible locations of certain BMPs:
Describe any environmentally sensitive areas (e.g. riparian areas, wetlands) within the project area:

Geotechnical considerations:	
Does the site contain any of the following characteristics:	**Y/N/NA**
Collapsible Soil	
Expansion Soil	
Potential for seismically-inducted soil liquefaction	
Additional considerations:	
Attach relevant geotechnical information	

Project Name: Mission Oaks Apartments

SINGLE FAMILY HILLSIDE HOMES: POLLUTANTS OF CONCERN

Identify pollutants of concern using the tables below

Pollutants of Concern (See Section 3.3 of 2011 TGM)

Activity / Potential Land Uses	Potential Pollutant*								
	Sediment	Nutrients	Metals	Pesticides	Oxygen Demanding Substances	Toxic Organics	Oil & Grease	Bacteria	Trash and Debris
[fill in if necessary]									
[fill in if necessary]									

* Denote potential pollutant with "x"

Receiving Waterbody Listings (see Section 3.3. of 2011 TGM)

Receiving Water Body (watershed indicated in parentheses)	**Constituent Grouping [2]**	**Distance to Project (ft)**
[fill in if necessary]		

Project Name: Mission Oaks Apartments

SINGLE FAMILY HILLSIDE HOMES: PERFORMANCE STANDARDS

► *The following measures are required and should be included in the lot layout, consistent with applicable local policies and if appropriate/feasible with the given site conditions.*

► *Additional gudiance on performance standards can be found in Section 2.2 of the 2011 TGM.*

► *Identify and describe the performance standards included within the proposed site in the table below.*

Performance Standard	Included? Y/N/NA	Brief description of Performance Standard
Conserve Natural Areas		
Improvements are clustered on the least-sensitive portions of the lot		
Clearing and grading of native vegetation is limited		
Trees and other vegetation at the site are maximized		
Protect Slopes		
Slopes are protected from erosion by safely conveying runoff from the tops of slopes		
Native and drought-tolerant species are considered		
Protect Channels		
Natural drainage systems are used to the maximum extent practicable, but runoff discharge is minimized to the maximum extent practicable		
Permanent channel crossings are stabilized		
Energy dissipaters are installed at the outlets that discharge into unlined channels		
Provide Storm Drain System Stenciling and Signage		
Storm drain inlets within the project boundary include storm drain message markers or placards		
Divert Roof Runoff and Surface Flows to Vegetated Area(s) or Collection System(s)		
Disconnected downspouts divert water to (1) vegetated pervious areas of the site in order to allow for infiltration, storage, evapotranspiration, and treatment, or (2) a rainwater collection system		
Runoff diversion(s) meet the requirements as specified in Step 1b of 2011 TGM (e.g., vegetated flow paths are 25 ft or more in length)		

[1] Applicant should enter post-project impervious cover prior to accounting for green roof and hydrologic source control (HSC) credits. Volume reduction provided by green roofs and HSCs are accounted for implicitly in the sizing calcuations for BMPs by assuming the roof area covered by a green roof or the area draining to a HSC is pervious rather than impervious when caluclating the runoff coefficient for the site. Green roofs and HSCs are not required to be considered for all project locations and types. In order to obtain credit, Green Roofs and HSCs must be designed as specified in the 2011 TGM. Additional detail on Green Roofs (ET-1) and HSCs (ET-2) can be found in Section 6 of the 2011 TGM.

[2] If a waterbody is listed for "toxicity" and the cause and/or contribution to toxicity is known, then the consituent group known to contribute to toxicity are listed here (in lieu of listing "toxicity")

Project Name: Mission Oaks Apartments

ROADWAY PROJECTS: ASSESS SITE CONDITIONS

►*This tab only applies to Roadway Projects*
►*Provide an assessment of the project site using the following tables*

General Characteristics

General Project Characteristics	Area (acres)
Total Project Site Area	0.00
Estimated Disturbed Area	0.00
Total Pre-Project Impervious Area	0.00
Post-Project Impervious Area [1]	0.00
Area Draining to Hydrologic Source Controls (ET-2) [1]	
Revised Post-Project Impervious Area	0.00
Project Imperviousness (%)	

Project Description

Briefly describe project:

Describe current and proposed zoning and land use designation:

Describe topography of project area. Identify low and high points and the location of steep slopes (provide a range of grades):

Describe the site's soil types (A, B, C, D) and geological conditions:

Attach soil type information

Describe the site's groundwater conditions (e.g. depth to seasonal high groundwater):

Attach source of groundwater information

Project Name: Mission Oaks Apartments

ROADWAY PROJECTS: ASSESS SITE CONDITIONS, CONT.

Is there offsite drainage on the site? If so, identify the location(s) and source(s) of offsite drainage and the volume of water running onto the site:
Describe any existing utilities within the project area that would limit the possible locations of certain BMPs:
Describe any environmentally sensitive areas (e.g. riparian areas, wetlands) within the project area:

Geotechnical considerations:	
Does the site contain any of the following characteristics:	**Y/N/NA**
Collapsible Soil	N/A
Expansion Soil	N/A
Potential for seismically-inducted soil liquefaction	N/A
Additional considerations:	
	Attach relevant geotechnical information

Project Name: Mission Oaks Apartments

ROADWAY PROJECTS: POLLUTANTS OF CONCERN

Identify pollutants of concern using the tables below

Pollutants of Concern Assoc. with Project Activities (See Section 3.3 of 2011 TGM)

Activity / Potential Land Uses	Potential Pollutant*								
	Sediment	Nutrients	Metals	Pesticides	Oxygen Demanding Substances	Toxic Organics	Oil & Grease	Bacteria	Trash and Debris
[fill in if necessary]									
[fill in if necessary]									

*Denote potential pollutant with "x"

Receiving Waterbody Listings (See Section 3.3 of 2011 TGM)

Receiving Water Body (watershed indicated in parentheses)	**Constituent Grouping [2]**	**Distance to Project (ft)**
[fill in if necessary]		

Project Name: Mission Oaks Apartments

ROADWAY PROJECTS: PERFORMANCE STANDARDS

► *Street, roadway, highway,and freeway projects that construct 10,000 square feet or more of impervious surface area must incorporate the USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets", to the maximum extent practicable.*
► *Identify and describe the performance standards included within the proposed site in the table below.*

Performance Standard [1]	Included? Y/N/NA	Brief description of Performance Standard
Retention and/or biofiltration BMPs are sized to capture and treat SQDV or the SQDF. **Also see BMP Sizing below**	Y	
Street width is minimized	Y	
Porous pavement or pavers are used for low traffic roadways, on-street parking, shoulders or sidewalks	N	
Tree canopy is added by planting or preserving trees and shrubs	N	

[1] Additional gudiance on performance standards can be found in Section 2.2 of the 2011 TGM.

Project Name: Mission Oaks Apartments

ROADWAY PROJECTS: BMP SIZING

Roadway projects must utilize retention or biofiltration BMPs as specified in the 2011 TGM (INF-1-7, RWH-1, ET 1- 2, or BIO-1-5). BMPs must be sized to meet the SQDV or SQDF. See Section 2, Step 7 of the 2011 for guidance on calculating the SQDV and SQDF.

BMP Sizing	Y/N
A completed copy of the applicable "BMP Sizing Worksheet(s)" for the project's stormwater BMP(s) from Appendix E of the 2011 Technical Guidance Manual is included as an attachment.	

[1] Applicant should enter post-project impervious cover prior to accounting for green roof and hydrologic source control (HSC) credits. Volume reduction provided by green roofs and HSCs are accounted for implicitly in the sizing calcuations for BMPs by assuming the roof area covered by a green roof or the area draining to a HSC is pervious rather than impervious when caluclating the runoff coefficient for the site. Green roofs and HSCs are not required to be considered for all project locations and types. In order to obtain credit, Green Roofs and HSCs must be designed as specified in the 2011 TGM. Additional detail on Green Roofs (ET-1) and HSCs (ET-2) can be found in Section 6 of the 2011 TGM.

[2] If a waterbody is listed for "toxicity" and the cause and/or contribution to toxicity is known, then the consituent group known to contribute to toxicity are listed here (in lieu of listing "toxicity")

Project Name: Mission Oaks Apartments

ADDITIONAL REQUIRED SUBMITTALS

Yes	**Site map** that includes: o Property boundary o Major roadways or landmarks o Scale and north arrow o Drainage areas o Surrounding land uses o Presence of Environmentally Sensitive Areas o Open space preservation areas o Impervious areas o Natural hydrologic features o Location of discharge(s) o Existing and planned utilities o Topography (including steep slopes) o Key activities such as outdoor material storage, parking, food preparation, etc. o Potential pollutant areas (e.g., fueling island) o Location of nearby (within 2,000 ft of development project) bus or train station(s) o Location and type of source control measures o Location and type of stormwater BMPs
Yes	**BMP Sizing Worksheet(s)** (see Appendix E of 2011 TGM); design specifiations and details must also be provided for Green Roofs and Hydrologic Source Controls (ET-1 & 2)
Yes	**Stormwater Treatment Device Access and Maintenance Agreement** (see City of Camarillo web page (www.ci.camarillo.ca.us) "forms" for electronic copy or contact Anita Kuhlman at 805-383-5659)
Yes	**Maintenance Plan** (See Appendix I of 2011 TGM for guidance)
Yes	**Technical Infeasibility Analysis** – if Retention BMPs cannot be used, the applicant must submit a site-specific analysis showing technical infeasibility as described in Section 3.2 of the 2011 TGM. Technical infeasibility may include some (or all) of the components submitted with soil, groundwater and/or geotechnical reports. Technical infeasibility must also account for Rainwater Harvesting. Rainwater Harvesting is not required to be used if the available demands do not meet the volume required for 80% capture using a 72-hour drawndown time (See RWH-1 in Section 6 of the 2011 TGM for more detail).
Yes	**Soil Type Information** (may include site specific analyses, available geologic or geotechnical reports and/ or the Ventura Hydrology Manual Soil Map zoomed into site level)
Yes	**Groundwater Information** (may include available groundwater data, site specific redoximorphic analytical/groundwater monitoring results, or known groundwater impacts such as contaminated sites registered with the State Water Board)
	Geotechnical Reports (may include site specific analyses with information on collapsible soils, expansive soil, liquefaction, or groundwater mounding analysis)

	Rainwater Harvesting - Include calculations and justification for rainwater harvesting demand. Section 3.2 for guidance of the 2011 TGM.

LEGEND

- DRAINAGE AREA BOUNDARY
- SUBAREA BOUNDARY
- SD — PROPOSED STORM DRAIN
- BIORETENTION AREA
- LANDSCAPE AREA
- BIORETENTION AREA
- A — DRAINAGE AREA DESIGNATION
- 2.76 — AREA (ACRES)

IMPERVIOUS TOTAL	=	261,490 SF / 6.00 AC
PERVIOUS TOTAL	=	115,870 SF / 2.66 AC
TOTAL GROSS SITE AREA	=	377,360 SF / 8.66 AC

DRAINAGE AREA (POST-DEVELOPMENT)

SUBAREA	ACREAGE (AC)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
A	2.76	3.97	5.22	6.43	25.98
B	5.90	8.50	11.15	13.75	25.98
TOTAL	8.66	12.47	16.37	20.18	25.98

NOTE: Q10 UNIT RUNOFF RATE IN CFS/ACRE = 1.44
Q25 UNIT RUNOFF RATE IN CFS/ACRE = 1.89
Q50 UNIT RUNOFF RATE IN CFS/ACRE = 2.33
Q100 UNIT RUNOFF RATE IN CFS/ACRE = 3.00

N

SCALE: 1"=60'
0 60 120 180

DRAINAGE MAP
EXHIBIT B

CITY OF CAMARILLO, CALIFORNIA
MAY 28, 2014

SHEET 1 OF 1

Penfield & Smith
Engineering • Surveying • Planning • Construction Management •
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36-EXB SAVE DATE: 5/28/2014 2:46:32 PM PLOT BY:Tristan Santos PLOT DATE:5/28/2014 2:47:00 PM PLOT SCALE:1:1
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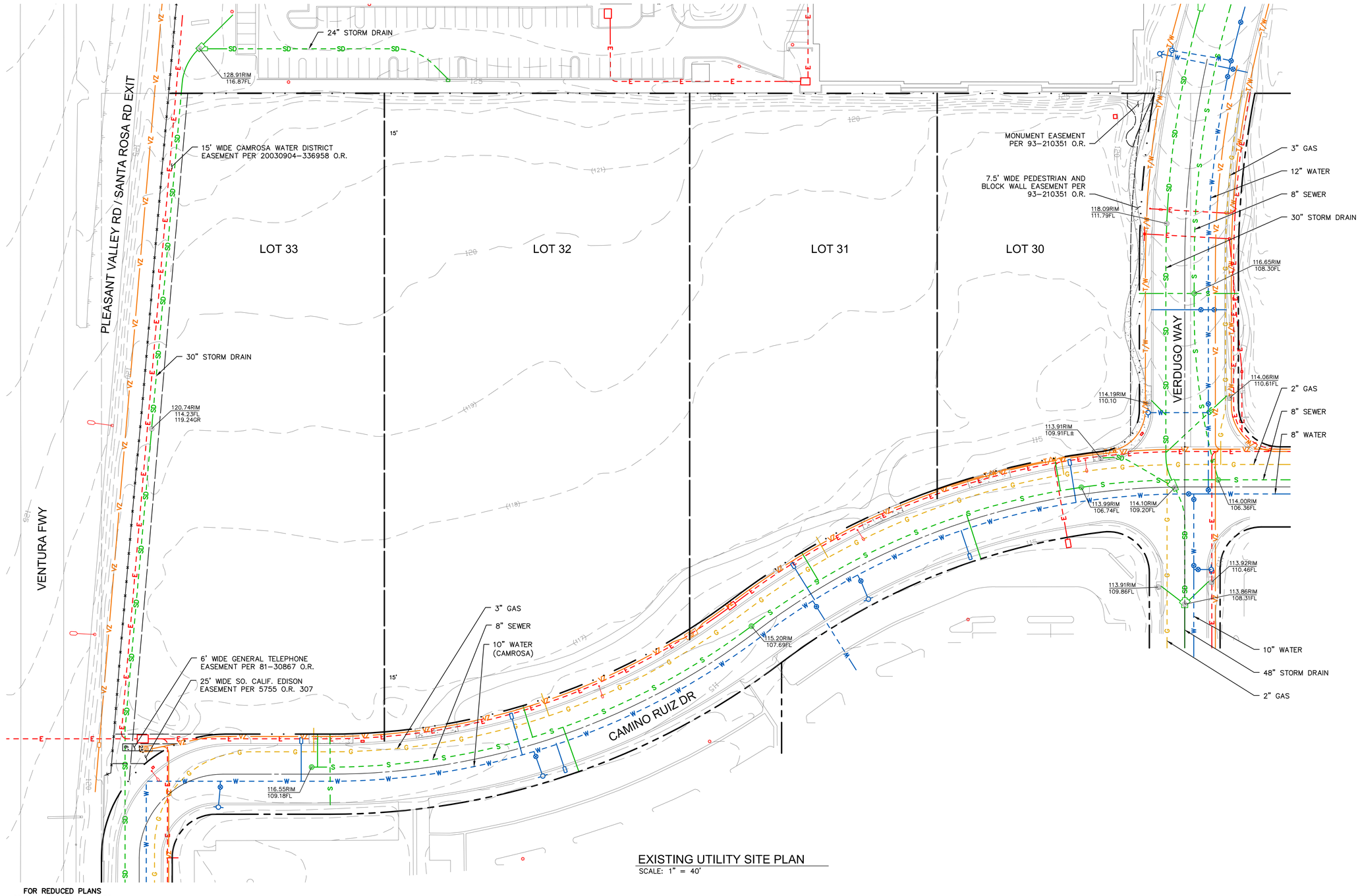

LEGEND:

- FENCELINE
- EASEMENT
- LOT LINE
- PROPERTY LINE
- RIGHT OF WAY
- ROAD CENTERLINE
- EXISTING CONCRETE

EXISTING UTILITY LEGEND:

- DOMESTIC WATER — W
- ELECTRICAL — E
- GAS — G
- SANITARY SEWER — S
- STORM DRAIN — SD
- TIMEWARNER CONDUITS — T/W
- VERIZON CONDUITS — VZ
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SEWER OR STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- ELECTRICAL VAULT
- STREET LIGHT

EXISTING UTILITY SITE PLAN

SCALE: 1" = 40'

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES

0 1 2 3

SCALE: 1"=40'

0 40 80 120

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Phone: (805) 981-0706 Fax: (805) 981-0251

W.O. No. 21099.12

OFFSITE UTILITY EXHIBIT

CITY OF CAMARILLO, CALIFORNIA
MARCH 20, 2014

36-EXB SAVE DATE: 3/24/2014 9:40:28 AM PLOT BY:Lynne Aguilar PLOT DATE:3/24/2014 9:41:51 AM PLOT SCALE:1:1
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Project Location
THE PLAZA MISSION OAKS
CAMARILLO HIGH SCHOOL
SANTA ROSA RD
PLEASANT VALLEY RD
LEISURE VILLAGE
WOODSIDE PARK
CAMARILLO SPRINGS GOLF COURSE
Conejo Creek
CITY OF CAMARILLO
COUNTY OF VENTURA
FWY
LM
RE
PO
CPD
RPD
OS
AE
MHPD

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES

0 1 2 3

SCALE: 1"=40'

0 40 80 120

LEGEND:

- SD — STORM DRAIN
- CATCH BASIN
- MANHOLE
- CDS UNIT
- RETAINING WALL
- DETENTION BASIN
- BIO RETENTION AREA

SCHEMATIC GRADING & DRAINAGE EXHIBIT

CITY OF CAMARILLO, CALIFORNIA
MAY 19, 2014

Penfield & Smith
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SHEET 1 OF 1

36-EXB SAVE DATE: 5/19/2014 11:25:41 AM PLOT BY:Richard Smith PLOT DATE:5/19/2014 11:39:25 AM PLOT SCALE:1:1
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Sizing Worksheet

Retention BMP - Bioretention

Step 1: Determine water quality design volume	
1-1. Enter Project area (acres), $A_{project}$	$A_{project}$ = 8.7 acres
1-2. Enter the maximum allowable percent of the Project area that may be effective impervious area (%) (refer to permit), ranges from 5-30%, $\%_{allowable}$	$\%_{allowable}$ = 5.0 %
1-3. Determine the maximum allowable effective impervious area (acres), $EIA_{allowable} = (A_{project})*(\%_{allowable})$	$EIA_{allowable}$= 5.57 acres
1-4. Enter Project impervious fraction, Imp (e.g. 60% = 0.60)	Imp= 0.69
1-5. Determine the Project Total Impervious area (acres), $TIA=A_{project}*Imp$	TIA= 6.00 acres
1-6. Determine the total area from which runoff must be retained (acres), $A_{retain}=TIA-EIA_{allowable}$	A_{retain} = 5.57 acres
1-7. Determine pervious runoff coefficient using Table E-1, C_p	C_p = 0.05
1-8. Calculate runoff coefficient, $C = 0.95*imp + C_p\ (1-imp)$	C = 0.95
1-9. Enter design rainfall depth of the storm (in), P_i	P_i = 0.75 in
1-10. Calculate rainfall depth (ft), $P = P_i/12$	P = 0.063 ft
1-11. Calculate water quality design volume (ft^3), $SQDV=43560\times C*P*A_{retain}$	SQDV= 14,401 ft^3

Step 2: Determine the design percolation rate	
2-1. Enter measured soil percolation rate (in/hr) (0.5 in/hr minimum), $P_{measured}$	$P_{measured}$ = 0.78 in/hr
2-2. Determine percolation rate correction factor, S_A based on suitability assessment (see Section 6 INF-3)	S_A = 2.50

2-3. Determine percolation rate correction factor, S_B based on design (see Section 6 INF-3)	S_B = 2.25
2-4. Calculate combined safety factor, $S = S_A \times S_b$	S = 5.63
2-5. Calculate the design percolation rate (in/hr), $P_{design} = P_{measured}/S$	P_{design} = 0.14 in/hr
Step 3: Calculate Bioretention Infiltrating surface area	
3-1. Enter water quality design volume (ft^3), *SQDV*	SQDV = 14,401 ft^3
3-2. Enter design percolation rate (in/hr), P_{design}	P_{design} = 0.14 in/hr
3.3 Enter the required drain time (48 hours), $t_{ponding}$	$t_{ponding}$ = 48 hours
3-3. Calculate the maximum depth of surface ponding that can be infiltrated within the required drain time (ft): $d_{max} = (P_{design} \times t_{ponding})/12$	d_{max} = 0.56 ft
3-4. Select surface ponding depth (ft), d_p, such that $d_p \leq d_{max}$	d_p = 0.50 ft
3-5. Select thickness of amended media (ft,2 feet minimum, 3 preferred), l_{media}	l_{media} = 2 ft
3-6. Enter porosity of amended media (roughly 25% or 0.25 ft/ft), n_{media}	n_{media} = 0.25 ft/ft
3-7. Select thickness of optional gravel layer (ft), l_{gravel}	l_{gravel} = 0.0 ft
3-8. Enter porosity of gravel (roughly 30% or 0.3 ft/ft), n_{gravel}	n_{gravel} = 0.4 ft/ft
3-9. Calculate the total effective storage depth of bioretention facility (ft): $d_{effective} \leq (d_p + n_{media} l_{media} + n_{gravel} l_{gravel})$	$d_{effective}$ = 1.00 ft

3-10. Check that the entire effective depth infiltrates in required drainage time, 96 hours: $t_{total} = (d_{effective}/P_{design}) \times 12$ If t_{total} > 96 hours, reduce surface ponding depth and/or amended media thickness and/or gravel thickness and return to 3-4. If $t_{total} \leq$ 96 hours, proceed to 3-11.	$t_{total} = 85.71$ hours
3-11. Calculate the required infiltrating surface area (ft^2): $A_{req} = SQDV/d_{effective}$	$A_{req} = 14{,}401\ ft^2$
Step 4: Calculate Bioretention Area Total Footprint	
4-1. Calculate total footprint required by including a buffer for side slopes and freeboard (ft^2) [A_{req} is measured at the as the filter bottom area (toe of side slopes)], A_{tot}	$A_{tot} = 16{,}840\ ft^2$

Table 6-7: Suitability Assessment Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern	Medium Concern	Low Concern
Assessment methods	Use of soil survey maps or simple texture analysis to estimate short-term infiltration rates	Direct measurement of ≥ 20 percent of infiltration area with localized infiltration measurement methods (e.g., infiltrometer)	Direct measurement of ≥ 50 percent of infiltration area with localized infiltration measurement methods or Use of extensive test pit infiltration measurement methods
Ventura Hydrology Manual soil number (measured infiltration rate)	3 (f = 0.5 – 0.64)	4 or 5 (f = 0.65 – 0.91)	6 or 7 (f = 0.92 or higher)
Site soil variability	Highly variable soils indicated from site assessment or limited soil borings collected during site assessment	Soil borings/test pits indicate moderately homogeneous soils	Multiple soil borings/test pits indicate relatively homogeneous soils
Depth to groundwater/ impervious layer	<10 ft below facility bottom	10-30 ft below facility bottom	>30 below facility bottom

Design related considerations include:

- Size of area tributary to facility – all things being equal, both physical and economic risk factors related to infiltration facilities increase with an increase in the tributary area served. Therefore facilities serving larger tributary areas should use more restrictive adjustment factors.

- Level of pretreatment/expected influent sediment loads – credit should be given for good pretreatment by allowing less restrictive factors to account for the reduced probability of clogging from high sediment loading. Also, facilities designed to capture runoff from relatively clean surfaces such as rooftops are likely to see low sediment loads and therefore should be allowed to apply less restrictive safety factors.

- Redundancy – facilities that consist of multiple subsystems operating in parallel such that parts of the system remain functional when other parts fail and/or bypass should be rewarded for the built-in redundancy with less restrictive

correction and safety factors. For example, if bypass flows would be at least partially treated in another BMP, the risk of discharging untreated runoff in the event of clogging the primary facility is reduced. A bioretention facility that overflows to a landscaped area is another example.

- Compaction during construction – proper construction oversight is needed during construction to ensure that the bottoms of bioretention facility are not overly compacted. Facilities that do not commit to proper construction practices and oversight should have to use more restrictive correction and safety factors.

Table 6-8: Design Related Considerations for Infiltration Facility Safety Factors

Consideration	High Concern	Medium Concern	Low Concern
Tributary area size	Greater than 10 acres.	Greater than 2 acres but less than 10 acres.	2 acres or less.
Level of pre-treatment/ expected influent sediment loads	Pre-treatment from gross solids removal devices only, such as hydrodynamic separators, racks and screens, AND tributary area includes landscaped areas, steep slopes, high traffic areas, or any other areas expected to produce high sediment, trash, or debris loads.	Good pre-treatment with BMPs that mitigate coarse sediments such as vegetated swales AND influent sediment loads from the tributary area are expected to be relatively low (e.g., low traffic, mild slopes, disconnected impervious areas, etc.).	Excellent pre-treatment with BMPs that mitigate fine sediments such as bioretention or media filtration OR sedimentation or facility only treats runoff from relatively clean surfaces, such as rooftops.
Redundancy of treatment	No redundancy in BMP treatment train.	Medium redundancy, other BMPs available in treatment train to maintain at least 50% of function of facility in event of failure.	High redundancy, multiple components capable of operating independently and in parallel, maintaining at least 90% of facility functionality in event of failure.
Compaction during construction	Construction of facility on a compacted site or elevated probability of unintended/ indirect compaction.	Medium probability of unintended/ indirect compaction.	Heavy equipment actively prohibited from infiltration areas during construction and low probability of unintended/ indirect compaction.

Adjust the measured short-term infiltration rate using a weighted average of several safety factors using the worksheet shown in Table 6-9 below. The design percolation rate would be determined as follows:

- For each consideration shown in Tables 6-7 and 6-8 above, determine whether the consideration is a high, medium, or low concern.
- For all high concerns assign a factor value of 3, for medium concerns assign a factor value of 2, and for low concerns assign a factor value of 1.
- Multiply each of the factors by the corresponding weight to get a product.
- Sum the products within each factor category to obtain a safety factor for each.
- Multiply the two safety factors together to get the final combined safety factor. If the combined safety factor is less than 2, then use 2 as the safety factor.
- Divide the measured short-term infiltration rate by the combined safety factor to obtain the adjusted design percolation rate for use in sizing the infiltration facility.

Table 6-9: Infiltration Facility Safety Factor Determination Worksheet

Factor Category		Factor Description	Assigned Weight (w)	Factor Value (v)	Product (p) p = w x v
A	Suitability Assessment	Soil assessment methods	0.25	3	0.75
		Predominant soil texture	0.25	2	0.50
		Site soil variability	0.25	2	0.50
		Depth to groundwater / impervious layer	0.25	3	0.75
		Suitability Assessment Safety Factor, $S_A = \Sigma p$			2.50
B	Design	Tributary area size	0.25	2	0.50
		Level of pre-treatment/ expected sediment loads	0.25	2	0.50
		Redundancy	0.25	2	0.50
		Compaction during construction	0.25	3	0.75
		Design Safety Factor, $S_B = \Sigma p$			2.25
		Combined Safety Factor = S_A x S_B			5.63

Note: The minimum combined adjustment factor shall not be less than 2.0 and the maximum combined adjustment factor shall not exceed 9.

Step 3: Calculate the surface area

Determine the size of the required infiltrating surface by assuming the SQDV will fill the available ponding depth plus the void spaces in the media, based on the computed porosity of the filter media and optional aggregate layer.

Cross Section for Step 7 - Vegetated Swale

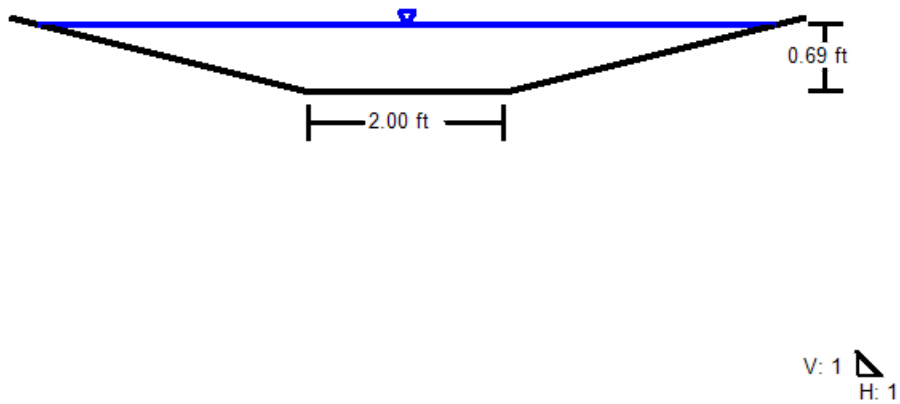
Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01000	ft/ft
Normal Depth	0.69	ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	2.00	ft
Discharge	9.35	ft³/s

Cross Section Image



Sizing Worksheet Treatment Control Measure (Step 7) - Vegetated Swale

Step 1: Determine water quality design flow	
1-1. Enter Project area (acres), $A_{project}$	A_{design} = 3.13 acres
1-2. Enter impervious fraction, *Imp* (e.g. 60% = 0.60)	Imp = 0.14
1-3. Determine pervious runoff coefficient using Table E-1, C_p	C_p = 0.05
1-4. Calculate runoff coefficient, $C = 0.95*imp + C_p\ (1-imp)$	C = 0.18
1-5. Enter design rainfall intensity (in/hr), *i*	i = 0.20 in/hr (per Method 1)
1-6. Calculate water quality design flow (cfs), $SQDF = CiA$	SQDF = 0.12 cfs
Step 2: Calculate swale bottom width	
2-1. Enter water quality design flow (cfs), *SQDF*	SQDF = 0.12 cfs
2-2. Enter Manning's roughness coefficient for shallow flow conditions, $n_{wq} = 0.2$	n_{wq} = 0.2
2-3. Calculate design flow depth (ft), *y*	y = 0.33 ft
2-4. Enter longitudinal slope (ft/ft) (along direction of flow), *s*	s = 0.010 ft/ft
2-5. Calculate bottom width of swale (ft), $b = (SQDF*n_{wq})/(1.49y^{1.67}s^{0.5})$	b = 1.1 ft
2-6. If *b* is between 2 and 10 feet, go to Step 3	
2-7. If b is less than 2 ft, assume b = 2 ft and recalculate flow depth, $y = ((SQDF*n_{wq})/(2.98\ s^{0.5}))^{1.49}$	y = 0.15 ft

2-8. If b is greater than 10 ft, one of the following design adjustments must be made (recalculate variables as necessary): • Increase the longitudinal slope to a maximum of 0.06 ft/ft. • Increase the design flow depth to a maximum of 4 in (0.33 ft). • Place a divider lengthwise along the swale bottom (Figure 3-1) at least three-quarters of the swale length (beginning at the inlet). Swale width can be increased to an absolute maximum of 16 feet if a divider is provided.	
Step 3: Determine design flow velocity	
3-1. Enter side slope length per unit height (H:V) (e.g. 3 if side slopes are 3H :1V), *Z*	Z = 4
3-2. Enter bottom width of swale (ft), *b*	b = 2 ft
3-3. Enter design flow depth (ft), *y*	y = 0.15 ft
3-4. Calculate the cross-sectional area of flow at design depth (ft^2), $A_{wq} = by + Zy^2$	A_{wq} = 0.39 ft^2
3-5. Calculate design flow velocity (ft/s), $V_{wq} = SQDF/ A_{wq}$	V_{wq} = 0.31 ft/s
3-6. If the design flow velocity exceeds 1 ft/s, go back to Step 2 and change one or more of the design parameters to reduce the design flow velocity. If design flow velocity is less than 1 ft/s, proceed to Step 4.	
Step 4: Calculate swale length	
4-1. Enter hydraulic residence time (minutes, minimum 7 min), t_{hr}	t_{hr} = 7 min
4-2. Calculate swale length (ft), $L = 60 t_{hr} V_{wq}$	L = 131 ft

Step 4: Calculate swale length	
4-3. If L is too long for the site, proceed to Step 5 to adjust the swale layout If L is greater than 100 ft and will fit within the constraints of the site, skip to Step 6 If L is less than 100 ft, increase the length to a minimum of 100 ft, leaving the bottom width unchanged, and skip to Step 6	
Step 5: Adjust swale layout to fit within site constraints	
5-1. Enter the bottom width calculated in Step 2 (ft), $b_i = b$	b_i = ft
5-2. Enter design flow depth (ft), y	y= ft
5-3. Enter the swale side slope ratio (H:V), Z	Z = ft:ft
5-4. Enter the additional top width above the side slope for the design water depth (ft), $b_{slope} = 2Zy$	b_{slope} = ft
5-5. Enter the initial length calculated in Step 4 (ft), $Li = L$	L_i = ft
5-6. Calculate the top area at the design treatment depth (ft²), $A_{top} = (b_i + b_{slope}) \times L_i$	A_{top} = ft²
5-7. Choose a reduced swale length based on site constraints (ft), L_f	L_f = ft
5-8. Calculate the increased bottom width (ft), $b_f = (A_{top}/L_f) - b_{slope}$	b_f = ft
5-9. Recalculate the cross-sectional area of flow at design depth (ft2), $A_{wq,f} = b_f y + Zy^2$	$A_{wq,f}$ = ft²
5-10. Recalculate design flow velocity (ft/s), $V_{wq} = SQDF / A_{wq}$ Revise design as necessary if design flow velocity exceeds 1 ft/s.	V_{wq} = ft/s

5-11. Recalculate the hydraulic residence time (min), $t_{hr} = L_f/(60V_{wq})$ Ensure that t_{hr} is greater or equal to 10 minutes.	t_{hr} = min
5-12. When V_{wq} and t_{hr} are recalculated to meet requirements, proceed to Step 6.	
Step 6: Provide conveyance capacity for flows higher than SQDF (if swale is on-line)	
6-1. If the swale already includes a high-flow bypass to convey flows higher than the water quality design flow rate, skip this step and verify that all parameters meet design requirements to complete sizing	
6-2. If swale does not include a high-flow bypass, determine that the swale can convey flood control design storm peak flows. Calculate the capital peak flow velocity per Ventura County requirements (ft/s), V_p	See attached FlowMaster velocity calculation V_p = 2.82 ft/s
6-3. If V_p > 3.0 feet per second, return to Step 2 and increase the bottom width or flatten the longitudinal slope as necessary to reduce the flood control design storm peak flow velocity to 3.0 feet per second or less. If the longitudinal slope is flattened, the swale bottom width must be recalculated (Step 2) and must meet all design criteria.	

Worksheet for Step 7 - Vegetated Swale

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.030	
Channel Slope	0.01000	ft/ft
Left Side Slope	4.00	ft/ft (H:V)
Right Side Slope	4.00	ft/ft (H:V)
Bottom Width	2.00	ft
Discharge	9.35	ft^3/s

Results

Normal Depth	0.69	ft
Flow Area	3.32	ft^2
Wetted Perimeter	7.72	ft
Hydraulic Radius	0.43	ft
Top Width	7.55	ft
Critical Depth	0.60	ft
Critical Slope	0.01849	ft/ft
Velocity	2.82	ft/s
Velocity Head	0.12	ft
Specific Energy	0.82	ft
Froude Number	0.75	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.69	ft
Critical Depth	0.60	ft
Channel Slope	0.01000	ft/ft

Worksheet for Step 7 - Vegetated Swale

GVF Output Data

Critical Slope	0.01849	ft/ft

RECORDED AT THE REQUEST OF
AND WHEN RECORDED MAIL TO:

City Clerk
City of Camarillo
601 Carmen Drive
Camarillo, California 93010

Recorded for the benefit of City of Camarillo.
No fee required (Government Code §27383)

STORMWATER TREATMENT DEVICE ACCESS AND MAINTENANCE AGREEMENT FOR PROJECT NO. _____

OWNER: PB Companies

PROPERTY ADDRESS: APNs 160-0-091-125, -055, -065, -105

THIS AGREEMENT is made and entered into this _____ day of _____, ____, by and between PB Companies (“Owner”) and the City of Camarillo, a general law city and municipal corporation (“City”).

1. RECITALS. This Agreement is entered into with reference to the following:

A. Owner owns real property (“Property”) in City’s jurisdiction, more specifically described in attached Exhibit “A” and shown on the vicinity map in Exhibit “B”, each of which is incorporated by this reference.

B. At the time of initial approval of development project known as Mission Oaks Apartments on the Property, City required the project to employ on-site control measures to minimize pollutants in urban runoff.

C. Owner intends to install the following device(s) vegetated treatment swales, bioretention basin, detention storage pipes, and connector pipe screen/trash devices.. (“Device”) as the on-site control measure(s) to minimize pollutants in urban runoff (as shown in the attached Exhibit “C”, which is incorporated by this reference, and on the Stormwater Pollution Control or Prevention Plan No. _____).

D. The Device must be installed in accordance with approved plans and specifications shown on City Drawings Nos. C- 15779 through C- 15799 on file with City Engineer, and incorporated by this reference.

E. The Device, installed on private property and draining only private property, is a private facility and all maintenance or replacement of the Device is the sole responsibility of Owner in accordance with the terms of this Agreement.

F. Owner is aware that periodic and continuous maintenance, including, without limitation, filter material replacement and sediment removal, is required to assure peak performance of the Device, and that such maintenance activity will require compliance with all local, state, or federal laws and regulations, including those pertaining to confined space and waste disposal methods in effect at the time such maintenance occurs.

2. **ACCESS**. Owner grants a license to City's designee for complete access, of any duration, to the Device and its immediate vicinity at any time, upon reasonable notice, or in the event of emergency, as determined by City's Director of Public Works ("Director"), no advance notice, for the purpose of inspection, sampling, testing of the Device, and, in case of emergency, to undertake all necessary repairs or other preventative measures at Owner's expense as provided below. City will make every effort at all times to minimize and avoid interference with Owner's use of the Property.

3. **MAINTENANCE.** Owner will use its best efforts to diligently maintain the Device in a manner assuring peak performance at all times. Refer to the Stormwater Pollution Control/Prevention Plan for further maintenance instructions and the attached Exhibit "C". All reasonable precautions will be exercised by Owner and Owner's representative or contractor in the removal and extraction of material(s) from the Device and the ultimate disposal of the material(s) in a manner consistent with all relevant laws and regulations in effect at the time. In October of each year, Owner will provide City with documentation identifying the date of inspection, type and quantity of material(s) removed and disposal destination, and other maintenance performed.

4. **DEFAULT.** Should Owner, or its successors or assigns, fail to accomplish the necessary maintenance contemplated by this Agreement within ten (10) days after being given written notice by City, City is authorized to take any maintenance action needed and charge the entire cost and expense to Owner or Owner's successors or assigns, including administrative costs, attorneys' fees and interest at the maximum rate authorized by law from the date of notice of any expenses incurred by City until paid in full.

5. **SECURITY.** City may require Owner to post security in form and for a time period satisfactory to City to guarantee the performance of this Agreement. Should Owner fail to perform the obligations under this Agreement, City may, in the case of a cash bond, act for Owner using the proceeds from it, or in the case of a surety bond, require the surety to perform the obligations of the Agreement. As an additional remedy, Director may cause the withdrawal of any previous stormwater related approval with respect to the property on which a Device has been installed until such time as Owner repays to City its reasonable costs.

6. **RECORDATION**. This Agreement will be recorded in the Ventura County Recorder's Office at Owner's expense and will constitute notice to all successors and assigns of title to the Property of Owner's obligations, and also a lien in such amount as will fully reimburse City, including interest, subject to foreclosure in event of default in payment.

7. **ENFORCEMENT.** In the event City initiates legal action occasioned by any default or action of Owner, or its successors or assigns, then Owner and its successors or assigns agree to pay all costs incurred by City in enforcing the terms of this Agreement, including reasonable attorney's fees and costs, and that the same may become a lien against the Property.

8. **RUNS WITH PROPERTY.** The burdens and benefits in this Agreement constitute covenants that run with the Property and constitute a lien upon the Property.

9. **SUCCESSORS.** This Agreement is binding upon the heirs, successors, executors, administrators and assigns of the parties. The term "Owner" includes not only the present Owner, but also its heirs, successors, executors, administrators, and assigns. Owner will notify any successor to title of all or part of the Property about the existence of this Agreement. Owner will provide this notice before such successor obtains an interest in all or part of the Property. Owner will provide a copy of such notice to City at the same time such notice is provided to the successor.

10. **TIME IS OF ESSENCE**. Time is of essence in the performance of this Agreement.

11. **NOTICES.** Any notice to a party required or called for in this Agreement will be served in person, or by deposit in the U.S. Mail, first-class postage prepaid, to the address set forth below. Notice will be deemed effective upon receipt, or 72 hours after deposit in the U.S. Mail, whichever is earlier. A party may change a notice address only by providing written notice to the other party.

IF TO CITY:

Public Works Department - Stormwater Program
601 Carmen Drive
Camarillo, California 93010

IF TO OWNER:

PB Companies
412 Marsh Street
San Luis Obispo, CA 93401
Telephone # (805) 542-9900

IN WITNESS THEREOF, the parties hereto have affixed their signatures as of the date first written above.

CITY OF CAMARILLO:

_____
Bruce Feng
City Manager

ATTEST:

_____
City Clerk

APPROVED AS TO FORM BY:
Don Davis, Assistant City Attorney
November 15, 2006

OWNER:

(If a legal entity such as a corporation, partnership, limited liability company, or trust, please print the entity's name and name and title of signer above signature line and then sign. If individual, please print name of signer above signature line.)

_____
John W. Belsher
PB Companies

_____

_____

_____

NOTARIES ON FOLLOWING PAGE

c: Public Works Department (2)
Public Works Stormwater
City GIS Dept.
Owner

Exhibit A

LEGAL DESCRIPTION

Lots 30, 31, 32 and 33 at Mission Oaks Business Park, identified by Assessor Parcel Numbers 160-0-091-125, 160-0-091-055, 160-0-091-065 and 160-0-091-105, located in the City of Camarillo, County of Ventura, State of California, at 5000 Camino Ruiz, Camarillo, California 93012.

LEGEND

- DRAINAGE AREA BOUNDARY
- SUBAREA BOUNDARY
- SD — PROPOSED STORM DRAIN
- BIORETENTION AREA
- LANDSCAPE AREA
- BIORETENTION AREA
- A — DRAINAGE AREA DESIGNATION
- 2.76 — AREA (ACRES)

IMPERVIOUS TOTAL	=	261,490 SF / 6.00 AC
PERVIOUS TOTAL	=	115,870 SF / 2.66 AC
TOTAL GROSS SITE AREA	=	377,360 SF / 8.66 AC

DRAINAGE AREA (POST-DEVELOPMENT)

SUBAREA	ACREAGE (AC)	Q_{10} (CFS)	Q_{25} (CFS)	Q_{50} (CFS)	Q_{100} (CFS)
A	2.76	3.97	5.22	6.43	25.98
B	5.90	8.50	11.15	13.75	25.98
TOTAL	8.66	12.47	16.37	20.18	25.98

NOTE: Q10 UNIT RUNOFF RATE IN CFS/ACRE = 1.44
Q25 UNIT RUNOFF RATE IN CFS/ACRE = 1.89
Q50 UNIT RUNOFF RATE IN CFS/ACRE = 2.33
Q100 UNIT RUNOFF RATE IN CFS/ACRE = 3.00

N

SCALE: 1"=60'
0 60 120 180

DRAINAGE MAP
EXHIBIT B

CITY OF CAMARILLO, CALIFORNIA
MAY 28, 2014

SHEET 1 OF 1

Penfield & Smith
Engineering • Surveying • Planning • Construction Management •
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 981-0706 Fax: (805) 981-0251

36-EXB SAVE DATE: 5/28/2014 2:46:32 PM PLOT BY: Tristan Santos PLOT DATE: 5/28/2014 2:47:00 PM PLOT SCALE: 1:1
DRAWING: c:\users\santos\desktop\documents\plans\21099\21099.12\exhibits\grading exhibit.dwg

EXHIBIT C
Minimum Maintenance Requirements For Post-Construction Treatment Devices

Maintenance logs will be required by the City of Camarillo in October of each year for all post-construction devices listed below. At a minimum, the maintenance log should include documentation identifying the device, its location, date of inspection, inspector's name and signature, type and quantity of material(s) removed, disposal destination, and other maintenance performed. The California Stormwater BMP Handbooks referred to below can be obtained at www.cabmphandbooks.com and the Ventura County Technical Guidance Manual for Stormwater Quality Control Measures can be obtained at www.vcstormwater.org.

Treatment Device	Minimum Maintenance Requirements/Schedule
Onsite trash enclosures constructed with solid roof that protects against stormwater entering refuse bins.	Inspect yearly prior to October 1 for leaks. Remove solids, stains and/or residue from floor and walls of trash enclosure with dry methods when possible. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer (check with local Sanitation Department before discharging to sewer). Do not hose down area to a storm drain. Refer also to Calif. Stormwater Municipal BMP Handbook – SC-34.
Onsite storm drains & catch basins	All onsite catch basins to be inspected and cleaned at least twice a year. Once immediately prior to October 1 and once in January. Additional cleanings may be required if more than 40% full.
Parking lots & sidewalks	Sidewalks and parking lots to be swept regularly to prevent accumulation of litter and debris. Litter, debris and any cleaning agents will be trapped and collected and disposed of properly to prevent entry into storm drain system. Refer also to Calif. Stormwater Municipal BMP Handbook – SC-43 & SC-71.
Detention Basin	Inspect basin semiannually, after each significant storm, or more frequently, if needed. Check/correct as required: differential settlement, cracking; erosion, leakage or tree growth on embankment; the condition of the riprap in the inlet, outlet and pilot channels; sediment accumulation in the basin; and the vigor and density of the grass turf on the basin side slopes and floor. Remove litter and debris from banks and basin bottom as required. Repair erosion to banks and bottom as required. Remove sediment when accumulation reaches 25% of original design depth, or if resuspension is observed. Clean in early Spring so vegetation damaged during cleaning has time to reestablish. Inspect outlet for clogging a minimum of twice a year, before and after the rainy season, after large storms, and more frequently if needed. Correct observed problems as necessary. Clean fore bay frequently to reduce frequency of main basin cleaning. Control mosquitoes, as necessary. Refer also to Ventura County Technical Guidance Manual for Stormwater Quality Control Measures #T-3 & California Stormwater Municipal BMP Handbook – TC-22.
Biofilters (Swales)	Check annually for signs of erosion, vegetation loss, and channelization of the flow. The grass should be mowed when it reaches a height of 6 inches. Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be removed. Refer also to V.C. Technical Guidance Manual for Stormwater Quality Control Measures #T-2 & Calif. Stormwater Municipal BMP Handbook – TC-30.

Treatment Device	Minimum Maintenance Requirements/Schedule
Grease Interceptors/Traps	Interceptor/trap should be inspected a minimum of every six months and cleaned a minimum of once per year or as required whenever sufficient grease/oils accumulate on the surface of the downstream compartment or it is determined by the City Industrial Waste Inspector that any grease/oil is being discharged. Check for corrosion.
Media Filter, Clarifier, Wet Vault, Vortex Separator, Hydrodynamic Systems Device Name:_____ Model#: _____ Mfr.(Name & Address): _____ _____ _____	Follow manufacturer's recommended maintenance specifications. Inspect unit twice during first wet season of operation, setting the cleaning frequency accordingly. Annually inspect for floating debris, sediment buildup, and accumulated petroleum products. Remove accumulated sediment in vault after construction in the drainage area is complete. Recommended frequency of cleaning ranges from one to two years – confirm with manufacturer. Maintenance consists of removal of accumulated material with an educator truck. It may be necessary to remove and dispose of the floatables separately due to the presence of petroleum product. Control mosquitoes, as necessary. Annual maintenance is typical. Refer also to Calif. Stormwater Municipal BMP Handbook – MP-50 & MP-51.
Drain Insert Mfr.(Name & Address): _____ _____ _____ Model: _____	Follow manufacturer's recommended maintenance specifications. At the beginning of the wet season and after significant storms, inspect for proper functioning and remove sediment buildup. After construction, verify that stormwater enters the unit and does not leak around the perimeter. Refer also to Calif. Stormwater Municipal BMP Handbook – MP-52.
Other BMP Connector Pipe Screen/Trash Device Manufacturer: Advanced Solutions 13583 Gray Hawk Ct. Corona, CA (714) 457-3283 www. stormtekcps.com Model: StormTek ST3G or equivalent	*Identify minimum maintenance* At the beginning of the wet season and after significant storms, inspect for proper functioning and remove trash buildup.
Detention Storage Pipes	At the beginning of the wet season and after significant storms, inspect for proper functioning and remove trash or sediement buildup.

4/11/2011 ver.

STORM WATER MAINTENANCE PLAN

FOR

MISSION OAKS APARTMENTS

Camarillo, California

May 28, 2014

CLIENT:	PB Companies 412 Marsh Street San Luis Obispo, CA 93401
PREPARED BY:	Penfield & Smith 1327 Del Norte Road, Suite 200 Camarillo, California 93010 (805) 981-0706
WORK ORDER NO.:	21099.03
PROJECT MANAGER:	Scott D. Meckstroth, P.E.
PROJECT ENGINEER:	Tristan J. Santos, P.E.

REGISTERED PROFESSIONAL ENGINEER
SCOTT MECKSTROTH
NO 63337
CIVIL
STATE OF CALIFORNIA

SITE MAP

1) See Appendix A.

BASELINE DESCRIPTIONS

1) The property owner(s) responsible for the operation and maintenance of the storm water management control measures shown in the Site Map is:
    - PB Companies
      Attn: John W. Belsher
      412 Marsh Street
      San Luis Obispo, CA 93401
      (805) 542-9900

2) Financing for the operation, inspection, routine maintenance, and upkeep of storm water control measures will be determined by the Developer from an allocation of HOA fees for the maintenance and operation of common areas.

3) As itemized in Exhibit C of the project's *Stormwater Treatment Device and Maintenance Agreement*, the following permanent storm water control measures are implemented on the project site:
    - The onsite trash enclosure will be constructed with a solid roof that protects against storm water entering the refuse bins. Refer to California Stormwater Municipal BMP Handbook – SC-34.
    - Storm drains and catch basins will be inspected and cleaned at least twice a year.
    - Parking lots, streets, and sidewalks will be swept regularly to prevent accumulation of litter and debris. Refer to California Stormwater Municipal BMP Handbook – SC-43 and SC-71.
    - The onsite bioretention basin will be inspected and cleaned regularly in accordance with the *Stormwater Treatment Device and Maintenance Agreement*. Refer to California Stormwater Municipal BMP Handbook – TC-32.
    - Bioswales will be checked annually for signs of erosion, vegetation loss, and channelization of the flow. Refer to California Stormwater Municipal BMP Handbook – TC-30.
    - Connector pipe screen/trash devices will be inspected for proper functioning at the beginning of the wet season.
    - Detention storage pipes will be inspected for proper functioning at the beginning of the wet season and after significant storms and treated for vector control as necessary.

4) Maintenance and waste disposal activities will be performed for the following post-construction storm water treatment measures:
    - Bioswales will be maintained in accordance with the *Operations and Maintenance* section of the *Ventura County Technical Guidance Manual for Stormwater Quality Control Measures* on pages 6-152 and 6-153, as provided in Appendix B.
    - The detention basin will be maintained in accordance with the *Operations and Maintenance* section of the *Ventura County Technical Guidance Manual for Stormwater Quality Control Measures* on pages 6-184 through 6-186, as provided in Appendix B.
    - Catch basin inserts will be maintained in accordance with the *Operations and Maintenance* section of the *Ventura County Technical Guidance Manual for Stormwater Quality Control Measures* on page 6-247, as provided in Appendix B.
    - The following table provides a schedule of maintenance activities for all site storm water control measures:

Table 1: Maintenance Measures for Storm Water Control Devices

Storm Water Control Measure	Number of Annual Inspections	Inspection Date (if applicable)	Minimum Maintenance Required
Trash Enclosure	Regular Inspections	Monthly	Remove solids, stains, and or residue from floor and walls of trash enclosure with dry methods when possible. No discharge of wash water shall be allowed into storm drain.
Storm Drains & Catch Basins	2	Once prior to Oct 1st and once in January	Clean pipe(s) and catch basins of accumulated sediment, trash, and debris.
Parking Lots, Streets, & Sidewalks	Regular Inspections	N/A	Sweep pavement surface monthly to prevent accumulation of litter and debris. Litter, debris, and any cleaning agents will be trapped and collected and disposed of properly to prevent entry into storm drain system.

Storm Water Control Measure	Number of Annual Inspections	Inspection Date (if applicable)	Minimum Maintenance Required
Onsite Retention Basin	Semiannually	After each significant storm	Check/correct as required: differential settlement, cracking; erosion, leakage or tree growth on embankment; the condition of the riprap in the inlet, outlet and pilot channels; sediment accumulation in the basin; and the vigor and density of the grass turf on the basin side slopes and floor. Remove litter and debris from banks and basin bottom as required. Repair erosion to banks and bottom as required. Remove sediment when accumulation reaches 25% of original design depth, or if resuspension is observed. Clean in early Spring so vegetation damaged during cleaning has time to reestablish. Inspect outlet for clogging a minimum of twice a year, before and after the rainy season, after large storms, and more frequently if needed. Correct observed problems as necessary. Clean fore bay frequently to reduce frequency of main basin cleaning. Control mosquitoes, as necessary.
Biofilters	2	Beginning of the wet season and after significant storms	Check twice per year for signs of erosion, vegetation loss, and channelization of the flow. The grass should be mowed when it reaches a height of 6 inches. Allowing the grass to grow taller may cause it to thin and become less effective. The clippings should be removed. Remove accumulated trash.
Connector Pipe Screen/Trash Device	2	Beginning of the wet season and after significant storms	Inspect for proper functioning and remove trash buildup when accumulation reaches 25% of inlet capacity.
Detention Storage Pipes	2	Beginning of the wet season and after significant storms	Inspect for proper functioning and remove trash or sediment buildup. Implement vector control measures as needed.

5) Housekeeping procedures for prohibiting illicit discharges or potential illicit discharges to the storm drain will be implemented onsite in accordance with Ventura County's *Industrial/Commercial Clean Business Program* Fact Sheets, as provided in Appendix B. Some of those measures include:

- Prevent spills from entering storm drains and discharge points.
- Eliminate illegal connections to the storm drain.
- Routinely inspect and clean out all storm drains, discharge points & catch basins.
- Control litter by sweeping and picking up litter regularly.
- Clean mats in a sink or use a mat cleaning service.
- Use "dry" cleaning methods (sweep rather than hose down) to clean shop floors, materials processing and storage areas, access roads and parking lots.
- Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system.
- Train all employees.
- Utilize native vegetation to reduce water, fertilizer or pesticide needs.
- Use landscaping pesticides and fertilizers only as needed and apply as directed.
- Avoid over-watering to prevent excess runoff.
- Use integrated pest management (IPM) where appropriate.
- Use non-toxic substitute for chemicals when possible.
- Control litter by sweeping and picking up trash on a regular basis.

SPILL PLAN

1) Emergency Notification Procedures:

- In the event of a spill, contact John W. Belsher at (805) 542-9900.

- The following agencies shall be notified immediately in the event of a spill:

▪ Local emergency response:	**911**
▪ Ventura County Spill Hotline	(805) 320-6244
▪ City of Camarillo Illicit Discharge Spill Hotline	(805) 388-5338
▪ State Office of Emergency Services (OES)	(800) 852-7550
▪ Ventura County Environmental Health Dept.	(805) 654-2813
▪ State Regional Water Quality Control Board	(213) 576-6600
▪ Department of Toxic Substance Control (DTSC) (if waste oil is spilled)	(800) 260-3972
DTSC after-hours Spill Line	(800) 852-7550

- If a reportable quantity or more flows off-site from the property, follow the sequence of actions noted above and notify:

- National Response Center (800) 424-8802

- For spills that threaten navigable water, follow the sequence of actions noted above and notify:

  - United States Coast Guard (562) 980-4444

- When reporting to government agencies is required, notification should be made as soon as possible. Below are possible questions that the agency may ask.

- Document all reports to regulatory agencies. Ask the name and position of person you have contacted and note the agency and the time of your call. Write this information down.

  - Give the facility name, address, and phone number as well as your name and position.
  - Date and time of the spill:
    1. Time or estimate time spill began.
    2. Duration of spill or if it is continuing.
    3. Location of spill.
  - Spill information:
    1. Materials spilled.
    2. Volume or estimated volume spilled.
    3. Has spill entered storm drain or navigable waters? If so, how much? Is there potential for the spill to enter storm drain or navigable waters?
    4. The source of the discharge.
    5. A description of all affected media (e.g. water and/or soil).
    6. The cause of the discharge.
    7. Damages or injuries caused by the discharge.
  - Response measures taken:
    1. For containment.
    2. For clean-up.
    3. Has the source been stopped?
    4. Will an evacuation be required?
    5. Name of individuals and organizations who have been contacted.
  - Weather:
    1. Raining?
    2. Air temperature?
    3. Wind speed and direction?

- Do not wait until all information is known to contact agencies.
- Do not hang up until all questions are answered.

2) The following spill response procedures provide guidelines for use by those on duty to respond to releases. They are not meant to supplant the use of common sense and good judgment during emergencies. Do not contact any spilled material unless wearing proper personal protective equipment.

- **NOTIFY SUPERVISOR**. As soon as it is safe, notify your supervisor.
  - If the spill involves fire, the supervisor will call 911 immediately.
  - The supervisor will notify the O&M Coordinator and take charge until the O&M Coordinator arrives.
  - The O&M Coordinator will take charge of the situation on arrival.
- **EVACUATE** the immediate area.
- **AID** any persons that have been injured or contaminated or are in danger of being injured or contaminated. Do not put yourself in danger trying to save someone else. If someone is contaminated with material, avoid contacting that person.
- **STOP FLOW**, if it is safe to do so. Stop the source of the spill and contain the material that has already been spilled. Do this only if it can be accomplished safely without endangering life or property. Minimizing the amount of material spilled reduces the potential for discharge and the amount of clean up necessary.
- **ALERT OTHERS** in the area to stay clear.
- **ELIMINATE IGNITION SOURCES** in the area.
- **CONTAIN SPILL** if it has, or is about to, enter storm drains. Place absorbent material into position to contain the spill. Care should be used to prevent the spill from leaving the site or entering sewers and storm drains.
- **CLEAN UP** spilled material with absorbent materials, dikes, etc. Contact contractors (see next page) for assistance if necessary.
- **NOTIFY** personnel and agencies presented above.
- O&M Coordinator Responsibilities:

- In charge of overall incident response
- Calling emergency numbers as required
- Notifying people in the area and advising them to stay away from the spill
- Coordinating with outside emergency response and providing technical information
- Reporting emergency incidents to appropriate agencies
- Authorizing non-emergency cleanup measures
- Ensuring compliance with applicable federal, state, and local rules and regulations.

- Response Equipment – External Response Equipment:

  - Contractors may be contacted to provide the following spill response equipment (see below):
    1. Bins and equipment for used absorbent removal
    2. Vacuum truck to collect and remove spilled material

- Spill Response Contractor(s):

_____ _____

_____ _____

3) Spill Cleanup Procedures:

- Material generated during spill response activities must be disposed of in accordance with applicable federal, state, and local regulations.

- There may be various types of waste generated during response activities. Below is a list of common materials and disposal requirements.

  - Free product: If there is a large amount of this material, a vacuum truck should be contacted to collect and haul it to a licensed treatment, storage, and disposal facility for recycling or disposal. Small spills may be cleaned up using absorbent material.
  - Soiled rags, booms, and absorbent material should be drummed up and sent to a licensed treatment, storage, and disposal facility for disposal.

4) Material that enters storm drains at the site will travel through the storm drain system which discharges into Calleguas Creek, which ultimately flows to the Pacific Ocean.

5) Sampling Plan

- During a spill, it may be possible for contaminated material to enter the storm drain. If contaminated material enters the storm drain, it may be prudent to take samples to document the amount of material released.

- If sampling is performed, samples should be taken at the storm drain inlet where contaminated material is entering.

- The samples must be sent to a state-certified laboratory for analysis. The following procedures will be used for taking the samples:

  - Collect samples in sampling containers. Ensure that the sample is free of excess debris (i.e. leaves, paper fragments, etc.). Fill the container to the top.
  - The closed sample containers may be sealed with custody tape, which can be obtained from the test laboratory with the sample bottles. Do not seal the bottles with other types of tape (scotch, duct, cellophane, etc.) as organic material from the tape may contaminate the sample.
  - Label samples with the following information:

Company Name	Date Sampled
Time Sampled	Collection Point
Sample Description	Preservative
Analysis Required	Special Requirements

  - The laboratory should be instructed to analyze for the constituents which may have been discharged. In the event of an oil spill, the sample should be analyzed for “Oil & Grease.”
  - Complete a chain-of-custody form recording pertinent information including the information listed above and the signature of the person taking the sample. The test laboratory will provide the chain-of-custody forms.
  - If possible, chill the samples to 4°C (40°F) until the samples are delivered to the laboratory. Do not freeze the samples.
  - Send the samples to a state-certified laboratory, or call the laboratory to have the samples picked up.

FACILITY CHANGES

1) This O&M will be amended:

    - When there is a change in operations which may significantly affect the character or quantity of pollutants discharging from the site, or

    - When plans are made to modify the approved treatment devices.

2) Minor administrative changes to the O&M (changes in names, phone numbers, etc.) may be made by the O&M Coordinator.

3) Amendments to the O&M will be noted on the Amendment Log in Appendix D.

TRAINING

1) Training shall be provided to all individuals responsible for the maintenance and operations of the onsite facilities.

2) Training shall include:
    - Good housekeeping procedures defined in the plan.
    - Proper maintenance of all pollution mitigation devices.
    - Identification and cleanup procedures for spills and overflows.
    - Large-scale spill or hazardous material response.
    - Safety concerns when maintaining devices and cleaning spills.

BASIC INSPECTION AND MAINTENANCE ACTIVITIES

1) The Developer shall maintain onsite a log for inspector names, dates and storm water control measure devices to be inspected and maintained. Checklists for each inspection and maintenance category are provided in Appendix C.

2) Once annually, perform testing of any mechanical or electrical devices prior to wet weather.

3) Report any significant changes in storm water management control measures to the site management. As appropriate, assure mechanical devices are working properly and/or landscaped BMP plantings are irrigated and nurtured to promote thick growth.

4) Note any significant maintenance requirements due to spills or unexpected discharges.

5) As appropriate, perform maintenance and replacement as scheduled and as needed in a timely manner to assure storm water management control measures are performing as designed and approved.

6) Assure unauthorized low-flow discharges from the property do not by-pass storm water control measures.

7) Perform an annual assessment of each pollution generation operation and its associated storm water management control measures to determine if any part of the pollution reduction train can be improved.

APPENDIX A – SITE MAP

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES

0 1 2 3

SCALE: 1"=40'

0 40 80 120

LEGEND:

- SD — STORM DRAIN
- CATCH BASIN
- MANHOLE
- CDS UNIT
- RETAINING WALL
- DETENTION BASIN
- BIO RETENTION AREA

SCHEMATIC GRADING & DRAINAGE EXHIBIT

CITY OF CAMARILLO, CALIFORNIA
MAY 19, 2014

Penfield & Smith
Engineering • Surveying • Planning • Construction Management •
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 981-0706 Fax: (805) 981-0251

W.O. No. 21099.20

SHEET 1 OF 1

36-EXB SAVE DATE: 5/19/2014 11:25:41 AM PLOT BY:Richard Smith PLOT DATE:5/19/2014 11:39:25 AM PLOT SCALE:1:1
DRAWING:m:\acad\work\21099\21099.12\exhibits\grading exhibit.dwg

APPENDIX B – REFERENCE DOCUMENTS & FACT SHEETS

2) It is recommended that a minimum of three types of tree, shrubs, and/or herbaceous groundcover species be incorporated to protect against facility failure due to disease and insect infestations of a single species.

3) Native plant species and/or hardy cultivars that are not invasive and do not require chemical inputs should be used to the maximum extent practicable.

Operations and Maintenance

Bioretention areas require annual plant, soil, and mulch layer maintenance to ensure optimum infiltration, storage, and pollutant removal capabilities. In general, bioretention maintenance requirements are typical landscape care procedures and include:

1) Watering: Plants should be drought-tolerant. Watering may be required during prolonged dry periods after plants are established.

2) Erosion control: Inspect flow entrances, ponding area, and surface overflow areas periodically, and replace soil, plant material, and/or mulch layer in areas if erosion has occurred (see Appendix I for a bioretention inspection and maintenance checklist). Properly designed facilities with appropriate flow velocities should not have erosion problems, except perhaps in extreme events. If erosion problems occur, the following should be reassessed: (1) flow velocities and gradients within the cell, and (2) flow dissipation and erosion protection strategies in the pretreatment area and flow entrance. If sediment is deposited in the bioretention area, immediately determine the source within the contributing area, stabilize, and remove excess surface deposits.

3) Plant material: Depending on aesthetic requirements, occasional pruning and removing of dead plant material may be necessary. Replace all dead plants and if specific plants have a high mortality rate, assess the cause and, if necessary, replace with more appropriate species. Periodic weeding is necessary until plants are established. The weeding schedule should become less frequent if the appropriate plant species and planting density have been used and, as a result, undesirable plants excluded.

4) Nutrients and pesticides: The soil mix and plants should be selected for optimum fertility, plant establishment, and growth. Nutrient and pesticide inputs should not be required and may degrade the pollutant processing capability of the bioretention area, as well as contribute pollutant loads to receiving waters. By design, bioretention facilities are located in areas where phosphorous and nitrogen levels are often elevated and these should not be limiting nutrients. If in question, have soil analyzed for fertility.

5) Mulch: Replace mulch annually in bioretention facilities where heavy metal deposition is likely (e.g., contributing areas that include industrial and auto dealer/repair parking lots and roads). In residential lots or other areas where metal

deposition is not a concern, replace or add mulch as needed to maintain a 2 to 3 inch depth at least once every two years.

6) Soil: Soil mixes for bioretention facilities are designed to maintain long-term fertility and pollutant processing capability. Estimates from metal attenuation research suggest that metal accumulation should not present an environmental concern for at least 20 years in bioretention systems. Replacing mulch in bioretention facilities where heavy metal deposition is likely provides an additional level of protection for prolonged performance. If in question, have soil analyzed for fertility and pollutant levels.

3) Above the design treatment elevation, a typical lawn mix or landscape plants can be used provided they do not shade the swale vegetation.

4) Irrigation is required if the seed is planted in the spring or summer. Use of a permanent irrigation system may help provide maximal water quality performance. Drought-tolerant grasses should be specified to minimize irrigation requirements.

5) Vegetative cover should be at least 4 inches in height, ideally 6 inches. Swale water depth should ideally be 2/3 of the height of the shortest plant species.

6) Locate the swale in an area without excessive shade to avoid poor vegetative growth. For moderately shaded areas, shade tolerant plants should be used.

7) Locate the swale away from large trees that may drop excessive leaves or needles, which may smother the grass or impede the flow through the swale. Landscape planter beds should be designed and located so that soil does not erode from the beds and enter a nearby swale.

Maintenance Access

1) Access to the swale inlet and outlet should be safely provided, with ample room for maintenance and operational activities.

Operations and Maintenance

1) Inspect vegetated swales for erosion or damage to vegetation after every storm greater than 0.75 inches for on-line swales and at least twice annually for off-line swales, preferably at the end of the wet season to schedule summer maintenance and in the fall to ensure readiness for winter. Additional inspection after periods of heavy runoff is recommended. Each swale should be checked for debris and litter and areas of sediment accumulation (see Appendix I for a vegetated swale inspection and maintenance checklist).

2) Swale inlets (curb cuts or pipes) should maintain a calm flow of water entering the swale. Remove sediment as needed at the inlet, if vegetation growth is inhibited in greater than 10% of the swale or if the sediment is blocking even distribution and entry of the water. Following sediment removal activities, replanting and/or reseeding of vegetation may be required for reestablishment.

3) Flow spreaders should provide even dispersion of flows across the swale. Sediments and debris should be removed from the flow spreader if blocking flows. Splash pads should be repaired if needed to prevent erosion. Spreader level should be checked and releveled if necessary.

4) Side slopes should be maintained to prevent erosion that introduces sediment into the swale. Slopes should be stabilized and planted using appropriate erosion control measures when native soil is exposed or erosion channels are formed.

5) Swales should drain within 48 hours of the end of a storm. Till the swale if compaction or clogging occurs and revegetate. If a perforated underdrain pipe is present, it should be cleaned if necessary.

6) Vegetation should be healthy and dense enough to provide filtering, while protecting underlying soils from erosion:

   - Mulch should be replenished as needed to ensure survival of vegetation.
   - Vegetation, large shrubs or trees that interfere with landscape swale operation should be pruned.
   - Fallen leaves and debris from deciduous plant foliage should be removed.
   - Grassy swales should be mowed to 4 to 6 inches height. Grass clippings should be removed.
   - Invasive vegetation, such as Alligatorweed (*Alternanthera philoxeroides*), Halogeton (*Halogeton glomeratus*), Spotted Knapweed (*Centaurea maculosa*), Giant Reed (*Arundo donax*), Castor Bean (*Ricinus communis*), Perennial Pepperweed (*Lepidium latifolium*), and Yellow Starthistle (*Centaurea solstitalis*) should be removed and replaced with non-invasive species. Invasive species should never contribute more than 10% of the vegetated area. For more information on invasive weeds, including biology and control of listed weeds, look at the encycloweedia located at the California Department of Food and Agriculture website or the California Invasive Plant Council website at www.cal-ipc.org.
   - Dead vegetation should be removed if greater than 10% of area coverage or when swale function is impaired. Vegetation should be replaced and established before the wet season to maintain cover density and control erosion where soils are exposed.

7) Check dams (if present) should control and distribute flow across the swale. Causes for altered water flow and/or channelization should be identified and obstructions cleared. Check dams and swale should be repaired if damaged.

8) The vegetated swale should be well maintained. Trash and debris, sediment, visual contamination (e.g., oils), noxious or nuisance weeds, should all be removed.

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Storm Drains and Discharge Points

Return to Fact Sheet index

You are responsible to keep storm drains and other discharge points (drainage channels, sheet flow areas, etc.) clean throughout the entire facility (indoors and outdoors), including perimeter areas where surface runoff exits the property.	
WHY ARE STORM DRAINS & DISCHARGE POINTS A PROBLEM?	
Dirt, oil, grease and litter are washed down the storm drain with each rainfall event creating polluted runoff. Polluted runoff from your facility can reach water bodies and other wildlife habitats and harm fish, birds and human life.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF FROM ENTERING STORM DRAINS AND DISCHARGE POINTS BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
BEST MANAGEMENT PRACTICES	• Prevent spills from entering storm drains and discharge points. • Eliminate illegal connections to the storm drain. • Routinely inspect and clean out all storm drains, discharge points & catch basins. • Control litter by sweeping and picking up litter regularly. • Clean mats in a sink or use a mat cleaning service. • Collect all wastewater and discharge to the sanitary sewer. • Use "dry" cleaning methods (sweep rather than hose down) to clean shop floors, materials processing and storage areas, access roads and parking lots. • Use secondary containment measures for waste storage areas. • Practice good housekeeping to minimize liability, reduce costs and make detection of spills and potential problems easier to identify. • Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system. • Train all employees. Your success depends on a well-trained staff.

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Buildings and Grounds Maintenance

Return to Fact Sheet index

You are responsible for preventing contaminants from contributing to polluted stormwater runoff in areas where building or grounds maintenance is conducted (landscaping, cleaning activities, etc.)	
WHY IS BUILDING & GROUNDS MAINTENANCE A CONCERN?	
Areas where building or grounds maintenance is conducted can contribute contaminants to runoff when measures have not been taken to prevent discharges. The overuse of pesticides and fertilizers, over-watering and inadequate erosion control may result in an illegal discharge.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
BEST MANAGEMENT PRACTICES	• Utilize native vegetation to reduce water, fertilizer or pesticide needs. • Use landscaping pesticides and fertilizers only as needed and apply as directed. • Avoid over-watering to prevent excess runoff. • Use integrated pest management (IPM) where appropriate. • Sweep paved surfaces, rather than hosing down or using blowers. • Properly contain and dispose of waste water, sweepings and sediments. • Use non-toxic substitute for chemicals when possible. • Regularly inspect and clean storm drains. • Control litter by sweeping and picking up trash on a regular basis. • Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system. • Train all employees. Your success depends on a well-trained staff.

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Ventura Countywide Stormwater Quality Management Program

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Cleaning of Floors and Outside Impervious Surfaces

Return to Fact Sheet index

You are responsible to keep floors and impervious surfaces free of contaminates that are generated or accumulated there (process areas, kitchens and food preparation areas, parking lots, sidewalks, dumpster areas, etc.)	
WHY IS PROPER MAINTENANCE & CLEANING SO IMPORTANT?	
Contaminants from your facility can contribute to polluted runoff when floors and outside impervious areas are not maintained or cleaned properly.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
BEST MANAGEMENT PRACTICES	• Practice good housekeeping. • Keep outside areas (dumpsters, parking lots, etc.) free of trash and debris, and regularly clean them to prevent pollutant buildup. • Use absorbent for liquid spills and sweeping and mopping to clean outside areas. • Regularly inspect and clean out grease traps. • Avoid spilling onto floors or other surfaces through good housekeeping. • Control litter by sweeping and picking up trash on a regular basis. • Never dispose of wastewater to the storm drain. • Use "dry" cleaning methods (sweeping, vacuuming, etc.) on sidewalks and parking lots and dispose of waste properly. • Use a damp mop to clean floors, and contain the wastewater for proper disposal (sewer, on-site treatment, etc.) • Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system. • Train all employees. Your success depends on a well-trained staff.

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Tuesday, July 17, 2007

Ventura Countywide Stormwater Quality Management Program

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Vehicle & Equipment Washing & Cleaning

Return to Fact Sheet index

You are responsible to wash or clean vehicles and equipment (machinery, air filters, grease traps, etc.) properly to avoid contributing pollutants to runoff.	
WHY IS WASHING AND CLEANING A CONCERN?	
Your facility can contribute contaminants to runoff if waste water from equipment and vehicle cleaning is rinsed onto parking lots or into gutters or storm drains. Improperly stored contaminated rags may also result in an illegal discharge.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
BEST MANAGEMENT PRACTICES	• If possible use off-site commercial washing and steam cleaning. • Use designated wash areas, preferably covered, to prevent contact with stormwater. berm wash areas or use other measures to contain waste water. • Use alternative washing and cleaning methods to reduce the potential for non-stormwater discharges. If possible, use "dry" cleaning methods, such as wiping down, rather than hosing vehicles or equipment. • Never discharge wastewater to the storm drain. Discharge it to the sanitary sewer after contacting your local sewering agency to find out if pre-treatment is required. • Properly contain and dispose of cleanup materials (rags, towels, absorbent materials, etc.) • Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system. • Train all employees. Your success depends on a well-trained staff.

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Waste Management & Disposal

Return to Fact Sheet index

You are responsible for properly managing all areas where solid, liquid or hazardous wastes are handled, stored or disposed of to prevent pollutants from contaminating stormwater runoff..	
WHY IS WASTE MANAGEMENT & DISPOSAL A CONCERN?	
Your facility can contribute contaminants to stormwater runoff if wastes are not managed and disposed of properly. Poor waste management may result in an illegal discharge.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
BEST MANAGEMENT PRACTICES	• Cover and berm waste storage areas. • Keep outside areas (dumpsters, parking lots, etc.) free of trash and debris. • Store wastes indoors when possible. • Keep waste containers covered. • Regularly inspect and clean grease traps. • Use non-toxic substitute for chemicals when possible. • Recycle food grease, cleaning solutions, oil, antifreeze, batteries and fluids. • Sweep parking lots or other surfaces to remove debris blown on-site. • Store liquids in a designated area on a paved impervious surface within a covered secondary containment. Keep outdoor storage containers in good condition. • Regularly inspect and clean storm drains. • Regularly control litter by sweeping and picking up trash and litter. • Clean up spills immediately to minimize safety hazards and prevent discharge to the storm drain system. • Train all employees. Your success depends on a well-trained staff.

Ventura Countywide Stormwater Quality Management Program

Fact Sheet - Waste Recycling & Disposal

Return to Fact Sheet index

You are responsible to implement measures to detect, correct and enforce against illegal dumping of pollutants on streets, into water and the storm drain system.	
WHY IS PROPER DISPOSAL SO IMPORTANT?	
Properly dispose of wastes, and recycle when possible, to eliminate illegal discharges. Reduce, reuse and recycle hazardous and non-hazardous wastes when possible, to lower your disposal costs and the amount of waste entering our landfills. Participate in waste exchange opportunities to decrease the waste you generate and to save money and resources.	
WHAT CAN I DO?	PREVENT POLLUTED RUNOFF BY:
	• Implementing Best Management Practices (BMPs) as listed below • Training employees on BMPs, good housekeeping practices & spill response
WHO CAN I CALL TO GET INFORMATION?	For general information on Ventura County recycling & disposal programs visit: **www.wasteless.org** **NON-HAZARDOUS WASTE RECYCLING** Call the Ventura County 24 hr. Recycling Hotline at 805.654.3935 or visit their website at **www.wasteless.org/recycleguide/recyclgde.html** **HOUSEHOLD HAZARDOUS WASTE:** Disposal, Recycling & Substitutes Visit **www.wasteless.org/index2.html#HHWRDF** for information on upcoming collection events or to find a list of recycling and reuse facilities throughout Ventura County **VC MAX MATERIALS EXCHANGE** Call 805.654.2477 or visit **www.vcmax.org** for more information on the free countywide service designed to keep viable, reusable goods out of local landfills. This program promotes reuse and waste reduction; helps to reduce participant's disposal costs; and provides residents, non-profits, and local businesses with an opportunity to "reuse" items that others no longer want or need. **RECYCLING & WASTE REDUCTION ASSISTANCE FOR BUSINESSES** Call 805.654.3506 or visit **www.wasteless.org/buswst.html** for more information on this **FREE** consultation service provided by the Ventura County Solid Waste Management Department to businesses in the unincorporated areas of Ventura County. Businesses located within city limits should contact their city recycling offices for assistance. **WASTEWATER AWARDS PROGRAM FOR BUSINESSES** Call 805.654.3506 or visit **www.wasteless.org/awards.html** for more information on this countywide program designed to acknowledge businesses and non-profit organizations that are reducing waste.

APPENDIX C – INSPECTION FORMS

I.1 Bioretention/Planter Box Inspection and Maintenance Checklist

Date: _____ Work Order # _____

Type of Inspection: □ post-storm □ annual □ routine □ post-wet season □ pre-wet season

Facility: _____ Inspector(s): _____

Defect	Conditions When Maintenance Is Needed	Inspection Result (0, 1, or 2)†	Date Maintenance Performed	Comments or Action(s) Taken to Resolve Issue
Appearance	Untidy			
Trash and Debris Accumulation	Trash, plant litter and dead leaves accumulated on surface.			
Vegetation	Unhealthy plants and appearance.			
Irrigation	Functioning incorrectly (if applicable).			
Inlet	Inlet pipe blocked or impeded.			
Splash Blocks	Blocks or pads correctly positioned to prevent erosion.			
Overflow	Overflow pipe blocked or broken.			
Filter media	Infiltration design rate is met (e.g., drains 36-48 hours after moderate - large storm event).			

†Maintenance: Enter 0 if satisfactory, 1 if maintenance is needed and include WO#. Enter 2 if maintenance was performed same day.

I.2 Vegetated Swale Filter Inspection and Maintenance Checklist

Date: _____ Work Order # _____

Type of Inspection: □ post-storm □ annual □ routine □ post-wet season □ pre-wet season

Facility: _____ Inspector(s): _____

Defect	Conditions When Maintenance Is Needed	Inspection Result (0, 1, or 2)†	Date Maintenance Performed	Comments or Action(s) Taken to Resolve Issue
Appearance	Untidy			
Trash and Debris Accumulation	Trash and debris accumulated in the swale.			
Vegetation	When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation start to take over.			
Excessive Shading	Vegetation growth is poor because sunlight does not reach swale. Evaluate vegetation suitability.			
Poor Vegetation Coverage	When vegetation is sparse or bare or eroded patches occur in more than 10% of the swale bottom. Evaluate vegetation suitability.			
Sediment Accumulation	Sediment depth exceeds 2 inches or covers more than 10% of design area.			
Standing Water	When water stands in the swale between storms and does not drain freely.			
Flow spreader or Check Dams	Flow spreader or check dams uneven or clogged so that flows are not uniformly distributed through entire swale width.			

Defect	Conditions When Maintenance Is Needed	Inspection Result (0, 1, or 2)†	Date Maintenance Performed	Comments or Action(s) Taken to Resolve Issue
Constant Baseflow	When small quantities of water continually flow through the swale, even when it has been dry for weeks and an eroded, muddy channel has formed in the swale bottom.			
Inlet/Outlet	Inlet/outlet areas clogged with sediment and/or debris.			
Erosion/ Scouring	Eroded or scoured swale bottom due to flow channelization, or higher flows. Eroded or rilled side slopes.			
	Eroded or undercut inlet/outlet structures			

†Maintenance: Enter 0 if satisfactory, 1 if maintenance is needed and include WO#. Enter 2 if maintenance was performed same day.

APPENDIX D – AMENDMENT LOG

AMENDMENT LOG

Amendment No.	Date	Brief Description of Amendment	Prepared and Approved By

gravels and have a high rate of water transmission. Ventura County soil numbers 6 and 7 are Group A soils.

- Group B soils are typically silty loams or loams. They have a moderate infiltration rate when thoroughly wetted and consist chiefly of moderately deep to deep and moderately well to well drained soils with moderately fine to moderately coarse texture. Ventura County soil numbers 4 and 5 are Group B soils.

- Group C soils are typically sandy clay loams. They have low infiltration rates when thoroughly wetted, consist chiefly of soils with a layer that impedes downward movement of water, and/or have moderately fine to fine soil structure. Ventura County soil numbers 2 and 3 are Group C soils.

- Group D soils are typically clay loams, silty clay loams, sandy clays, silty clays, or clays. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with high swelling potential, permanent high water table, claypan or clay layer at or near the surface, and/or shallow soils over nearly impervious material. Ventura County soil number 1 is a Group D soil.

Infiltration-based BMPs should be feasible in areas mapped with Ventura County Soil Numbers 4 through 7. If site-specific data is available, then soils with infiltration rates of 0.5 in/hr or greater are considered feasible for infiltration. Infiltration-based BMPs should not be designed for sites mapped with Ventura County Soil Numbers 1 through 3 (unless site specific testing is performed and shows an infiltration rate greater than 0.5 in/hr) or with site-specific infiltration rates less than 0.5 in/hr.

Locations where soils are mapped with Ventura Hydrology Manual Soil Number 3, or where a site-specific analyses show that the soils have an infiltration rate of 0.3 to 0.5 inches per hour, and no other infiltration-related infeasibility criteria apply, shall use a Bioinfiltration BMP (or Rainwater Harvesting). Bioinfiltration is an adaption of the Bioretention with an Underdrain BMP in which the underdrain is raised above the gravel storage layer in order to promote infiltration but allow release of biotreated runoff to the storm drain when infiltration capacity is reached.

Early identification of soil types throughout the project footprint can reduce the number of test pit investigations and infiltration tests needed. Early identification reduces the number of potential test sites to locations with those that are most likely to be amenable to infiltration. Guidance for conducting test pit investigations and infiltration tests is provided in Appendix C.

Project applicants should review available geologic or geotechnical reports on local geology to identify relevant features such as depth to bedrock, rock type, lithology, faults, and hydrostratigraphic or confining units. These geologic investigations may also identify shallow water tables and past groundwater issues that are important for BMP design (see below).

United States Department of Agriculture

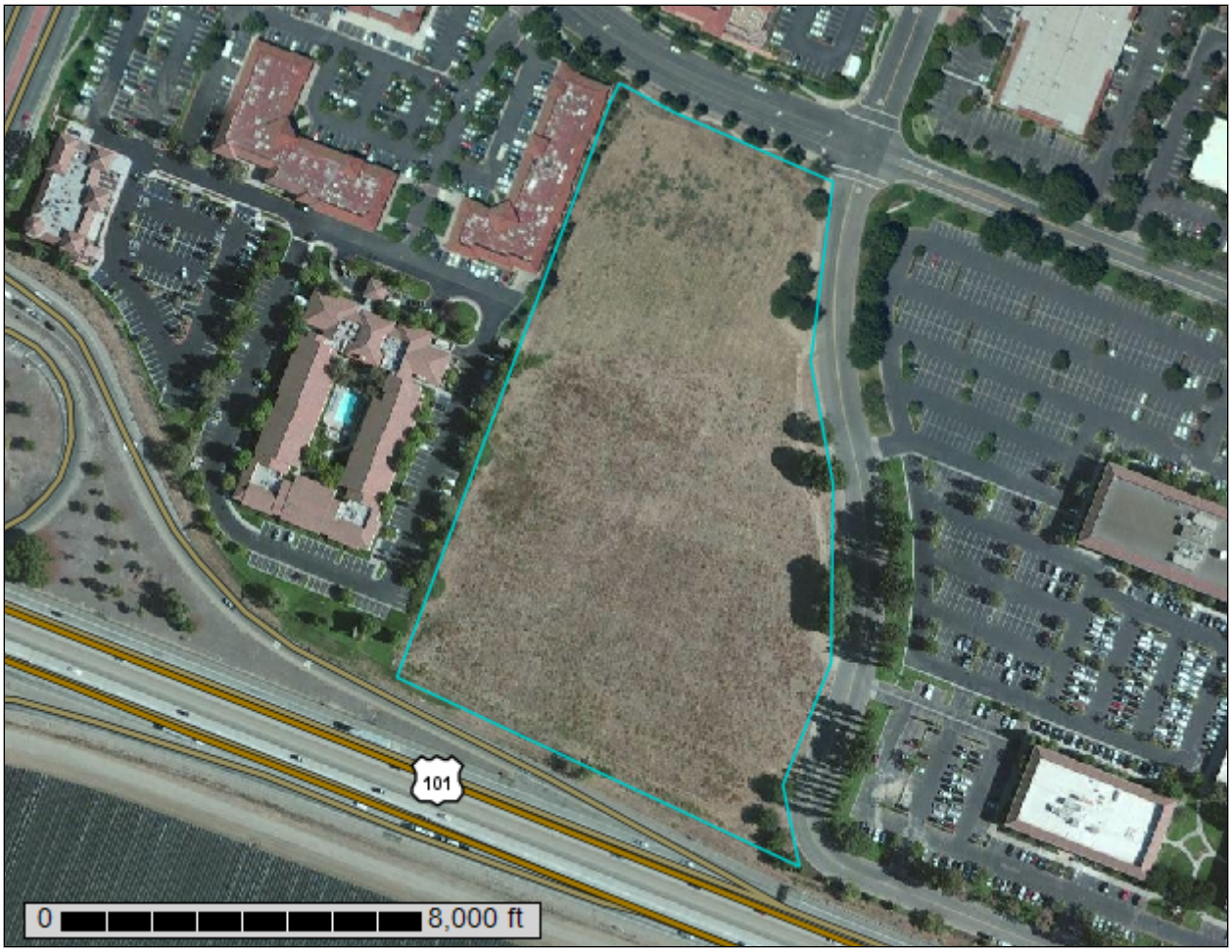
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Ventura Area, California



May 27, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

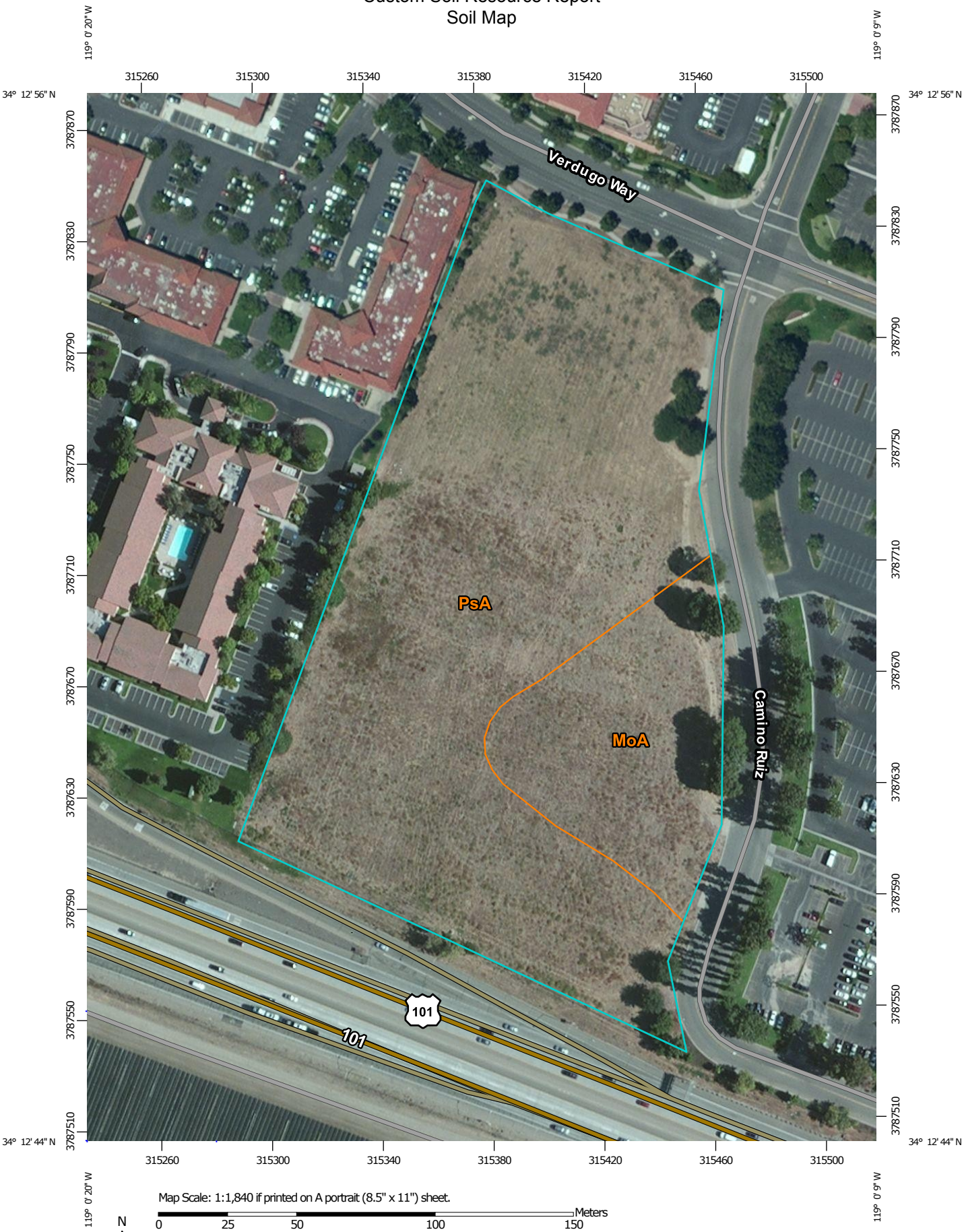
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ventura Area, California
Survey Area Data: Version 7, Dec 16, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 5, 2010—Aug 31, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Ventura Area, California (CA674)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
MoA	Mocho loam, 0 to 2 percent slopes	1.6	18.8%
PsA	Pico loam, sandy substratum, 0 to 2 percent slopes	7.0	81.2%
Totals for Area of Interest		**8.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Ventura Area, California

MoA—Mocho loam, 0 to 2 percent slopes

Map Unit Setting

Elevation: 0 to 3,500 feet
Mean annual precipitation: 12 to 30 inches
Mean annual air temperature: 59 degrees F
Frost-free period: 200 to 350 days

Map Unit Composition

Mocho and similar soils: 85 percent
Minor components: 11 percent

Description of Mocho

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 16 inches: moderately alkaline, loam
H2 - 16 to 60 inches: moderately alkaline, loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups

Farmland classification: Prime farmland if irrigated
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: B

Minor Components

Anacapa

Percent of map unit: 4 percent

Sorrento

Percent of map unit: 4 percent

Hueneme

Percent of map unit: 3 percent

PsA—Pico loam, sandy substratum, 0 to 2 percent slopes

Map Unit Setting

Elevation: 10 to 1,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 200 to 300 days

Map Unit Composition

Pico and similar soils: 85 percent
Minor components: 15 percent

Description of Pico

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 14 inches: moderately alkaline, loam
H2 - 14 to 30 inches: moderately alkaline, stratified sandy loam to loam
H3 - 30 to 60 inches: moderately alkaline, stratified gravelly sand to stony sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups

Farmland classification: Farmland of statewide importance
Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A

Minor Components

Anacapa

Percent of map unit: 4 percent

Metz

Percent of map unit: 4 percent

Sorrento

Percent of map unit: 4 percent

Pico

Percent of map unit: 3 percent

References

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Ventura County Soil Numbers

- 1
- 2
- 3
- 4
- 5
- 6
- 7

Appendix F

Wastewater Studies

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board of Directors
Al E. Fox
Division 1
Jeffrey C. Brown
Division 2
Timothy H. Hoag
Division 3
Eugene F. West
Division 4
Terry L. Foreman
Division 5
General Manager
Tony L. Stafford

April 10, 2014

REC
APR 14 2014
BY:

Penfield & Smith
Attention: Mr. Scott Meckstroth
1327 Del Norte Road, Suite 200
Camarillo, CA 93010

Sewer Availability Letter for PB Companies – Mission Oaks Apartments, 5300 Camino Ruiz, (APN 160-0-091-050,060,100,120)

Gentlemen:

Sanitation services to the subject property will be made available subsequent to all technical, financial, and legal arrangements made with Camrosa for installation of required sewerage facilities. All technical studies, financial, and legal arrangements must be completed to the satisfaction and approval of Camrosa prior to issuance of a Sewer Will-Serve letter. It is our understanding that you are proposing development of a 260 unit multi-family apartment building within the Mission Oaks business park area.

Camrosa provides sanitation service to the existing properties within the Mission Oaks business park. Applicant will be required to prepare and submit, for approval, a sewer master plan. While Camrosa has the treatment capacity to take the additional flows, the developer will need to pay Capital Improvement Charges that are currently $4,675 per equivalent dwelling unit, but are subject to change.

This Sewer Availability Letter expires two-years from the above date.

Sincerely,

Stella Pimentel
Customer Account Supervisor

7385 Santa Rosa Road • Camarillo, CA 93012-9284
Phone: (805) 482-4677 • FAX: (805) 987-4797
Website: www.camrosa.com

Penfield & Smith

1327 Del Norte Road, Ste 200
Camarillo, CA 93010

tel 805-981-0706
fax 805-981-0251

www.penfieldsmith.com

Santa Barbara
Camarillo
Santa Maria
Lancaster

Civil Engineering

Land Surveying

Land Use Planning

Construction Management & Inspection

Traffic & Transportation Engineering

Transportation Planning

Structural Engineering

Water Resources Engineering

GIS

W.O. 21099.03

June 9, 2014

Camrosa Water district
Attn: Terry Curson
7385 Santa Rosa Road
Camarillo, CA 93012
Via e-mail: terryc@camrosa.com

Subject: **Sewer Master Plan And Request for a Revised Sewer Availability Letter for PB Companies Mission Oak Apartments 5000 Camino Ruiz Camarillo, California**

On behalf of PB Companies, Penfield & Smith prepared this letter report as a Sewer Master Plan and formal request for a revised Sewer Availability Letter for the subject project located at the southeast corner of Verdugo Way and Camino Ruiz in Camarillo, California. The subject site encompasses approximately 8.66 acres of undeveloped fallow land. The proposed use of the site has been modified for up to 145-multifamily residential units, configured in twenty-three 2- and 3-story townhomes.

Background

Pursuant to the preliminary plans for the project, which proposed 260 multi-family units, Camrosa Water District issued the attached Sewer Availability Letter dated April 10, 2014. The Sewer Availability Letter requires the submittal of a Sewer Master Plan, which is being presented herein.

Parcel information

The 8.66 acre project consists of four legal lots.
APN's: 160-0-091-120, 160-0-091-050, 160-0-091-060, 160-0-091-100; APN book 160, page 9 is presented as an attachment.

The proposed use of the site includes up to 145 multi-family residential units situated in up to twenty-three buildings. The attached Mission Oaks Development - Site Plan details the latest proposed site plan, including the approximate configuration of water, sewer and storm drain pipelines.

Design Criteria

As the site is within the service area of Camrosa Water District for sewer service, the design criteria for the project will be per Camrosa Water District's current Sanitary Sewer Design and Construction Standards.

Sewer Loading

Based on Camrosa Water District Sanitary Sewer Design and Construction Standards (Section 2.0) the site will have an expected residential density and sewer load of 2.15 capita per multi-family unit and 100 gallons per day per capita, respectively. As such the proposed 145 unit multi-family project will generate an average flow of approximately 31,175 gallons per day (0.048 cubic feet per second; cfs).

Camrosa Water District prescribes sizing sewer lines and slopes based on peak flows. Camrosa Water District does not provide a specific means for calculating peak flows; however sewer peaking factors can be determined using any of a number of good engineering principles based on either anticipated population or average flow. Peaking flow can be determined using the following common calculation when sewer flows are less than 1.0 cfs:

Equation 1: $$\text{Peak Flow}_{[cfs]} = 2 \times (\text{Average Flow}_{[cfs]})^{0.822}$$

Given Equation 1, the proposed Peak Flow for the project will be 0.16 cfs (74 gpm).

Onsite Sewer Conveyance System

A preliminary onsite sewer conveyance system design is presented in the attached Mission Oaks Development – Site Plan. The onsite sewer conveyance system will be sized using Section 2.0 of Camrosa Water District Sanitary Sewer Design and Construction Standards. Given this design criteria for the project, the proposed onsite sewer conveyance system will utilize 8-inch sewer pipe set at a slope of approximately 0.006 feet per foot. As calculated in the attached Worksheet: Mission Oaks Development Peak Discharge, the anticipated peak flow velocity will be 2.0 feet per second (ft/s) with the 8-inch pipe being 28 percent full.

Connection to Public Sewer

The Mission Oaks Development sewer system will connect to the existing public sewer system at the southern manhole of Camino Ruiz Drive at in invert elevation of 109.18. The existing public sewer line in Camino Ruiz is an 8-inch main which flows north at a slope of 0.003725 feet per foot. Based on gross floor area of properties being served by the existing 8-inch main in Camino Ruiz, the estimated average flow is approximately 0.08 cfs. The estimated combined flow of the existing properties and the proposed Mission Oaks Development will average approximately 0.128 cfs and peak at 0.37 cfs. Based on the attached Worksheet: Camino Ruiz Peak Discharge, the proposed combined peak sewer flow in the public street will flow at 2.1 ft/s at 50 percent full. Review of existing infrastructure downstream of the intersection of Camino Ruiz and Verdugo Way is not within the scope of this report, but can be addressed if required by the District.

Conclusion

We respectfully request that you consider the information presented within this Sewer Master Plan and initiate the steps required for the issuance of a revised Sewer Availability Letter for the subject site. The revised Sewer Availability Letter should stipulate the proposed development of up to 145 multi-family units and make reference to this Sewer Master Plan. If you have any questions or comments, please contact the undersigned at 805-981-0706, ext. 221, or email at sdm@penfieldsmith.com.

Sincerely,

PENFIELD & SMITH

REGISTERED PROFESSIONAL ENGINEER
SCOTT MECKSTROTH
NO 63337
CIVIL
STATE OF CALIFORNIA

Scott D. Meckstroth, R.C.E. 63337
Senior Engineer

Attachments:

- Camrosa Water District *Sewer Availability Letter for PB Companies – Mission Oaks Apartments, 5300 Camino Ruiz, (APN 160-0-091-050, 060, 100, 120)*, April 10, 2014
- Penfield & Smith Mission Oaks Development – Site Plan, June 9, 2014
- Worksheet: Mission Oaks Development Peak Discharge
- Worksheet: Camino Ruiz Peak Discharge

Cc: John Belsher, PB Companies

w:\work\21000-21999\21099\phase .03 engineering\sewer master plan letter 2014-06-09.docx

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board of Directors
Al E. Fox
Division 1
Jeffrey C. Brown
Division 2
Timothy H. Hoag
Division 3
Eugene F. West
Division 4
Terry L. Foreman
Division 5
General Manager
Tony L. Stafford

April 10, 2014

RECEIVED
APR 14 2014
BY:

Penfield & Smith
Attention: Mr. Scott Meckstroth
1327 Del Norte Road, Suite 200
Camarillo, CA 93010

Sewer Availability Letter for PB Companies – Mission Oaks Apartments, 5300 Camino Ruiz, (APN 160-0-091-050,060,100,120)

Gentlemen:

Sanitation services to the subject property will be made available subsequent to all technical, financial, and legal arrangements made with Camrosa for installation of required sewerage facilities. All technical studies, financial, and legal arrangements must be completed to the satisfaction and approval of Camrosa prior to issuance of a Sewer Will-Serve letter. It is our understanding that you are proposing development of a 260 unit multi-family apartment building within the Mission Oaks business park area.

Camrosa provides sanitation service to the existing properties within the Mission Oaks business park. Applicant will be required to prepare and submit, for approval, a sewer master plan. While Camrosa has the treatment capacity to take the additional flows, the developer will need to pay Capital Improvement Charges that are currently $4,675 per equivalent dwelling unit, but are subject to change.

This Sewer Availability Letter expires two-years from the above date.

Sincerely,

Stella Pimentel
Customer Account Supervisor

7385 Santa Rosa Road • Camarillo, CA 93012-9284
Phone: (805) 482-4677 • FAX: (805) 987-4797
Website: www.camrosa.com

PROPOSED PRIVATE WATER AND SEWER SITE PLAN
SCALE: 1" = 40'

PROPOSED PRIVATE UTILITY LEGEND:

- PRIVATE WATER LINE
- PRIVATE SEWER
- WATER METER (3" COMPOUND)
- DOUBLE DETECTOR CHECK
- FIRE HYDRANT
- WATER VALVE
- IRRIGATION METER
- SEWER MANHOLE
- SEWER CLEANOUT

LEGEND:

- FENCELINE
- EASEMENT
- LOT LINE
- PROPERTY LINE
- RIGHT OF WAY
- ROAD CENTERLINE

EXISTING UTILITY LEGEND:

- POTABLE WATER
- ELECTRICAL
- GAS
- SANITARY SEWER
- STORM DRAIN
- TIMEWARNER CONDUITS
- VERIZON CONDUITS
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SEWER OR STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- ELECTRICAL VAULT
- STREET LIGHT

FOR REDUCED PLANS ORIGINAL SCALE IN INCHES
0 1 2 3

Penfield & Smith
Engineering • Surveying • Planning • Construction Management •
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 987-0705 Fax: (805) 987-3251

W.O. No. 21099.03

SCALE: 1"=40'
0 40 80 120

MISSION OAKS DEVELOPMENT - SITE PLAN

CITY OF CAMARILLO, CALIFORNIA
JUNE 9, 2014

SHEET 1 OF 1

36-EXB SAVE DATE: 6/9/2014 3:10:42 PM PLOT BY: Richard Smith PLOT DATE: 6/9/2014 3:11:30 PM PLOT SCALE: 1:1
DRAWING: \\cosf\work\21099\21099.03\exhibits\onsite ref_21099.03.dwg

Worksheet for Mission Oaks Dev. Peak Discharge

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00600	ft/ft
Diameter	8.0	in
Discharge	0.16	cfs

Results

Normal Depth	0.19	ft
Flow Area	0.08	ft^2
Wetted Perimeter	0.74	ft
Hydraulic Radius	0.11	ft
Top Width	0.60	ft
Critical Depth	0.18	ft
Percent Full	28	%
Critical Slope	0.00646	ft/ft
Velocity	2.0	ft/s
Velocity Head	0.06	ft
Specific Energy	0.25	ft
Froude Number	0.97	
Maximum Discharge	1.01	ft^3/s
Discharge Full	0.94	ft^3/s
Slope Full	0.00018	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	27.96	%
Downstream Velocity	Infinity	ft/s

Worksheet for Mission Oaks Dev. Peak Discharge

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.19	ft
Critical Depth	0.18	ft
Channel Slope	0.00600	ft/ft
Critical Slope	0.00646	ft/ft

Worksheet for Camino Ruiz Peak Discharge

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.013	
Channel Slope	0.00373	ft/ft
Diameter	8.0	in
Discharge	0.37	cfs

Results

Normal Depth	0.33	ft
Flow Area	0.17	ft^2
Wetted Perimeter	1.05	ft
Hydraulic Radius	0.17	ft
Top Width	0.67	ft
Critical Depth	0.28	ft
Percent Full	50	%
Critical Slope	0.00667	ft/ft
Velocity	2.1	ft/s
Velocity Head	0.07	ft
Specific Energy	0.40	ft
Froude Number	0.73	
Maximum Discharge	0.79	ft^3/s
Discharge Full	0.74	ft^3/s
Slope Full	0.00094	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	50.09	%
Downstream Velocity	Infinity	ft/s

Worksheet for Camino Ruiz Peak Discharge

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	0.33	ft
Critical Depth	0.28	ft
Channel Slope	0.00373	ft/ft
Critical Slope	0.00667	ft/ft

Appendix G

Water Studies

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board of Directors
Al E. Fox
Division 1
Jeffrey C. Brown
Division 2
Timothy H. Hoag
Division 3
Eugene F. West
Division 4
Terry L. Foreman
Division 5
General Manager
Tony L. Stafford

May 22, 2014

Penfield & Smith
Attention: Mr. Scott Meckstroth
1327 Del Norte Road, Suite 200
Camarillo, CA 93010

Conditional Water Availability Letter – PB Homes Mission Oaks Development – 5000 Camino Ruiz, Camarillo, CA

Dear Mr. Meckstroth:

Domestic water service and fire flow for protection to the subject property may be made available subsequent to meeting all conditions outlined in this letter. All financial and legal arrangements must be completed prior to recordation of the proposed development and issuance of a Water Will-Serve Letter. This Water Availability Letter is just one step in obtaining water service and does not guarantee or imply that water service will be provided.

The following conditions for the issuance of a Conditional Water Availability Letter must be met:

1. The applicant must submit for approval a Water Master Plan. The Master Plan will analyze and include water demands (both potable & non-potable) for both domestic and common areas, general pipe sizing and alignment for potable and non-potable service, fire flow analysis, service pressures for each lot, and any distribution and storage infrastructure.

2. The Master Plan must be reviewed and approved by the District. The applicant will be charged a fee based upon the extent of the Master Plan. Such charges shall not be refundable.

3. Prior to recordation of tract or parcel maps, the applicant will grant to Camrosa Water District appropriate on-site easements for the purpose of constructing, serving, and maintaining potable and non-potable water lines and facilities, including areas that may be beneficial for water service to adjacent properties.

4. Prior to issuance of a Water Will-Serve Letter, the applicant must grant all underlying water rights and wells to the District.

5. Prior to issuance of a Water Will-Serve Letter, the applicant will provide the District with a Mitigation Plan to offset total maximum day water demands, as outlined below. Demand will be supplied by the Camrosa Water District through the development of new water resources utilizing the Mitigation Plan. The development of the Mitigation Plan and the financing of mitigation projects therein are the responsibility of the applicant. Mitigation cannot negatively affect the existing customer base, and the Mitigation Plan must be reviewed and approved by the District. The applicant will be responsible for costs associated with this review. Such charges shall not be refundable. Following is a list of required conditions for a Mitigation Plan:

a. New demand, potable and non-potable, must be mitigated by developing new water.
b. Mitigation cannot increase the use of existing water supplies.
c. Mitigation cannot reduce the District's self-reliance.
d. Mitigation cannot increase the financial burden of the existing customer base.

6. Prior to the issuance of a Water Will-Serve Letter, the applicant must pay 20% of the estimated cost of the project described in the Mitigation Plan or enter into a sub-division improvement agreement as approved and accepted by the General Manager.

7. Prior to the issuance of a Water Will-Serve Letter, the applicant must meet all conditions required within the District's Development Checklist.

8. Prior to the issuance of a Water Will-Serve Letter, the applicant must meet any additional requirements as determined by the General Manager.

9. Prior to receiving domestic water service, projects described in the Mitigation Plan must be completed.

10. This Conditional Water Availability Letter will expire after two years from the date of this letter if a Water Will-Serve Letter has not been issued, or the Conditional Water Availability Letter has not been renewed pursuant to paragraph 11.

11. If the applicant would like a one-time, 24-month renewal for this Conditional Water Availability Letter, the request for renewal must be submitted in writing to the District prior to the original Water Availability Letter's expiration date. The Mitigation Plan will be reviewed by the District to determine whether the mitigation described therein still applies. If water supply conditions have changed, the Mitigation Plan must be amended to include new mitigation options and re-submitted to the District for evaluation. The applicant will be charged a fee based upon the extent of the necessary evaluation. Such charges shall not be refundable. Upon evaluation, the District may grant a one-time, 24 month renewal.

If you have any questions, please contact Mr. Terry Curson at (805) 482-8063 or terryc@camrosa.com

Sincerely,

Stella Pimentel

Stella Pimentel
Customer Accounts Supervisor

CAMROSA WATER DISTRICT
BUILDING WATER SELF-RELIANCE

Board of Directors
Al E. Fox
Division 1
Jeffrey C. Brown
Division 2
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Division 3
Eugene F. West
Division 4
Terry L. Foreman
Division 5
General Manager
Tony L. Stafford

May 20, 2014

RECEIVED
MAY 23 2014
BY:

Penfield & Smith
Attention: Mr. Scott Meckstroth
1327 Del Norte Road, Suite 200
Camarillo, CA 93010

Water Master Plan Review for PB Homes Mission Oak Development – 5000 Camino Ruiz, Camarillo, CA

Dear Mr. Meckstroth:

District staff has received and reviewed the revised Water Master Plan dated May 15, 2014, for the subject project. The Master Plan report is found to be in general conformance with District Standard requirements; however, the following comments are incorporated herewith:

1. The project size and type has changed from approximately 260 multi-family residential apartments to 145 multi-family residential townhomes. Given this change, it is expected that water service to each townhome will be served from individual domestic water meters. This type of water service will require an on-site public water system. The full extent of improvements will be determined by the District during initial design of the water system.

2. As such time as the mitigation plan is developed and approved, the developer is required to mitigate maximum day demands as shown in the Water Master Plan as 144,028 GPD.

In response to the severe reductions in State Water Project water availability, Camrosa's Board of Directors declared a moratorium on new development water services within the District's service area that results in no unmitigated growth in the use of potable water. As currently proposed, total water demand for the Project will be supplied by the Camrosa Water District through development of new potable water resources utilizing a mitigation plan prepared by the applicant that must first be approved by Camrosa. All mitigation is the responsibity of the Applicant. In some instances, there is often a long time period between the issuance of the "Water Availability Letter" and the request for the "Water Will-Serve" and the previously approved mitigation may change at the discretion of the District.

If you have any questions, please contact me at (805) 482-8063 or terryc@camrosa.com

Sincerely,

Terry Curson

Terry Curson,

Project Engineer

cc: Customer Service Manager
District Inspector

Penfield & Smith

1327 Del Norte Road, Ste 200
Camarillo, CA 93010

tel 805-981-0706
fax 805-981-0251

www.penfieldsmith.com

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Water Resources Engineering

GIS

W.O. 21099.03

May 15, 2014

Camrosa Water district
Attn: Terry Curson
7385 Santa Rosa Road
Camarillo, CA 93012
Via e-mail: terryc@camrosa.com

Subject: Revised Water Master Plan and Request for Water Availability Letter for PB Companies Mission Oak Apartments 5000 Camino Ruiz Camarillo, California

On behalf of PB Companies, Penfield & Smith prepared this letter report as a Water Master Plan and formal request for a Water Availability Letter for the subject project located at the southeast corner of Verdugo Way and Camino Ruiz in Camarillo, California. The subject site encompasses approximately 8.66 acres of undeveloped fallow land. The proposed use of the site will be up to 145-multifamily residential units, configured in twenty-three 2-and 3-story townhomes.

Background

Pursuant to the Penfield & Smith *Water System Infrastructure Study-Mission Oaks Business Park, Camarillo, California,* dated March 10, 2011, Camrosa Water District issued a Water Availability Letters dated March 17, 2011 to Trilliad Development for potable water usage for a proposed development consisting of Light Commercial, Office and Retail land use. The Camrosa Water Availability Letters stipulated that a change in proposed use may require additional mitigation measures to offset an increase in proposed potable water use. Copies of the March 10, 2011, Penfield & Smith Study and Camrosa Water Availability Letters are presented as an attachment.

Parcel information

The 8.66 acre project consists of four legal lots.
APN's: 160-0-091-120, 160-0-091-050, 160-0-091-060, 160-0-091-100; APN book 160, page 9 is presented as an attachment.

The proposed use of the site includes up to 145 multi-family residential units situated in up to twenty-three buildings. The attached Mission Oaks Development - Site Plan details the latest proposed site plan, including the approximate configuration of potable water and fire water pipelines, water meter

and double detector check locations. Also shown are existing fire hydrant locations, and service laterals and meters.

Water Demands

Based on Camrosa water standards of 2.1 capita per multi-family unit and 220 gallons per day capita water use, the proposed 145 unit multi-family project will demand approximately 66,990 gallons per day (75.0 Acre-feet per year). The design average day demand (ADD) for the project is 46.5 gallons per minute (gpm). Using Table 2.6 of the Camrosa Water Standards indicating maximum day demand (MDD) and peak hour demand (PHD) factors of 2.15 and 4.50 of the ADD, respectively, the following demands loads are estimated for the proposed project:

ADD = 46.5 gpm
MDD = 100 gpm
PHD = 209 gpm

Fire Flow Requirements

Per Ventura County Fire Protection District Standards, the fire flow (FF) requirements for the proposed project are estimated to be 1,625 gpm for a duration of 3-hours. This fire flow estimate is based on the square footage of the largest building (30,750 square feet, and a 50% reduction for fire suppression sprinklers and building type considerations. Camrosa Water District stipulates a more conservative fire flow requirement of 2,000 gpm for high-density residential developments. As such, the design fire flow requirement for the proposed project will be the more conservative 2,000 gpm condition.

Water and Fire Flow Service

This proposed water demand and fire flow service would be provided by the 10-inch diameter Camrosa potable water line located within Camino Ruiz and the 12-inch diameter potable Camrosa water line in Verdugo Way. The location of the Camrosa water lines are detailed in the attached Mission Oaks Development – Site Plan.

The available capacity of the Camrosa water conveyance system in the area is based on general area fire flow results from 2011 at 5217 Camino Ruiz. These results indicate an available fire flow of 6,742 gallons per minute (gpm) at 20 pounds per square inch (psi). Another fire flow test near Adolfo Road near Los Pueblos in 2008 was determined to yield 7,316 gpm at 20 psi.

The hydraulic grade line (HGL) serving the site vicinity is a minimum of 410-feet and maximum of 440-feet, equating to a pressure of approximately 130 pounds per square inch (psi) at ground-level (el=120-feet) at the site. For a proposed 3-story building with an estimated maximum height of 47-feet, the minimum pressure of the fire sprinkler system would be approximately 105 psi.

Proposed Onsite Water System

The proposed onsite water system will be comprised of a potable water line and a parallel fire water line. The potable water line will be a looped 4-inch diameter PVC line served via a 4-inch lateral. Potable water to the system will be metered through a 3-inch compound meter. The fire water system will consist of a looped 8-inch diameter PVC line served via a 10-inch lateral and

trunk line and 10-inch double detector check (DDC). We anticipate utilizing approximately nine new fire hydrants for the project. Five of the proposed hydrants will be situated onsite and connected to the private fire water system, while four proposed hydrants will be situated along the public right-of-way and connected to the Camrosa system within Verdugo Way and Camino Ruiz.

Conclusion

We respectfully request that you consider the information presented herein and initiate the steps required for the issuance of a Water Availability Letter for the subject site. If you have any questions or comments, please contact the undersigned at 805-981-0706, ext. 221, or email at sdm@penfieldsmith.com.

Sincerely,

PENFIELD & SMITH

Scott D. Meckstroth, R.C.E. 63337
Senior Engineer

Attachments:

- Penfield & Smith *Water System Infrastructure Study, Mission Oaks Business Park, Camarillo, California*, March 10, 2011
- Camrosa Water District *Water Availability Letter(s) for IPD (390-394) (Mission Oaks Business Park – Trilliad Development, Inc.*, March 17, 2011
- Ventura County APN Book 160, page 9, April 28, 2011
- Penfield & Smith Mission Oaks Development – Site Plan, May 15, 2014

Cc: John Belsher, PB Companies

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21099-03

CAMROSA WATER DISTRICT

BUILDING WATER SELF-RELIANCE

Board of Directors
Al E. Fox
Division 1
Jeffrey C. Brown
Division 2
Timothy H. Hoag
Division 3
Eugene F. West
Division 4
Terry L. Foreman
Division 5

General Manager
Frank E. Royer

March 17, 2011

Valerie Draeger
Triliad Development Inc.
270 Conejo Ridge, Suite 200
Thousand Oaks, CA 91361

Water Availability Letter for IPD 390 (Mission Oaks Business Park) - Triliad Development Inc

Dear Ms. Draeger:

This is to certify that domestic water service and ample water flow for fire protection to the subject property will be made available subsequent to financial arrangements being made with Camrosa Water District for installation of required potable and non-potable water facilities. All financial and legal arrangements must be completed prior to recordation of the proposed lot and issuance of a water will-serve letter along with the Conditions for Approval listed as follows:

1. Applicant shall construct all non-potable water facilities in accordance with District Standards as detailed in Penfield & Smiths "Water System Infrastructure Study - Mission Oaks Business Park, Camarillo, California" and Exhibit 1, dated March 10, 2011;
2. Applicant shall grant to the Camrosa Water District, appropriate easements within IPD - 395, IPD - 396, & IPD - 397. for the purpose of constructing, serving, and maintaining non-potable water lines to supply adjacent properties;
3. Applicant shall limit potable water usage for the proposed IPDs to Light Commercial, Office, and Retail. In the event usages change, additional potable water mitigation may be required.

In response to the severe reductions in State Water Project water availability, Camrosa's Board of Directors declared a moratorium on new development water services within the District's service area that results in no unmitigated growth in the use of potable water. As currently proposed, total potable water demand for the Project will be supplied by the Camrosa Water District through development of new potable and non-potable water resources through a mitigation plan and as outlined above in the Conditions for Approval. While Camrosa operates its facilities to optimize the use of local groundwater supplies, this new project will not increase Camrosa's utilization of local groundwater or imported water.

Sincerely,

Stella Pimental
Customer Accounts Supervisor

Attachments: Penfield & Smith - Water System Infrastructure Study Mission Oaks Business Park Camarillo, California

cc: Triliad Development Inc.

7385 Santa Rosa Road • Camarillo, CA 93012-9284
Phone: (805) 482-4677 • FAX: (805) 987-4797
Website: www.camrosa.com

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March 17, 2011

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Background Info
For 21099.03

Penfield & Smith

1327 Del Norte Road, Ste 200
Camarillo, CA 93010

tel 805-981-0706
fax 805-981-0251

www.penfieldsmith.com

Santa Barbara
Camarillo
Santa Maria
Lancaster

Civil Engineering

Land Surveying

Land Use Planning

Construction Management & Inspection

Traffic & Transportation Engineering

Transportation Planning

Structural Engineering

Water Resources Engineering

GIS

W.O. 19599.02

March 10, 2011

Valerie Draeger
Triliad Development Inc.
270 Conejo Ridge
Suite 200
Thousand Oaks, CA 91361

Email: mail@Triliad.com

Subject: Water System Infrastructure Study
Mission Oaks Business Park Camarillo, California

Dear Ms. Draeger,

This report summarizes the water system infrastructure improvements necessary for the development of the 30.04 acre Mission Oaks Business Park in Camarillo, California, as it relates to mitigation measures required to offset proposed potable water use due to the existing Camrosa Water District (Camrosa) moratorium on new potable water service connections. This report presents a summary of the following:

- Established water system design criteria from Camrosa;
- Required non-potable off-set service acreage quantities;
- Conceptual non-potable water infrastructure and sized network piping necessary for the development of the project; and,
- An Engineer's Opinion of Probable Cost for the conceptual non-potable water infrastructure.

Water System Criteria

The proposed Mission Oaks Business Park project area is currently served exclusively by the Camrosa Zone 1 potable system. According to Mr. Terry Curson, P.E., of Camrosa, limitations exists in Zone 1 potable system. As such, a moratorium on new potable water service connections has been issued unless proposed development can mitigate their potable water use by providing an off-setting equivalent of non-potable water to existing Camrosa customers.

The quantity of water flow for the proposed Mission Oaks Business Park can be estimated using Table 2.5 of the Camrosa listed Water Design Criteria (Attachment 1), and the recently established 30% potable to 70% non-potable water use ratio for the Camrosa system. Maximum day demand (MDD) and peak hour demand (PHD) can be determined by multiplying the anticipated average day demand (ADD) for both potable and non-potable water by the established peaking factors of 2.15 and 4.50, respectively (Camrosa Table 2.6; Attachment 1). The following tables outline anticipated water flows for the Mission Oaks Business Park and like zoned properties in the project vicinity:

Table 1
Light Commercial Potable and Non-Potable Average Day Demand on a Per Acre Basis

Zoning	Total Flow Average Day Demand	Potable Flow Average Day Demand	Non-Potable Flow Average Day Demand
Light Commercial	2,000 gal/acre/day	600 gal/acre/day	1,400 gal/acre/day

Table 2
Light Commercial Potable and Non-Potable Peaking Flows on a Per Acre Basis

Water Use Type	Maximum Day Demand		Peak Hour Demand	
	(gal/acre/day)	(gpm/acre)	(gal/acre/day)	(gpm/acre)
Potable	1,290	0.90	2,700	1.9
Non-Potable	3,010	2.1	6,300	4.4

Hydraulic design criteria for non-potable water is established in the Camrosa Non-Potable Water Standards. In general the standards dictate that non-potable water mains shall be polyvinyl chloride (PVC) pipes, with a minimum size of 8-inch, designed to convey a mean velocity of not more than 5 feet per second (fps) at MDD.

Off-Set Requirements
As detailed in the attached Exhibit 1, the Mission Oaks Business Park encompasses approximately 30.04 acres in three non-contiguous areas over 9 separate properties. Proposed non-potable water infrastructure will serve 21.29 acres of the development. The following Table 3 details the acreage of each property, the estimated total water, potable and non-potable water use, the proposed non-potable service amount, and the off-set acreage required to mitigate proposed potable water use for each property and the project as a whole.

Table 3
Mission Oaks Business Park Average Day Demand Water Use and Off-Set Requirements

PROPERTY	Acreage	Estimated Total Water Use (gpd)	Estimated Potable Use (gpd)	Estimated Non-Potable Use (gpd)	Proposed Non-Potable Service (gpd)	Off-Set Required (Acres)
BLDG 4	4.24	8,480	2,544	5,936	5,936	1.82
BLDG 5	3.58	7,160	2,148	5,012	5,012	1.53
BLDG 6	3.62	7,240	2,172	5,068	5,068	1.55
BLDG 7	5.56	11,120	3,336	7,784	7,784	2.38
BLDG 8	1.86	3,720	1,116	2,604	2,604	0.80
BLDG 9	1.3	2,600	780	1,820	1,820	0.56
PARCEL B	1.13	2,260	678	1,582	1,582	0.48
LOT 30 & 31	3.12	6,240	1,872	4,368	0	4.46
LOT 32 & 33	5.63	11,260	3,378	7,882	0	8.04
TOTAL	**30.04**	**60,080**	**18,024**	**42,056**	**29,806**	**21.62**

It is understood that Camrosa currently desires that all new development be provided with operative non-potable water service. However, due to the remoteness of properties Lot 30 & 31 and Lot 32 & 33, it is economically unfeasible to provide operative non-potable water service to these properties. As such, the following engineered mitigation measure was developed to off-set both potable and non-potable water service to the remote properties Lot 30 & 31 and Lot 32 & 33, and all potable service to the remaining 7 properties.

Per the above design criteria and proposed development acreage, the estimated potable average day demand for the Mission Oaks Business Park is approximately 18,000 gallons per day (gpd), and the estimated non-potable average day demand is 42,000 gpd. Given that the Missions Oaks Business Park will be required to off-set their 18,000 gpd potable demand and their 12,250 gpd non-potable demand at Lot 30 & 31 and Lot 32 & 33, with non-potable service to existing Camrosa customers, the development will be required to provide non-potable service to a minimum of approximately 21.6 acres {(18,000 gpd + 12,250 gpd) / (1,400 gpd/acre)} of zoned light commercial properties which are currently Camrosa customers. The attached Exhibit 1 illustrates four feasible off-set parcels with a total acreage of approximately 21.45 acres.

Non-Potable Water Infrastructure

The proposed Mission Oaks Business Park non-potable water conceptual design is detailed in the attached Exhibit 1. The conceptual design entails a connection to the existing 12-inch stub-out located at the projected extension of Camino Carrillo and the existing 24-inch non-potable main running parallel to Conejo Creek. From the stub-out, a 12-inch pipeline would run westward to Camino Ruiz. At the intersection of Camino Ruiz and Camino Carrillo a capped 8-inch valved tee would branch southward toward Camino Ruiz, while a 12-inch valved pipeline would continue on Camino Carrillo to serve Parcel B and the 1.13 acre off-set parcel at the intersection of Camino Carrillo and Verdugo Way. In order to serve the properties on Balboa Circle, a proposed 8-inch pipeline would run from the existing 24-inch non-potable main to the Balboa Circle cul-de-sac in a proposed easement on the BLDG 9 property. This proposed 8-inch line would then extend northeastward on Balboa Circle to provide an off-set connection to the 1.15 acre parcel located north of the proposed BLDG 9 property.

The Zone 1 non-potable system has median hydraulic grade line (HGL) of 410-feet. With the stub-out and proposed non-potable infrastructure at an elevation of approximately 110-feet, the expected non-potable service pressure is likely to be approximately 130 pounds per square inch (psi), thus necessitating Class 200 pipe as stipulated in the Camrosa Non-Potable Water Standards.

An opinion of probable cost of construction for the non-potable infrastructure, including engineering and contingencies, is $311,838. A summary of the required non-potable infrastructure is presented in the attached Engineer's Opinion of Probable Cost. This Opinion of Cost does not include connection fees or meter charges, which may be assessed by Camrosa.

It is important to note that in addition to the non-potable water infrastructure discussed above, the Mission Oaks Business Park will be required to establish potable service connections to each proposed facility. Costs related to the potable service connection are not presented in this report.

Summary and Conclusion

The conceptual non-potable water design detailed herein provides a feasible mitigation measure to address the Camrosa moratorium on potable water service connections as it relates to the proposed Mission Oaks Business Park development. This conceptual design provides adequate non-potable water connections to existing Camrosa customers and portions of the proposed development to off-set the increase in anticipated potable water use by the proposed development. The details and opinions presented in this report are valid only while Camrosa has a moratorium on new potable water service connections in place.

If you have any questions or concerns regarding the water system infrastructure study summarized herein, please do not hesitate to contact me via email at sdm@penfieldsmith.com, or via phone at 805-981-0706 x-221.

Sincerely,

Penfield & Smith

Scott D. Meckstroth, P.E.
Project Engineer
RCE 63337

Table 1 - Light Commercial Potable and Non-Potable Average Day Demand on a Per Acre Basis
Table 2 - Light Commercial Potable and Non-Potable Peaking Flows On a Per Acre Basis
Table 3 - Mission Oaks Business Park Average Day Demand Water Use and Off-Set Requirements

Exhibit 1 – Non-Potable Water Conceptual Design

Attachment 1 – Camrosa Water Design Criteria (Table 2.5 and Table 2.6)
Attachment 2 – Engineer's Opinion of Probable Cost

Cc: Dennis Daniel, Daniel Engineering

SDM:sdm
W:\work\19000-19999\19599\19599.02-Mission Oaks Business Park Water Study\19599.02 Final Report.docx

1. 8" PVC CL200 NO SURFACE REPAIR
2. 12" PVC CL200 NO SURFACE REPAIR
3. 12" PVC CL200 REPAIR EXIST. AC PAVEMENT
4. 1.5" METER SERVICE (PROJECT)
5. 1.5" METER SERVICE (OFFSET)
6. CONNECT TO EXISTING 12" STUB-OUT
7. CONNECT TO EXISTING MAIN LINE WITH TAP
8. 12"x12"x8" VALVED TEE AND CAPPED 8" STUB-OUT
9. 8" PVC CL200 REPAIR EXIST. AC SURFACE

PROJECT PARCEL BOUNDARY AND ACREAGE

OFF-SET PARCEL BOUNDARY AND ACREAGE

PROPOSED NON-POTABLE WATER LINE

EXISTING NON-POTABLE WATER LINE

N

SCALE: 1"=500'

0 500 1000 1500

Penfield & Smith
Engineering · Surveying · Planning
· Construction Management ·
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 981-0706 Fax: (805) 981-0251

EXHIBIT 1
NON-POTABLE WATER CONCEPTUAL DESIGN
MISSION OAKS BUSINESS PARK
CAMARILLO, CALIFORNIA

19599.02 DWG: 19599.02 WS FINAL.dwg PLOT DATE: 2/09/11

SCALE: 1"=500'

number of units based upon the particular zoning for the area. In this regard the City or County Planning Department who has jurisdiction over the area should be consulted. In general, estimates based upon rough approximation using ground slope are not approved because they can be misleading. For other projects involving commercial, industrial, greenbelt areas or school, etc., the preferable method is to estimate the flow requirements for each building or area and then combine the results. AWWA Manual No.M22 and the Uniform Plumbing Code can be useful tools for this work. In the absence of such definition, the following may be used with prior approval:

TABLE 2.5

TYPE OF ZONING	COMPUTED AVERAGE USAGE (FLOW)
Heavy Commercial	3,000 gal/acre/day (28,000 liters/hectare/day)
Light Commercial	2,000 gal/acre/day (19,000 liters/hectare/day
Parks, Green belt	1, 500 gal/acre/day (14,000 liters/hectare/day)
Schools, Hospitals	Specific flow requirements should be calculated

After calculating the average daily flow, the following peaking factors shall be used to determine the system demands during conditions other than the average daily flow:

TABLE 2.6

Multiply Average Daily Flow By Factor Shown

Maximum Month Demand	1.60
Maximum Day Demand	2.15
Peak Hour Demand	4.50

If and when special studies of a particular area are conducted that demonstrate that different water use or peaking factors are appropriate, then those values may be used if approved by the District.

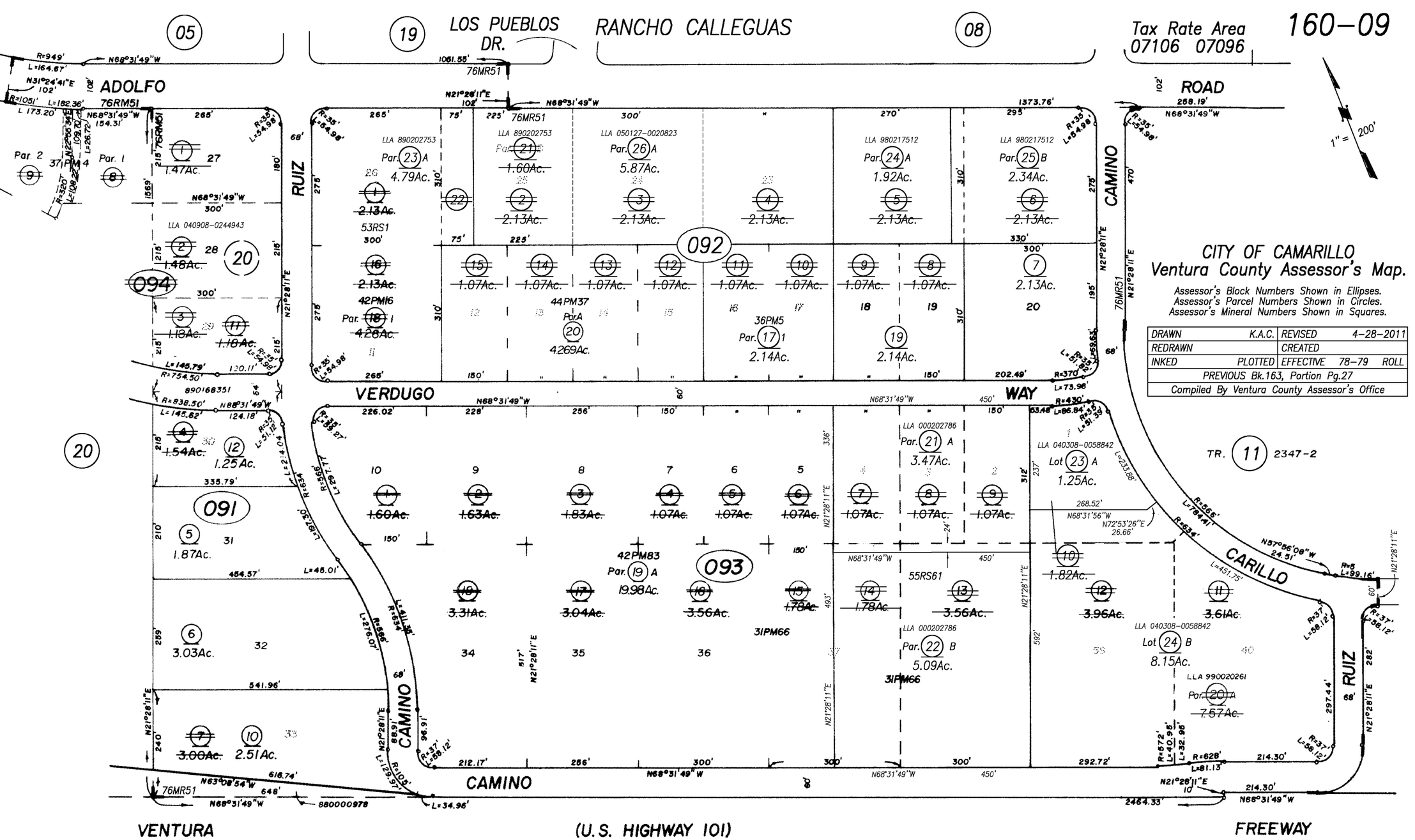
ENGINEER'S OPINION OF PROBABLE COST

Penfield & Smith, Inc.
1327 Del Norte Road, Suite 200
Camarillo, CA 93010
805-981-0706

Project: Mission Oaks Business Park
Location: Camarillo, California
Client: Triliad Development
W.O. No.: 19599.02
Calc'd By: SDM
Path Name: W:\work\...\19599.02
File Name: CONSTRUCTION EST1.xlsx

Date: 9-Feb-11

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	8" PVC CL200, No surface repair	LF	500	65.00	$32,500
2	12" PVC CL200, No surface repair	LF	950	90.00	$85,500
3	12" PVC CL200, Repair existing AC	LF	600	100.00	$60,000
4	1.5" Meter service (Project)	EA	7	1,800.00	$12,600
5	1.5" Meter service (Off-set)	EA	3	1,800.00	$5,400
6	Connect to existing 12" stub-out	EA	1	5,000.00	$5,000
7	8" Tap to existing 24" main	EA	1	5,000.00	$5,000
8	12" x 12" X 8" Tee	EA	1	1,200.00	$1,200
9	8" PVC CL200, Repair existing AC	LF	225	75.00	$16,875
10	8" Valve	EA	3	1,200.00	$3,600
11	12" Valve	EA	1	2,000.00	$2,000
12	1" Air Release	EA	1	2,200.00	$2,200
13	2" Air Release	EA	1	3,500.00	$3,500
14	2" Blow-Off	EA	1	1,500.00	$1,500
15	4" Blow-Off	EA	1	3,000.00	$3,000
	Subtotal				$ 239,875
	Engineering	%	10		$ 23,988
	Contingencies	%	20		$ 47,975
Total Estimated Construction Cost:					**$ 311,838**



Portion Tract 2347–1, M.R. Bk.76, Pg.51

NOTE: ASSESSOR PARCELS SHOWN ON THIS PAGE DO NOT NECESSARILY CONSTITUTE LEGAL LOTS. CHECK WITH COUNTY SURVEYOR'S OFFICE OR PLANNING DIVISION TO VERIFY.

BK. 160 , PG. 09 REVISION LOG

Roll–Year 11–12

DATE	REFERENCE DOC.	EXPLANATION Code	EXPLANATION Description	VOID A.P.N.(s)	RESIDUAL A.P.N.(s)	NEW A.P.N.(s)
4/28/11	20050127–0020823	LD–490 A	Combo	160–0–092–035, –034, & 160–0–092–215		160–0–092–265

PROPOSED PRIVATE UTILITY LEGEND:

- PRIVATE WATER LINE — W
- PRIVATE FIREWATER LINE — FW
- WATER METER (3" COMPOUND) — M
- DOUBLE DETECTOR CHECK — DDC
- FIRE HYDRANT

LEGEND:

- FENCELINE
- EASEMENT
- LOT LINE
- PROPERTY LINE
- RIGHT OF WAY
- ROAD CENTERLINE

EXISTING UTILITY LEGEND:

- POTABLE WATER — W
- ELECTRICAL — E
- GAS — G
- SANITARY SEWER — S
- STORM DRAIN — SD
- TIMEWARNER CONDUITS — T/W
- VERIZON CONDUITS — VZ
- FIRE HYDRANT
- WATER VALVE
- WATER METER
- SEWER OR STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- ELECTRICAL VAULT
- STREET LIGHT

PROPOSED PRIVATE WATER SITE PLAN

SCALE: 1" = 40'

FOR REDUCED PLANS
ORIGINAL SCALE IN INCHES

0 1 2 3

SCALE: 1"=40'

0 40 80 120

Penfield & Smith
Engineering • Surveying • Planning • Construction Management •
1327 Del Norte Road, Suite 200, Camarillo, CA 93010
Phone: (805) 981-0706 Fax: (805) 981-0251

W.O. No. 21099.03

MISSION OAKS DEVELOPMENT - SITE PLAN

CITY OF CAMARILLO, CALIFORNIA
MAY 15, 2014

36-EXB SAVE DATE: 5/15/2014 9:42:46 AM PLOT BY:Lynne Aguilar PLOT DATE:5/15/2014 10:52:10 AM PLOT SCALE:1:1
DRAWING:n:\acad\work\21099\21099.03\exhibits\onsite wtr_2109903.dwg