APPENDIX K

NOISE DATA

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.

- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.

- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.

- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.

- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

Characteristics of Sound

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves.

Sound can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable with human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud

± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hz are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e.,

higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Sound Propagation

Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by an additional 1.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance. Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 2 shows typical noise levels from familiar sources.

Table 2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	70	Vacuum Cleaner at 10 feet
Commercial Area		Normal speech at 3 feet
Heavy Traffic at 300 feet	60	
		Large Business Office
Quiet Urban Daytime	50	Dishwasher Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (background)
Quiet Suburban Nighttime		
	30	Library
Quiet Rural Nighttime		Bedroom at Night, Concert Hall (background)
	20	
		Broadcast/Recording Studio
	10	
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal and RMS is the

square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage and RMS is typically more suitable for evaluating human response.

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of "architectural" (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to "architectural" damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: California Department of Transportation (Caltrans). 2013, September. Transportation and Construction Vibration Guidance Manual.

LOCAL REGULATIONS AND STANDARDS

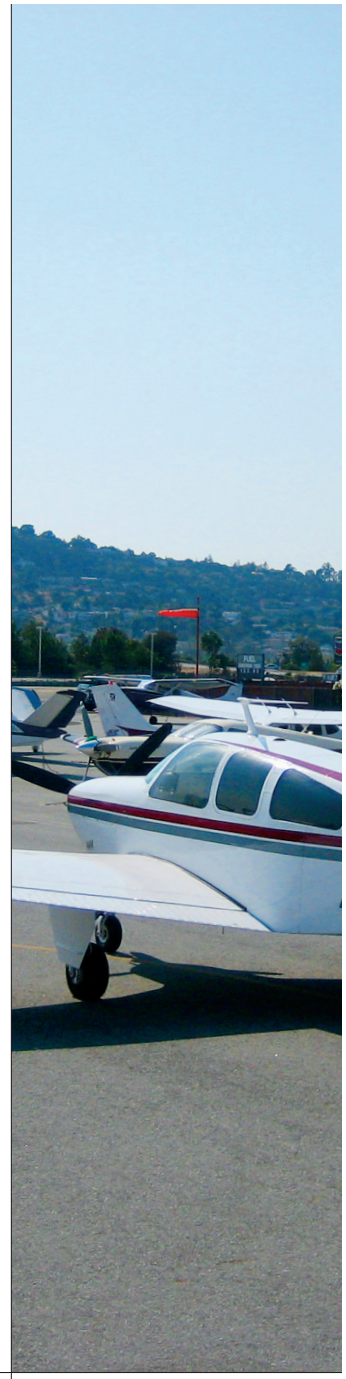
San Carlos 2030 General Plan

ADOPTED OCTOBER 12, 2009

SAN CARLOS
GENERAL PLAN

Noise Element

9



SAN CARLOS
GENERAL PLAN

9 Noise Element

SAN CARLOS GENERAL PLAN

The purpose of the Noise Element is to identify sources of noise in San Carlos and to define strategies for reducing the negative impact of noise to the community. Noise is an environmental pollutant that can threaten the quality of life and human health by causing annoyance or disrupting sleep and everyday activities. With the presence of significant noise sources in San Carlos, including Highway 101, El Camino Real, the Caltrain corridor and the San Carlos Airport, reducing the negative impact of unwanted and excessive noise is an important aspect of maintaining the city's high quality of life and community character.

Contents

Introduction

State law requires that the General Plan include a Noise Element, which is to be prepared according to guidelines adopted by the California Office of Noise Control (ONC). In accordance with State law requirements, this Noise Element provides a systematic approach to limiting community exposure to noise, including the following components:

- Quantitative analysis, based on noise measurements and modeling of major existing and future noise sources in the community, including both mobile and stationary sources;
- Mapping of generalized noise level contours to be used as a basis for land use decision-making; and

- Goals, policies and actions to address community exposure to existing and projected noise sources.

The Noise Element describes compatible land uses for varying noise levels, provides background information on existing sources of noise and projects noise conditions in 2030.

The Noise Element is divided into two basic sections:

- Background Information
- Goals, Policies and Actions

Background Information

The following provides a discussion of existing and future noise sources within San Carlos, as well as how these noise sources affect the various land use types in the city. Major noise sources that will be addressed include transportation sources such as traffic, public transit and airport and industrial operations.

The Noise Element should provide a systematic approach to the measurement and modeling of noise; the establishment of noise standards; the control of major noise sources; and community planning for the regulation of noise. This Noise Element provides baseline information on the existing noise environment based on noise measurements taken throughout the city and identifies noise-sensitive uses in San Carlos.

According to State Government Code and the State Office of Noise Control Guidelines, the following major noise sources should be considered in the preparation of a Noise Element:

- Highways and freeways.
- Primary arterials and major local streets.
- Railroad operations.
- Aircraft and airport operations.
- Local industrial facilities.
- Other stationary sources.

The Noise Element establishes uniformity between City policy and programs undertaken to control and abate environmental noise. The California Government Code and State Office of Noise Control Guidelines require that certain major noise sources and areas containing noise-sensitive land uses be identified and quantified by preparing generalized noise exposure

contours for current and projected levels of activity within the community. The noise exposure information developed for the Noise Element is incorporated into the General Plan to serve as a basis for achieving land use compatibility with respect to noise. Noise exposure information is also used to provide baseline levels and noise source identification for use in the development and enforcement of a local noise control ordinance and for ensuring compliance with the State's noise insulation standards, which are discussed in more detail below.

Noise Terminology

The discussion of noise requires the use of a number of technical terms. Some of the key noise-related terms used in this Element include:

- **Decibel (dB)**. A decibel is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities.
- **A-weighted sound level (dBA)**. The A-weighted sound level is the most common method to characterize sound in California. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. All sound levels in this chapter are A-weighted, unless reported otherwise.
- **Energy-equivalent sound/noise level (L_{eq}).** L_{eq} describes the average level that has the same acoustical energy as the summation of all the time-varying events. This descriptor is useful because sound levels can vary markedly over a short period of time. The most common averaging period for L_{eq} is hourly, but it can be of any duration.
- **Day/night average sound level (L_{dn}).** Since the sensitivity to noise increases during the evening and at night, 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. L_{dn} is a measure of the cumulative noise exposure in a community, with a 10 dB addition to nocturnal (10:00

p.m. to 7:00 a.m.) noise levels. This is the measurement that the City of San Carlos normally uses in noise evaluations and analysis.

- **Community Noise Equivalent Level (CNEL)**. CNEL is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring between 10:00 p.m. and 7:00 a.m. and 5 dB added to the A-weighted sound levels occurring between 7:00 p.m. and 10:00 p.m.

Noise Control Ordinance 1086

The City of San Carlos' noise ordinance is intended to protect residents and visitors to San Carlos from unreasonable noise associated with machines, persons, or devices. It specifies that unreasonable noise is that which exceeds 10 dBA above local ambient noise levels. Noise levels are measured at a distance of 49 feet from the property lines of either public or private property. Some noise sources are exempt from these regulations, including transportation, construction, home workshops or gardening tools and solid waste pick-up. Violations of the specified noise levels are monitored by the San Carlos Police Department and are considered misdemeanors.

Land Use Compatibility

Land uses deemed as noise sensitive by the State of California include schools, hospitals, rest homes, long-term care and mental care facilities. Many jurisdictions consider residential uses particularly noise sensitive because families and individuals expect to use time in the home for rest and relaxation and noise can interfere with these activities. Some variability in standards for noise sensitivity may apply to different densities of residential development; single-family uses are frequently considered the most sensitive. Jurisdictions may identify other uses as noise sensitive such as churches, libraries, day care centers and parks.

Land uses that are relatively insensitive to noise include some office, commercial and retail developments. There is a range of insensitive noise receptors which generate significant noise levels or where human occupancy is typically low. Examples of insensitive uses include industrial and manufacturing uses, utilities, agriculture, vacant land, parking lots and transit terminals.

To assist with evaluating the compatibility of land uses with various noise levels, the California General Plan

Guidelines compare the compatibility of noise levels with various land uses. Figure 9-1 summarizes the Guidelines' recommendations.

Research determined how much noise is acceptable for different land uses. In the mid-1970s, the Environmental Protection Agency concluded that a noise level of 55 dBA L_{dn} (including a 5 dBA margin of safety) would have "no impact" on a residence. The State of California built upon this information and established guidelines suggesting 60 dBA L_{dn} as an upper limit for acceptable environmental noise in a residential setting. Certain land uses are sensitive to noise outdoors and exterior noise thresholds are appropriate.

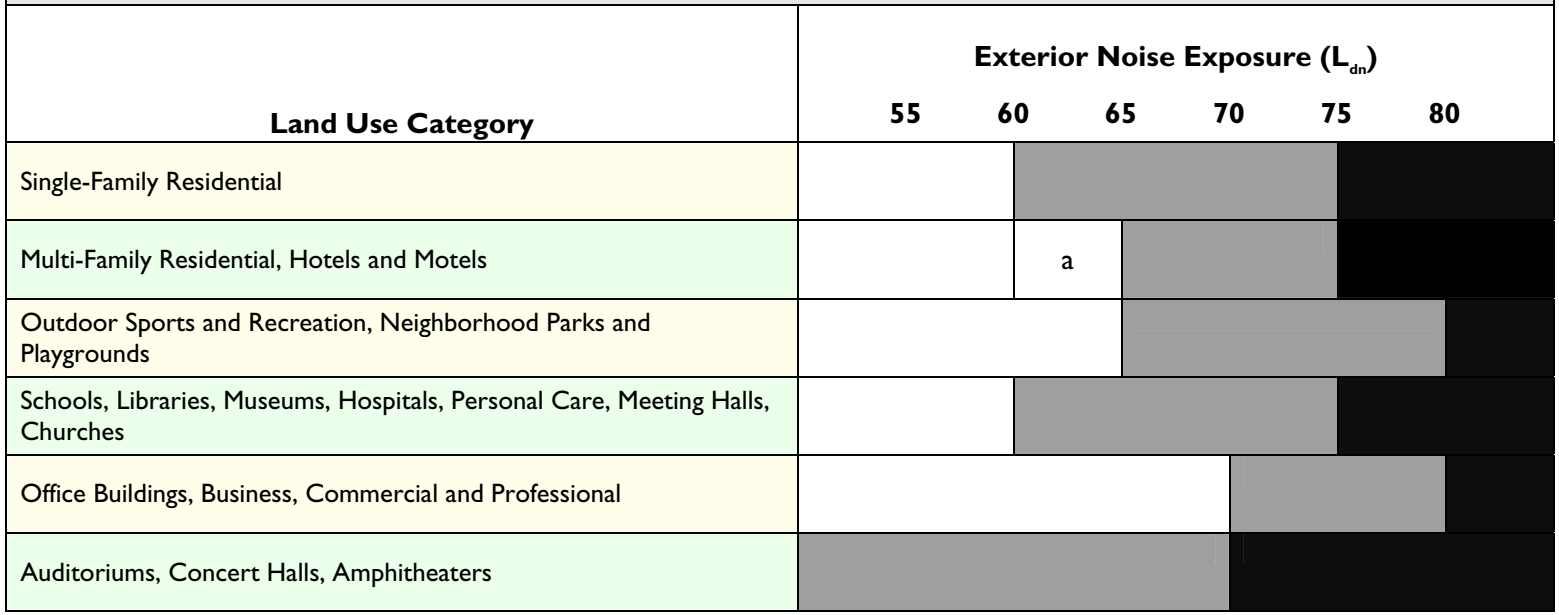
Other land uses are only sensitive to noise indoors (e.g. professional office spaces, high-density housing in a downtown area).

One of the requirements of a Noise Element is to facilitate the noise insulation standards contained in the State Building Code that are applicable to new multi-family housing development. Where the exterior noise exposure level is 60 dBA L_{dn} or greater, the residential building must attenuate the interior noise level to 45 dBA L_{dn} or less in residential living areas. The intent of the Noise and Land Use Compatibility Guidelines is to achieve an interior noise level of 45 dBA L_{dn} or less in all new residential housing. Three acceptability categories are identified: normally acceptable, conditionally acceptable and unacceptable. In the normally acceptable category, a use would be acceptable without additional mitigation measures. In the conditionally acceptable category, the use would be acceptable with the application of mitigation measures. In the unacceptable category, the use may be unacceptable even after the application of available mitigation measures.

Existing Noise

A noise study was completed as part of the General Plan update and included noise measurements along major roadways. The major noise sources in San Carlos are vehicular traffic on major roadways, railroad operations along the Caltrain corridor and the San Carlos Airport. Table 9-2 details the current traffic noise levels for major roadways in San Carlos.

FIGURE 9-1 LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT



[a] See Policy NOI-1.5.

NORMALLY ACCEPTABLE. Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special insulation requirements.

CONDITIONALLY ACCEPTABLE. Specified land use may be permitted only after detailed analysis of the noise reduction requirements and needed noise insulation features included in the design.

UNACCEPTABLE. New construction or development should generally not be undertaken because mitigation is usually not feasible to comply with noise element policies.

TABLE 9-1 NON-TRANSPORTATION NOISE STANDARDS

Land Use Receiving the Noise	Hourly Noise-Level Descriptor	Exterior Noise-Level Standard In Any Hour (dBA)		Interior Noise-Level Standard In Any Hour (dBA)	
		Daytime (7am-10pm)	Nighttime (10pm-7am)	Daytime (7am-10pm)	Nighttime (10pm-7am)
Residential	L_{eq}	55	45	40	30
	L_{max}	70	60	55	45
Medical, convalescent	L_{eq}	55	45	45	35
	L_{max}	70	60	55	45
Theater, auditorium	L_{eq}	--	--	35	35
	L_{max}	--	--	50	50
Church, meeting hall	L_{eq}	55	--	40	40
	L_{max}	--	--	55	55
School, library, museum	L_{eq}	55	--	40	--
	L_{max}	--	--	55	--

Notes:

1. The Residential standards apply to all residentially zoned properties.
2. Each of the noise levels specified above shall be lowered by 5 dBA for tonal noises characterized by a whine, screech, or hum, noises consisting primarily of speech or music, or recurring impulsive noises.
3. In situations where the existing noise level exceeds the noise levels indicated in the above table, any new noise source must include mitigation that reduces the noise level of the noise source to the existing level.
4. The exterior noise standards are measured at any point on the receiving property where there is, or could be in the future, frequent human use and quiet would be beneficial.
5. These standards do not apply to temporary sources such as construction activities.

TABLE 9-2 2009 VEHICULAR TRAFFIC NOISE ON MAJOR ROADWAYS

Major Roadway	Segment	L_{dn} at 75 ft, dBA* 2009 Existing
El Camino Real	North of Holly St	69
	San Carlos Ave to Brittan Ave	68
	Brittan Ave to Howard Ave	69
	South of Howard Ave	69
Holly Street	West of El Camino Real	62
	Old County Rd to Industrial Way	65
	East of Industrial Way	68
Old County Road	North of Holly St	63
	Holly St to Brittan Ave	64
	Brittan Ave to Howard Ave	64
	South of Holly St	62
Industrial Road	North of Holly St.	61
	Holly St to Brittan Ave	66
	South of Brittan Ave	66
San Carlos Avenue	North of Club Dr	63
	Club to Alameda de Las Pulgas	65
	Alameda de Las Pulgas to El Camino Real	62
	East of El Camino Real	59
Brittan Avenue	West of Alameda de Las Pulgas	61
	Alameda de Las Pulgas to El Camino Real	62
	Old County Rd to Industrial Way	64
	East of Industrial Way	64
Howard Avenue	West of El Camino Real	59
	East of Old County Rd	60
Dartmouth Avenue	East of San Carlos Ave	59
Club Drive	West of San Carlos Ave	57
Alameda de Las Pulgas	San Carlos Ave to Brittan Ave	62
	South of Brittan Ave	63

* Noise levels are given at a distance of 75 feet from the center of the roadway.

Vehicular

Traffic continues to be the most significant source of noise within San Carlos. Highway 101, as the dominant traffic noise source and El Camino Real (State Route 82), a major contributor to the noise environment, exhibit noise levels from 70 to 77 dBA L_{dn} at land uses immediately joining these roadways. Interstate 280 carries high volumes of traffic but does not affect existing developed areas within the city. Major arterials, including Holly Street, San Carlos Avenue, Alameda de Las Pulgas, Brittan Avenue, Old Country Road and Edgewood Road are significant noise sources and exhibit noise levels from 65 to 70 dBA L_{dn} at nearby land uses. Neighborhood streets such as Crestview Drive and Devonshire Boulevard exhibit noise levels from 60 to 65 dBA L_{dn} at nearby receivers. Residential neighborhoods insulated from through traffic have noise levels less than 60 dBA L_{dn} which is an acceptable level.

Railroad

The Caltrain railway roughly parallels Highway 101 and follows El Camino Real in the northeastern portion of the city. The San Carlos Caltrain station is near the intersection of El Camino Real and San Carlos Avenue. In 2009, there were 35 scheduled weekday northbound stops per day and 35 scheduled weekday southbound stops per day at the San Carlos Caltrain Station. Day-night average noise levels are estimated to range from 67 to 69 dBA L_{dn} at a distance of 100 feet from the tracks. Train warning whistles can generate maximum noise levels of approximately 105 dBA at 100 feet and would be audible throughout the community. Trains are required to blow their horns at railroad stations, so L_{dn} noise levels in the station area will be substantially higher unless the City of San Carlos and Caltrain obtain Quiet Zone designations.

Trains are also a source of perceptible groundborne vibration within approximately 50 to 100 feet of the tracks. Ground-borne vibration occurs in areas adjacent to fixed rail lines when railroad trains pass through San Carlos. Ground vibration levels along the railroad corridors are proportional to the speed and weight of the trains as well as the condition of the tracks, train engine and car wheels. Vibration measurements conducted in San Carlos indicate that the acceptable vibration levels occur about 65 feet from the center of the near railroad track for the maximum measured train vibration level and about 55 feet from

the center of the near railroad track for typical train passbys.

Airport

Aircraft using San Carlos Airport intermittently contribute to ambient noise levels in the city. This general aviation airport is located in the northeast portion of the City of San Carlos east of Highway 101. The airport averages about 425 aircraft operations per day. Approximately 49 percent of aircraft operations are local general aviation, 48 percent are transient general aviation, 2 percent are air taxi operations and less than 1 percent are military operations. San Mateo County and the San Carlos Airport Pilot's Association promote noise reduction practices by airport users, including avoiding flying over sensitive areas. Existing noise contours for the San Carlos Airport are shown on Figure 9-2. Noise compatibility is regulated by the City/County Association of Governments of San Mateo County (C/CAG) Airport Land Use Commission for the County's airports. The San Mateo County Comprehensive Airport/Land Use Plan (CLUP), adopted by C/CAG in 1996, is a State-mandated document that promotes airport/land use compatibility. Table IV-2 of the CLUP includes noise compatibility standards.

Aircraft noise in California is described in terms of the CNEL. The noise levels measured in CNEL are approximately equivalent to noise measured with the day/night average noise level (Ldn) but include an additional 5 dB weighting factor for the evening hours (7:00 p.m. to 10:00 p.m.).

Jet aircraft to and from the Mineta, San José and San Francisco International Airports generate intermittent noise when passing over the City of San Carlos. Noise generated by these over-flights, although audible and noticeable in quiet areas above other ambient noise sources, do not contribute to daily average noise levels in the city.

Non-Vehicular

There are no known stationary noise sources that make a significant contribution to the community's noise environment. The majority of commercial and industrial land uses within San Carlos are located east-northeast of El Camino Real and may be minor contributors to

FIGURE 9-2

San Carlos Airport Noise Contour Map

City Limit

Sphere of Influence Areas

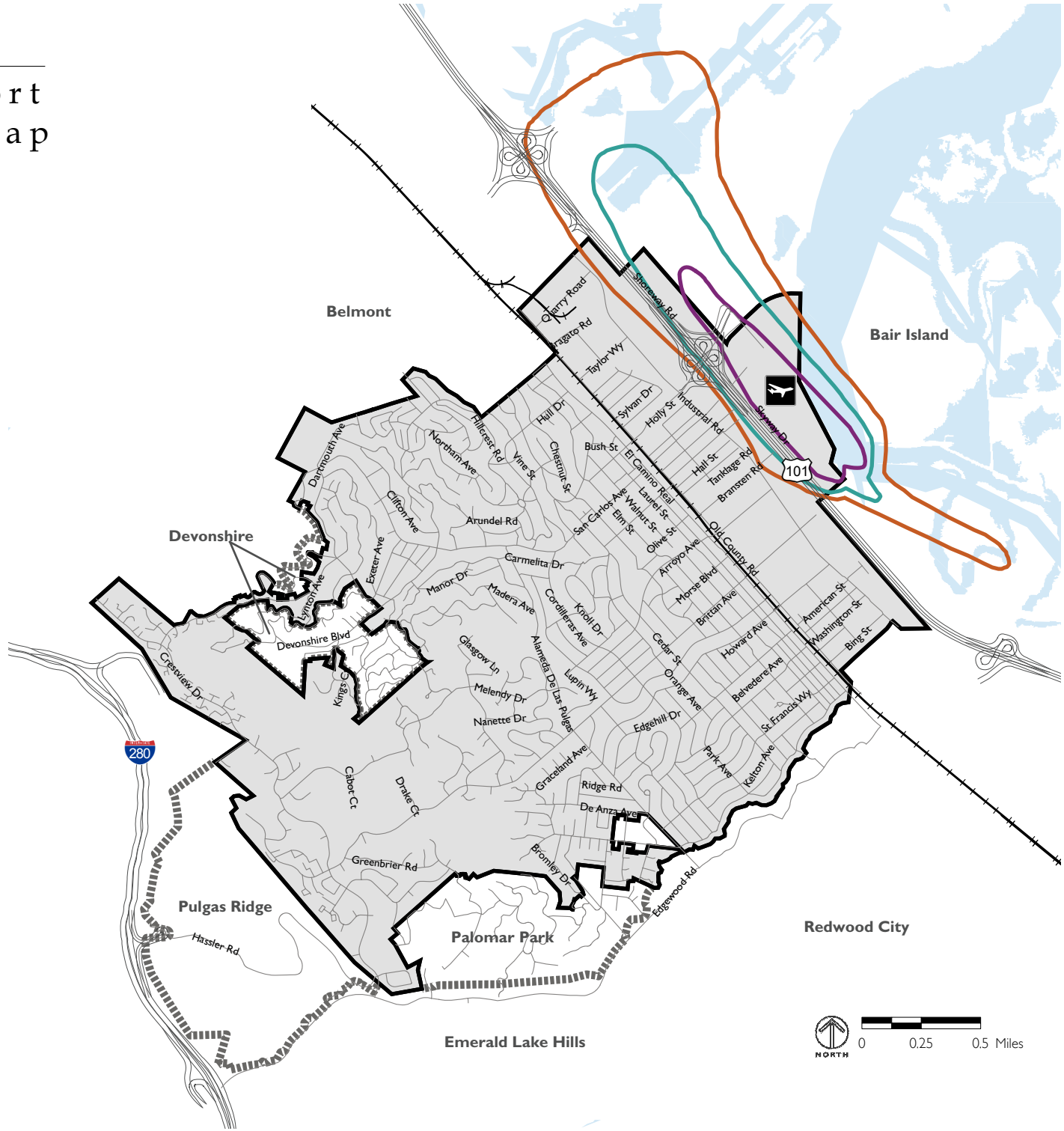
Airport Noise Contours

55 CNEL

60 CNEL

65 CNEL

Source: San Carlos Airport Master Plan Update Airport Modernization Draft EIR (June 2002).



the noise environment, while Highway 101, major arterial roadways and the railroad contribute significantly.

Future Noise

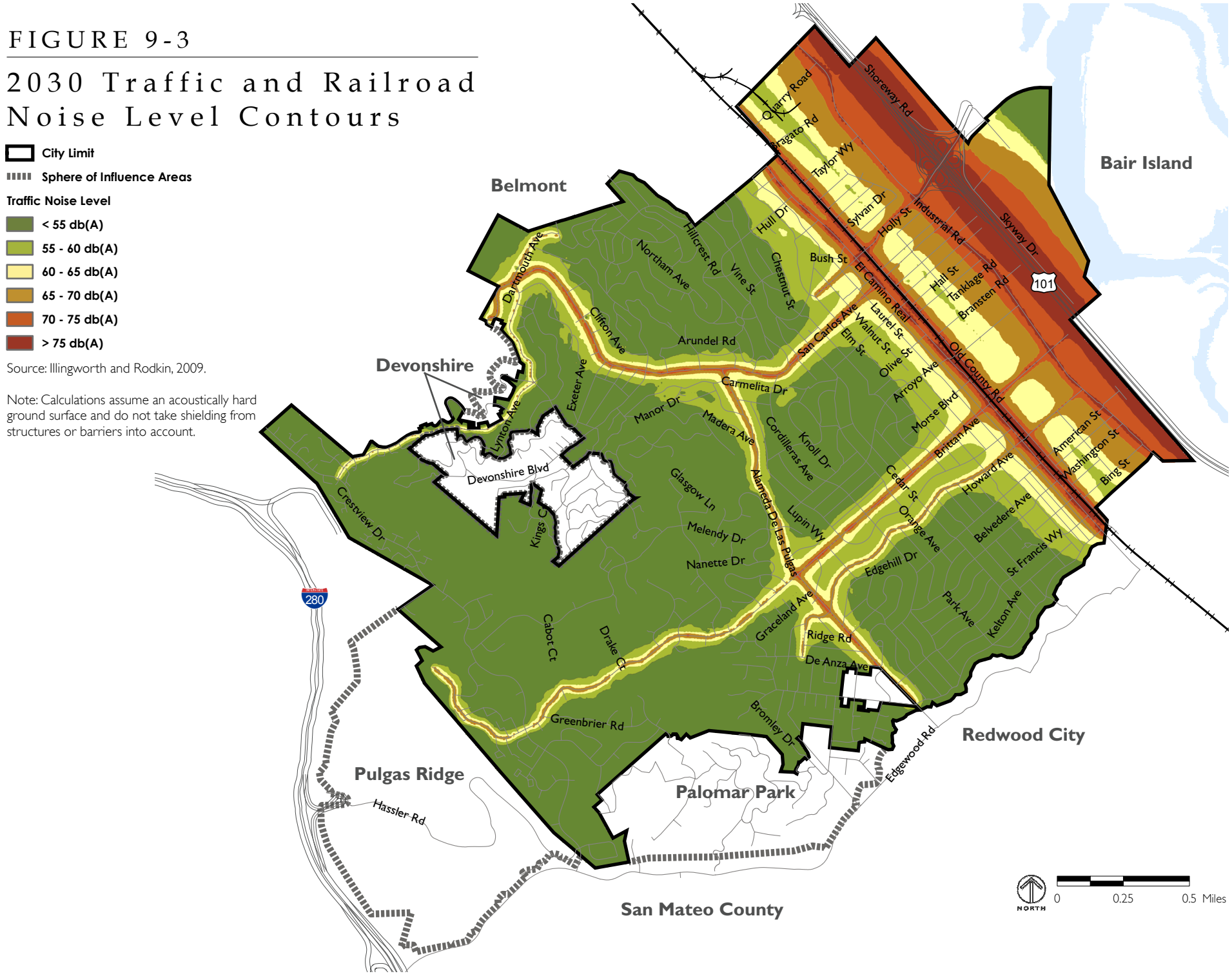
The noise environment in San Carlos is not expected to change as a result of the implementation of the General Plan. Vehicular traffic noise, the dominant source throughout the city, is not anticipated to change substantially along local streets or major through routes, including Highway 101 and El Camino Real. Aircraft noise in the region and sources of non-transportation noise are similarly not anticipated to increase in the community. Figure 9-3 shows the projected noise contours at buildout of the General Plan.

Currently, California is considering construction of a high-speed train system that would link the San Francisco Bay Area and Los Angeles. The plan would be for high-speed trains to operate through San Carlos on or near the existing Caltrain right-of-way. Numerous at-grade crossings along the Caltrain corridor would need to be eliminated in order to facilitate the high-speed trains, which would reduce noise from the sounding of railroad train horns. The high-speed trains would likely use electric power cars, which would eliminate the low frequency rumble associated with diesel-powered locomotives. However, overall high-speed train noise levels may increase over conventional trains due to the aerodynamic effects. Vibration of the ground caused by the passby of high-speed trains is expected to be similar to that caused by conventional steel wheels/steel rail trains. As information becomes available, it should be incorporated into the Noise Element and utilized accordingly in noise/vibration and land use planning.

View of Downtown from San Carlos train station

FIGURE 9-3

2030 Traffic and Railroad Noise Level Contours



Guiding Principles

The Guiding Principles are a set of key objectives that articulate San Carlos' core values relating to noise. The following Guiding Principle establishes a framework for the basic intent of this Element and is a broad statement of overall community value relating to noise in San Carlos:

- Maintain a community with a noise environment that supports a high quality of life.

Caltrain platform

Goals, Policies and Actions

GOAL NOI-1 **Encourage compatible noise environments for new development and control sources of excessive noise citywide.**

POLICIES

POLICY NOI-1.1 Use the Noise and Land Compatibility Standards shown in Figure 9-1, the noise level performance standards in Table 9-1 and the projected future noise contours for the General Plan shown in Figure 9-3 and detailed in Table 9-2, as a guide for future planning and development decisions.

POLICY NOI-1.2 Minimize noise impacts on noise-sensitive land uses. Noise-sensitive land uses include residential uses, retirement homes, hotel/motels, schools, libraries, community centers, places of

public assembly, daycare facilities, churches and hospitals.

POLICY NOI-1.3 Limit noise impacts on noise-sensitive uses to noise level standards as indicated in Table 9-1.

POLICY NOI-1.4 Require a detailed acoustic report in all cases where noise-sensitive land uses are proposed in areas exposed to exterior noise levels of 60 CNEL Ldn or greater. If recommended in the report, mitigation measures shall be required as conditions of project approval.

POLICY NOI-1.5 New development of noise-sensitive land uses proposed in noise-impacted areas shall incorporate effective mitigation measures into the project design to reduce exterior and interior noise levels to the following acceptable levels:

a. For new single-family residential development, maintain a standard of 60 Ldn (day/night average noise level) for exterior noise in private use areas.

b. For new multi-family residential development maintain a standard of 65 Ldn in community outdoor recreation areas. Noise standards are not applied to private decks and balconies and shall be considered on a case-by-case basis in the downtown core.

c. Interior noise levels shall not exceed 45 Ldn in all new residential units (single- and multi-family). Development sites exposed to noise levels exceeding 60 Ldn shall be analyzed following protocols in Appendix Chapter 12, Section 1208, A, Sound Transmission Control, 2001 Building Code Chapter 12, Appendix Section 1207.11.2 of the 2007 California Building Code (or the latest revision).

d. Where new residential units (single- and multi-family) would be exposed to intermittent noise levels generated during train operations, maximum railroad noise levels in-

side homes shall not exceed 50 dBA in bedrooms or 55 dBA in other occupied spaces. These single event limits are only applicable where there are normally four or more train operations per day.

POLICY NOI-1.6 Where noise mitigation measures are required to achieve the noise level standards, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered after practical design-related noise mitigation measures have been integrated into the project.

POLICY NOI-1.7 The City shall seek to reduce impacts from ground-borne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g. residences) are sited at least 100 feet from the centerline of the railroad tracks whenever feasible. The development of vibration-sensitive buildings within 100 feet from the centerline of the rail-road tracks would require a study demonstrating that ground borne vibration issues associated with rail operations have been adequately addressed (i.e. through building siting, foundation design and construction techniques).

POLICY NOI-1.8 During all phases of construction activity, reasonable noise reduction measures shall be utilized to minimize the exposure of neighboring properties to excessive noise levels.

a. Construction activities shall comply with the City's noise ordinance.

POLICY NOI-1.9 Minimize potential transportation-related noise through the use of setbacks, street circulation design, coordination of routing and other traffic control measures and the construction of noise barriers and consider use of "quiet" pavement surfaces when resurfacing roadways.

POLICY NOI-1.10 Ensure that mixed-use development projects are designed to minimize noise impacts on residential units.

POLICY NOI-1.11 Ensure that proposed noise sensitive land uses include appropriate mitigation to reduce noise impacts from aircraft operations at San Carlos Airport. Work with the San Carlos Airport Pilots Association and San Mateo County to continue to refine and implement the Airport's noise abatement procedures.

POLICY NOI-1.12 Ensure consistency with the noise compatibility policies and criteria contained in the San Carlos Airport Land Use Plan.

POLICY NOI-1.13 Require a noise analysis for new residential uses located within the 55 CNEL impact area of the San Carlos Airport. If recommended in the report, mitigation measures shall be required as conditions of project approval.

POLICY NOI-1.14 The Federal Transit Administration vibration impact criteria and assessment methods shall be used to evaluate the compatibility of train vibration with proposed land uses adjoining the UPRR (Caltrain) corridor. Site specific vibration studies shall be completed for vibration-sensitive uses proposed within 100 feet of active railroad tracks.

ACTIONS

ACTION NOI-1.1 Establish a noise abatement protocol for existing sensitive land uses located in areas anticipated to experience significant noise increases with the implementation of the General Plan. Cumulative traffic noise impacts on existing noise-sensitive uses could be reduced through the inclusion of exterior and/or interior sound-reduction measures such as set-backs, noise barriers, forced-air mechanical ventilation and sound rated window construction. The

City should research sources of funding for these actions.

ACTION NOI-1.2 Revise the City's Noise Ordinance to be consistent with this Element.

ACTION NOI-1.3 Require residents of new mixed-use developments to be informed of potential noise from refuse collection and other activities typically associated with commercial activity.

ACTION NOI-1.4 Require the evaluation of mitigation measures for projects that would cause the following criteria to be exceeded or would cause a significant adverse community response:

a. Cause the Ldn at noise-sensitive uses to increase by 3 dB or more and exceed the "normally acceptable" level.

b. Cause the Ldn at noise-sensitive uses to increase 5 dB or more and remain "normally acceptable."

c. Cause noise levels to exceed the limits in Table 9-1.

ACTION NOI-1.5 Enforce Section 27007 of the California Motor Vehicle Code that prohibits amplified sound that can be heard 50 or more feet from a vehicle.

ACTION NOI-1.6 Enforce Section 27150 of the California Motor Vehicle Code that addresses excessive exhaust noise.

ACTION NOI-1.7 Update and review procedures for dealing with noise complaints in the community.

ACTION NOI-1.8 Evaluate the necessity of requesting Caltrain to establish a Quiet Zone designation for San Carlos.

Chapter 9.30
NOISE CONTROL

Sections:

9.30.010 Declaration of policy.

In accordance with the General Plan of the City which calls for the "maintenance and enhancement of quality residential areas," it is declared that the policy of the City is to protect the peace, health and safety of its citizens from unnecessary and unreasonable noises produced by any machine, person or device. It shall also be the City's policy to continuously evaluate the noise levels specified in the body of this chapter and adjust them as quieter equipment becomes available or as demanded by State and Federal requirements. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.020 Definitions.

As used in this chapter:

A. "Ambient" means the lowest sound level repeating itself during a six-minute period, using the A scale, and with the sound meter set on "slow." For the purpose of this chapter, in no case shall the ambient be considered less than thirty-five dBA. In cases in which the ambient level cannot be determined by field observation, the diagram showing existing noise levels contained in the General Plan Noise Element shall establish the appropriate ambient level.

B. "Emergency" means an unforeseen combination of circumstances which require immediate action.

C. "Noise level" means the maximum continuous sound level or repetitive peak level measured using the A scale set on "slow."

D. “Precision sound level meter” means a device for measuring sound level in decibel units according to the American National Standards Institute.

E. “Sound level” shall be expressed in decibels (dBA) as defined by the American National Standards Institute using the A-level scale.

F. “Vehicle” means any device by which any person or property may be propelled, moved or drawn upon a highway or street or private property. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.30 sic noise regulation.

Except as otherwise permitted under this chapter, no person shall cause and no property owner shall permit, as to property owned by him, a noise produced by any person, amplified sound or device, or any combination thereof in excess of the noise limits established in Table 18.21.050-A to emanate from any property, public or private, as measured at the receiving property line. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.040 Permit to exceed noise levels.

A. The City Planner may grant an emergency permit to waive time and noise level limitations on equipment when it is required to protect lives or property.

B. Special events or circumstances may warrant temporary exception to noise levels established in this chapter. In such cases application for a permit may be made to the City Planner, stating in writing: (1) the name, address and telephone number of the property owner responsible for the activity; and (2) the purpose for which such permit is applied for, the date and beginning and ending time thereof, and a description of the sound-producing or sound-amplifying device to be used, together with a full statement of facts justifying noncompliance. Such permits shall be issued or denied based upon a balancing of the interests of the applicant against those of surrounding residents, and shall include consideration of duration of the permit, frequency of occurrence, number of persons benefited by the activity, and other similar factors.

C. Any applicant desiring to appeal from a denial of a permit by the City Planner shall notify the City Clerk of such appeal within ten days of the denial. The appeal shall be to the City Council. The City Council shall either affirm, overrule or modify the decision of the City Planner, based upon the factors set forth in this chapter.

D. All permits issued under this chapter shall be issued for a limited time period, except that permits for recurring athletic and social events sponsored by schools, churches or similar organizations may be issued for periods of twelve months.

E. The City may set a fee for this permit by resolution. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.050 Enforcement.

Enforcement of this chapter shall fall under the jurisdiction of the San Carlos Police Department. The Department shall investigate alleged violations of the chapter on a complaint basis. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.60 olation—Penalty.

Violation of the provisions of this chapter shall be a misdemeanor. At the discretion of the Police Chief, the violation may be treated as an infraction punishable by a fine of up to two hundred fifty dollars for each violation. A violation of this chapter shall also be deemed to be a public nuisance. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

9.30.070 Exempt activities.

The following noise-generating activities are exempt from the provisions of this chapter:

A. Transportation facilities, such as freeways, airports, buses and railroads;

B. Construction activities; such activities, however, shall be limited to the hours of eight a.m. to six p.m. Monday through Friday, and nine a.m. to five p.m. on Saturdays and Sundays. No construction noise-related activities on the following holidays: New Year's Day, Martin Luther King Jr. Day, President's Day, Memorial Day, 4th of July, Labor Day, Veteran's Day, Thanksgiving Day and Christmas Day. All gasoline-powered construction equipment shall be equipped with an operating muffler or baffling system as originally provided by the manufacturer, and no modification to these systems is permitted (the Building Official shall have the authority to grant exceptions to construction noise-related activities);

C. Home workshop and gas-powered gardening equipment; such activities, however, shall be limited to the hours of eight a.m. to sunset Monday through Friday, and ten a.m. to sunset on Saturday, Sunday and holidays stated in subsection B of this section;

D. Public works and public utilities activities; such activities, however, shall be limited to the hours set forth under subsection B of this section, except for emergency situations (the Public Works Director shall have the authority to grant exceptions to public works and public utilities construction noise-related activities);

E. Emergency vehicles;

F. Solid waste pickup; such activities, however, shall be limited to the hours of collection set forth under the applicable franchise agreement for solid waste pickup, recyclable materials pickup and/or organic materials pickup as may be restricted for residential, commercial and City facilities. (Ord. 1439 § 4 (Exh. B (part)), 2011: Ord. 1086 § 1 (part), 1991)

18.21.050 Noise.

A. Noise Limits. No use or activity shall create noise levels that exceed the following standards. The maximum allowable noise levels specified in Table 18.21.050-A, Noise Limits, do not apply to noise generated by automobile traffic or other mobile noise sources in the public right-of-way.

TABLE 18.21.050-A: NOISE LIMITS

Land Use Receiving the Noise	Noise-Level Descriptor	Exterior Noise Level Standard in Any Hour (dBA)		Interior Noise-Level Standard in Any Hour (dBA)	
		Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Residential	L_{50}	55	45	40	30
	L_{max}	70	60	55	45
Medical, convalescent	L_{50}	55	45	45	35
	L_{max}	70	60	55	45
Theater, auditorium	L_{50}	-	-	35	35
	L_{max}	-	-	50	50
Church, meeting hall	L_{50}	55	-	40	40
	L_{max}	-	-	55	55
School, library, museum	L_{50}	55	-	40	-
	L_{max}	-	-	55	-

1. Adjustments to Noise Limits. The maximum allowable noise levels of Table 18.21.050-A, Noise Limits, shall be adjusted according to the following provisions. No more than one increase in the maximum permissible noise level shall be applied to the noise generated on each property.

a. Ambient Noise. If the ambient noise level at a noise-sensitive use is ten dBA or more below the standard, the allowable noise standard shall be decreased by five decibels.

b. Duration. The maximum allowable noise level (L_{50}) shall be increased as follows to account for the effects of duration:

i. Noise that is produced for no more than a cumulative period of fifteen minutes in any hour may exceed the noise limit by five decibels; and

ii. Noise that is produced for no more than a cumulative period of five minutes in any hour may exceed the noise limits by ten decibels;

iii. Noise that is produced for no more than a cumulative period of one minute in any hour may exceed the noise limits by fifteen decibels.

c. Character of Sound. If a noise contains a steady audible tone or is a repetitive noise (such as hammering or riveting) or contains music or speech conveying informational content, the maximum allowable noise levels shall be reduced by five decibels.

d. Prohibited Noise. Noise for a cumulative period of thirty minutes or more in any hour which exceeds the noise standard for the receiving land use.

B. Noise Exposure—Land Use Requirements and Limitations. Table 18.21.050-B, Noise Exposure—Land Requirements and Limitations, describes the requirements and limitations of various land uses within the listed day/night average sound level (Ldn) ranges.

TABLE 18.21.050-B: NOISE EXPOSURE—LAND USE REQUIREMENTS AND LIMITATIONS

Land Use	Day/Night Average Sound Level (Ldn)	Requirements and Limitations
Residential (1) and Other Noise-Sensitive Uses (e.g., Schools, Hospitals, and Churches)	Less than 60	Satisfactory
	60 to 75	Acoustic study and noise attenuation measures required
	Over 75	Acoustic study and noise attenuation measures required
Auditoriums, Concert Halls, Amphitheaters	Less than 70	Acoustic study and noise attenuation measures required
	Over 70	Not allowed
Commercial and Industrial	Less than 70	Satisfactory
	70 to 80	Acoustic study and noise attenuation measures required
	Over 80	Airport-related development only; noise attenuation measures required
Outdoor Sports and	Less than 65	Satisfactory

Recreation, Parks	65 to 80	Acoustic study and noise attenuation measures required; avoid uses involving concentrations of people or animals
	Over 80	Limited to open space; avoid uses involving concentrations of people or animals

Notes:

1. New residential development in noise impacted areas are subject to the following noise levels:

a. For new single-unit residential development, maintain a standard of 60 Ldn for exterior noise in private use areas.

b. For new multi-unit residential development, maintain a standard of 65 Ldn in community outdoor recreation areas. Noise standards are not applied to private decks and balconies and shall be considered on a case-by-case basis in the MU-DC District.

c. Where new residential units (single and multifamily) would be exposed to intermittent noise levels generated during train operations, maximum railroad noise levels inside homes shall not exceed forty-five dBA in bedrooms or fifty-five dBA in other occupied spaces. These single-event limits are only applicable where there are normally four or more train operations per day.

C. Acoustic Study. The Director may require an acoustic study for any proposed project that could cause any of the following:

1. Locate new residential uses within the fifty-five CNEL impact area of the San Carlos Airport;

2. Cause noise levels to exceed the limits in Table 18.21.050-A;

3. Create a noise exposure that would require an acoustic study and noise attenuation measures listed in Table 18.21.050-B, Noise Exposure—Land Use Requirements and Limitations; or

4. Cause the Ldn at noise-sensitive uses to increase three dBA or more.

D. Establishing Ambient Noise. When the Director has determined that there could be cause to make adjustments to the standards, an acoustical study shall be performed to establish ambient noise levels. In order to determine if adjustments to the standards should be made either upwards or downwards, a minimum twenty-four-hour-duration noise measurement shall be conducted. The noise measurements shall collect data utilizing noise metrics that are consistent with the noise

limits presented in Table 18.21.050-A, e.g., L_{max} (zero minutes), L_{02} (one minute), L_{08} (five minutes), L_{25} (fifteen minutes) and L_{50} (thirty minutes). An arithmetic average of these ambient noise levels during the three quietest hours shall be made to demonstrate that the ambient noise levels are regularly ten or more decibels below the respective noise standards. Similarly, an arithmetic average of ambient noise levels during the three loudest hours should be made to demonstrate that ambient noise levels regularly exceed the noise standards.

E. Noise Attenuation Measures. Any project subject to the acoustic study requirements of subsection C of this section may be required as a condition of approval to incorporate noise attenuation measures deemed necessary to ensure that noise standards are not exceeded.

1. New noise-sensitive uses (e.g., schools, hospitals, churches, and residences) shall incorporate noise attenuation measures to achieve and maintain an interior noise level of forty-five dBA.

2. Noise attenuation measures identified in an acoustic study shall be incorporated into the project to reduce noise impacts to satisfactory levels.

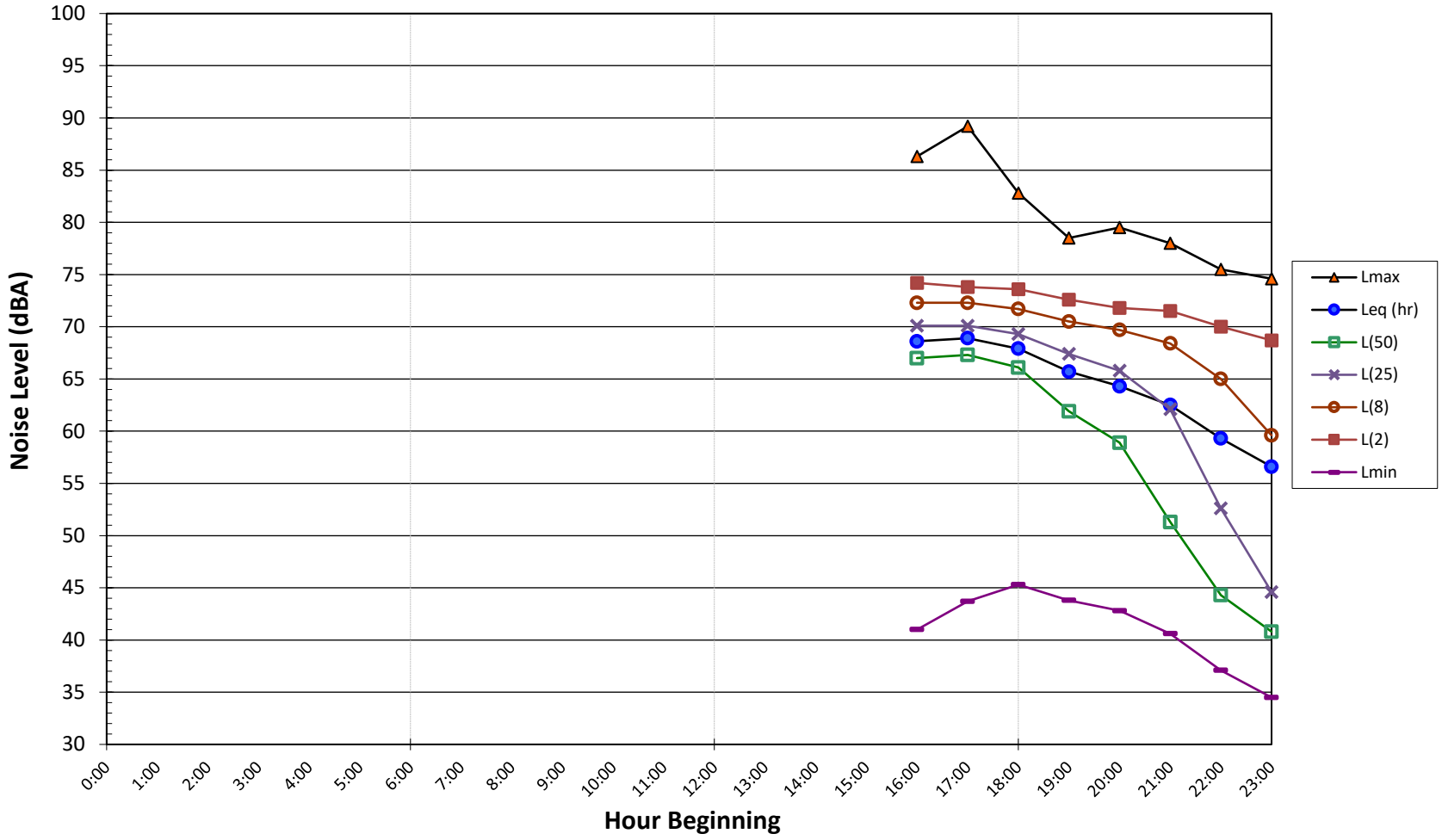
3. Emphasis shall be placed upon site planning and project design measures. The use of noise barriers shall be considered and may be required only after all feasible design-related noise measures have been incorporated into the project. (Ord. 1438 § 4 (Exh. A (part)), 2011)

18.21.060 Vibration.

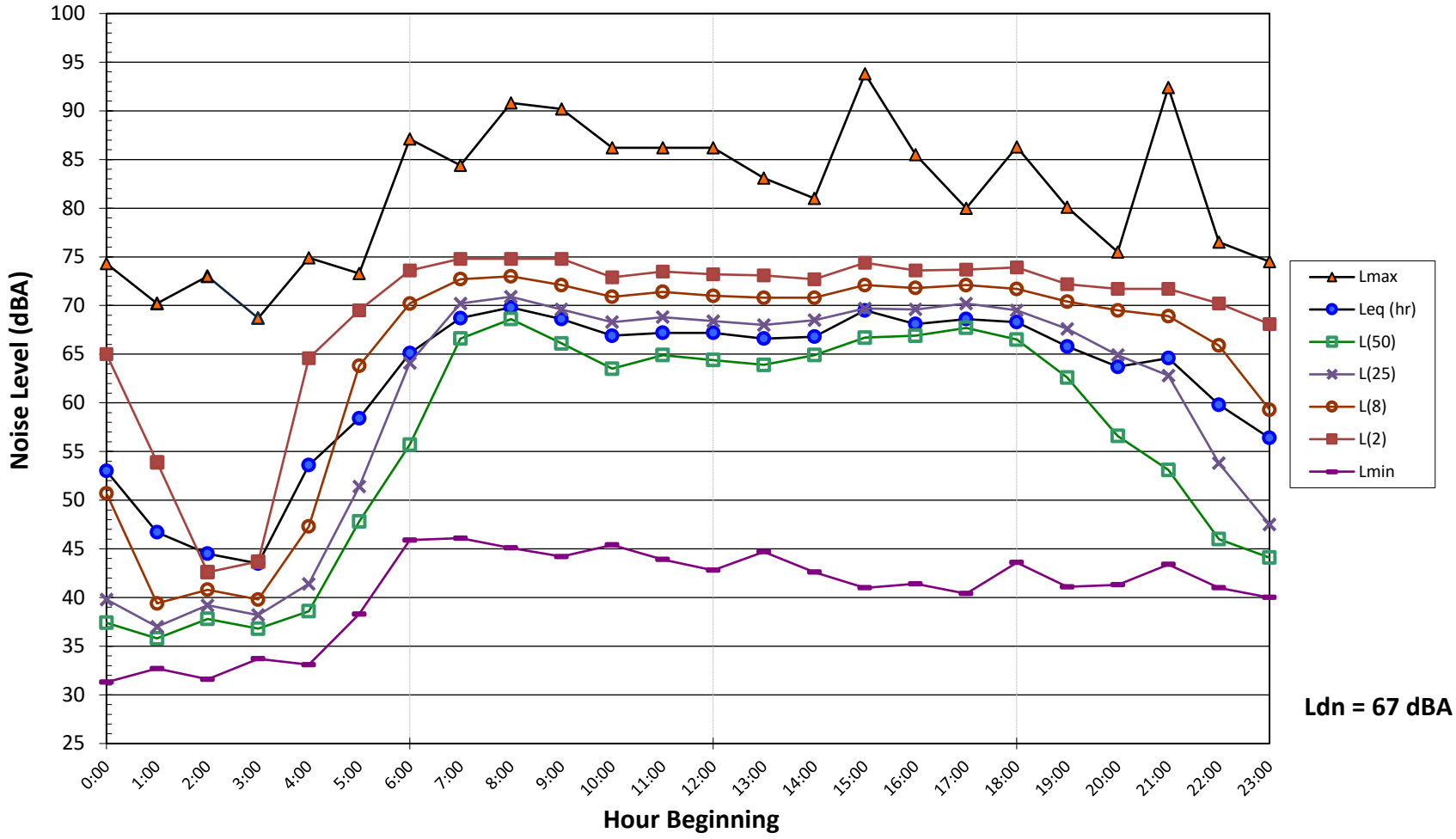
No vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at the lot lines of the site. Vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard. (Ord. 1438 § 4 (Exh. A (part)), 2011)

AMBIENT NOISE MONITORING RESULTS

Noise Levels at LT-1
Alameda De Las Pulgas - San Carlos, CA
Monday, March 2, 2020

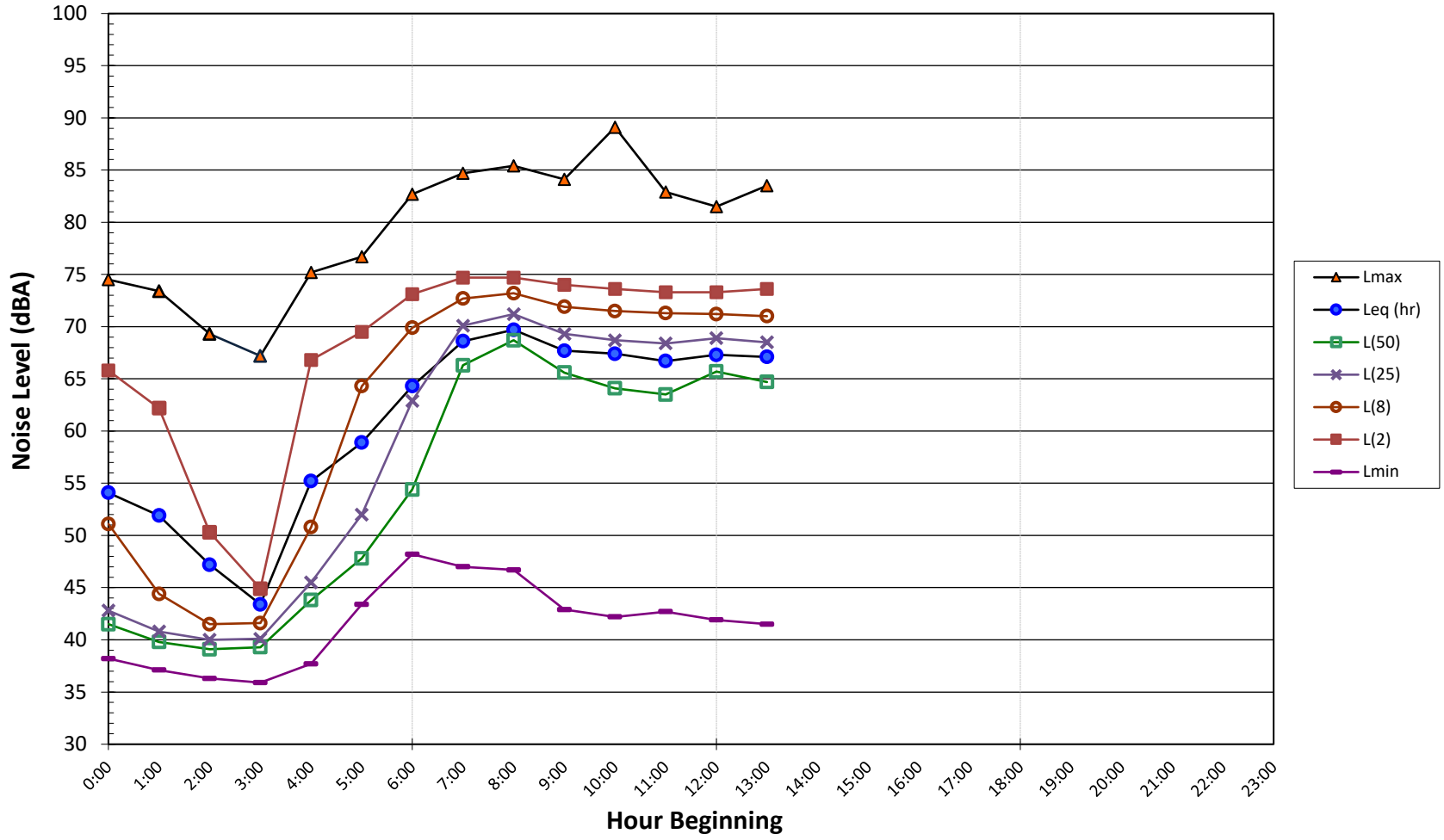


Noise Levels at LT-1
Alameda De Las Pulgas - San Carlos, CA
Tuesday, March 3, 2020

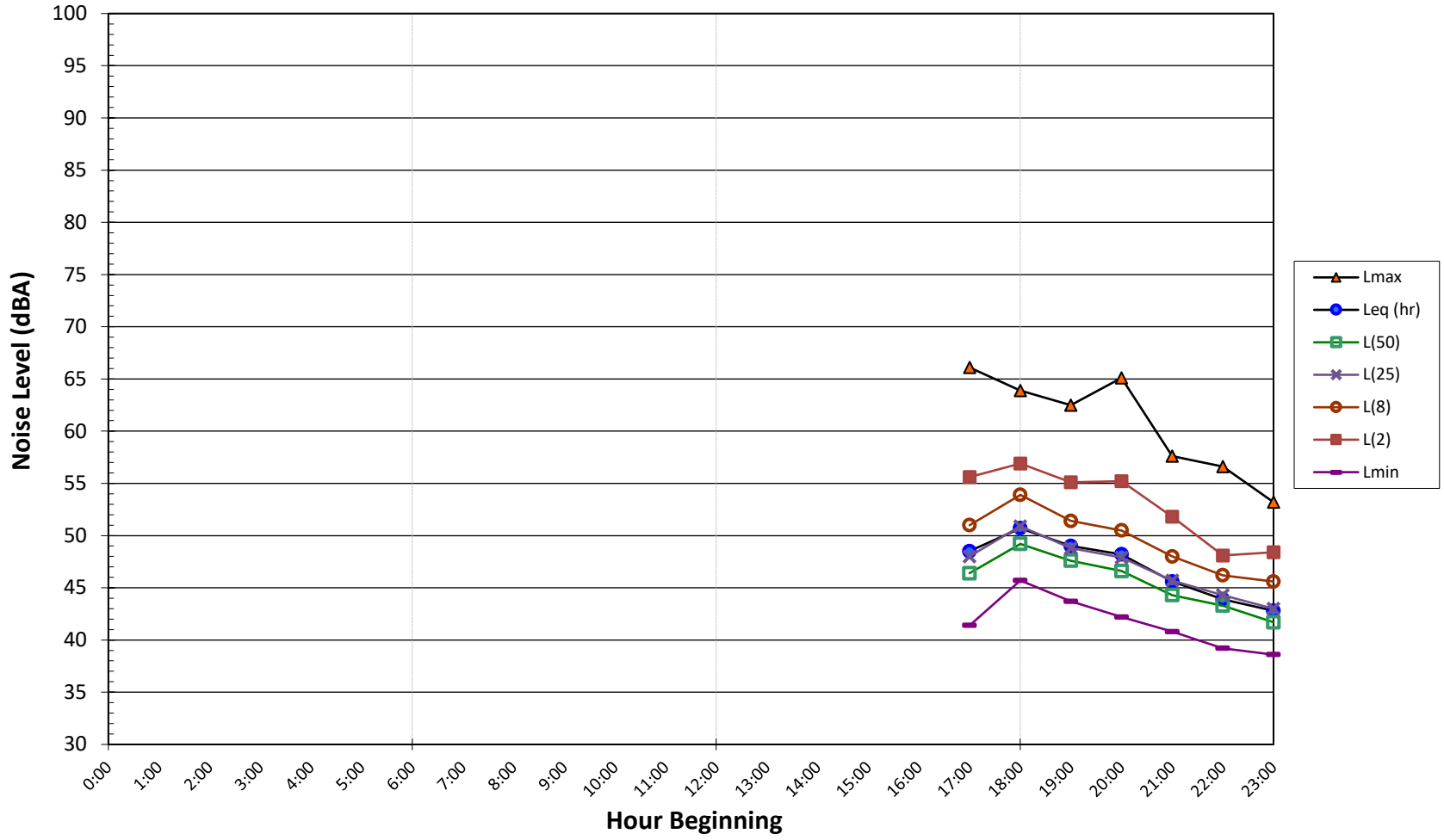


Ldn = 67 dBA

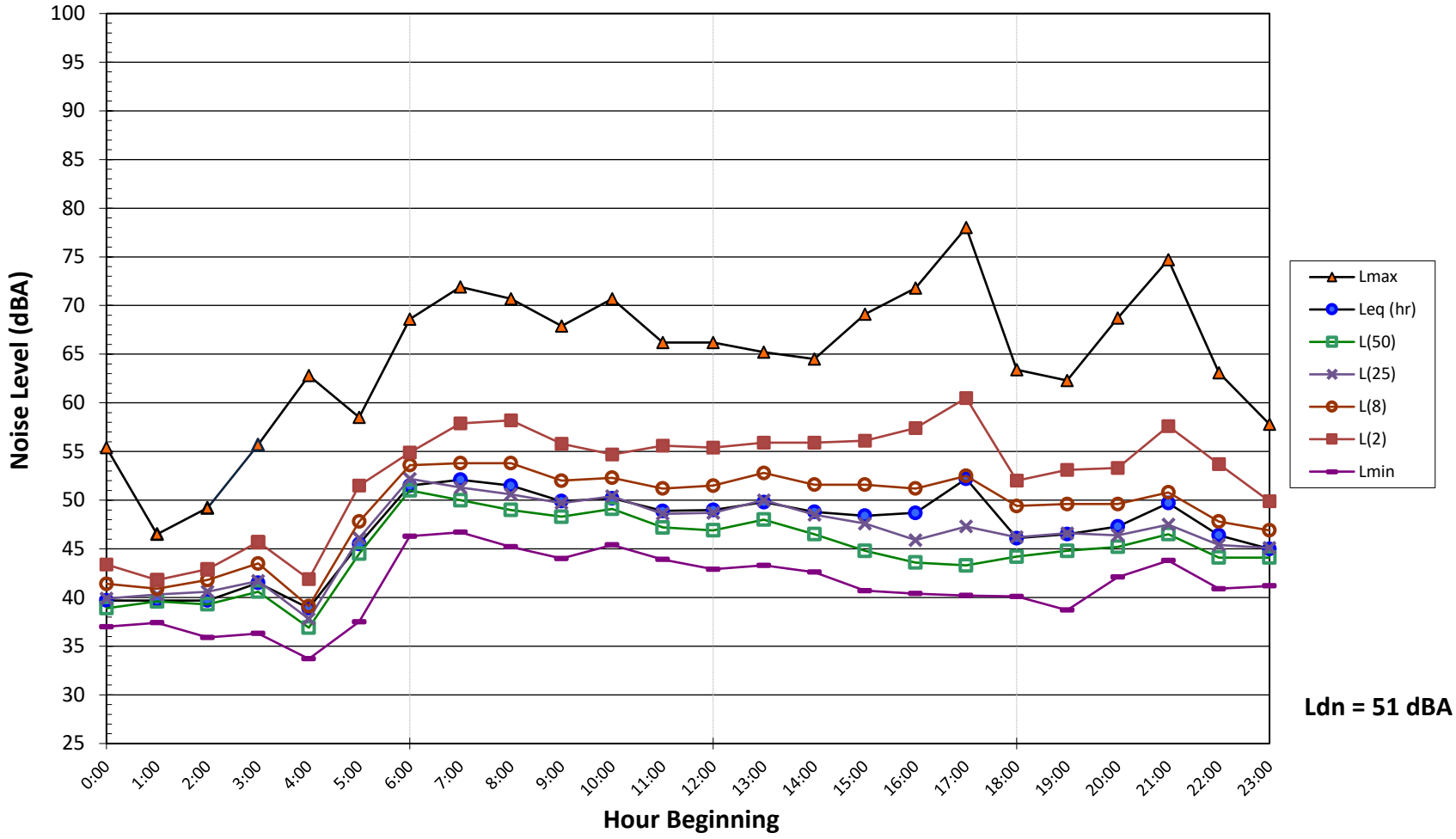
Noise Levels at LT-1
Alameda De Las Pulgas - San Carlos, CA
Wednesday, March 4, 2020



Noise Levels at LT-2
Coronado & Vista del Grande - San Carlos, CA
Monday, March 2, 2020

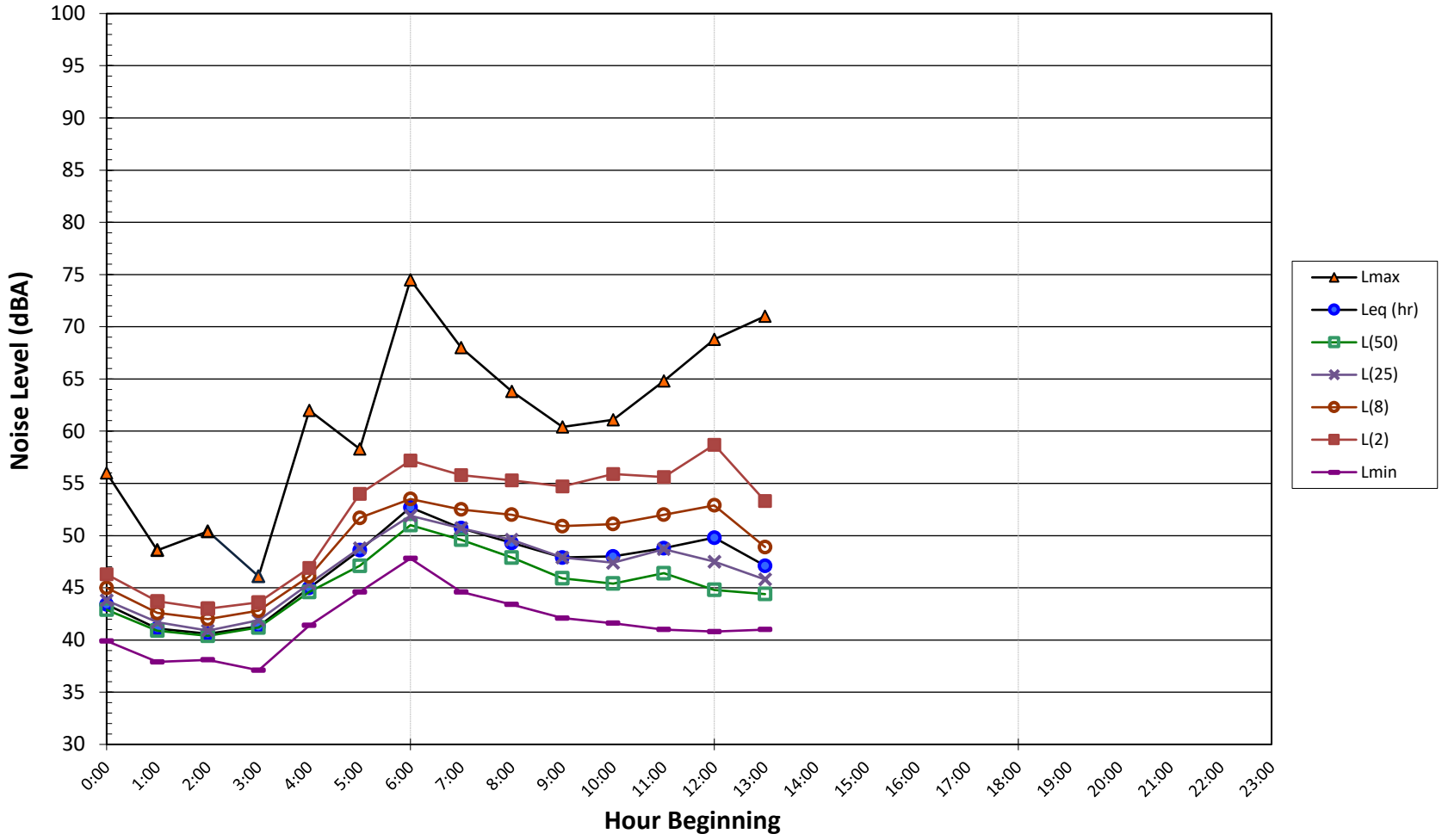


Noise Levels at LT-2
Coronado & Vista del Grande - San Carlos, CA
Tuesday, March 3, 2020



Ldn = 51 dBA

Noise Levels at LT-2
Coronado & Vista del Grande - San Carlos, CA
Wednesday, March 4, 2020



CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Arch Coating

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Arch	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Building Construction

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Bldg	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Crane	No	16		80.6	50.0	0.0
Man Lift	No	20		74.7	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Generator	No	50		80.6	50.0	0.0
Welder / Torch	No	40		74.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Auger Drill Rig	No	20		84.4	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night	Day	Calculated (dBA) Evening	Night	Day	Evening	Night
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane	80.6	72.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Man Lift	74.7	67.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Generator			80.6	77.6	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Welder / Torch			74.0	70.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Tractor			84.0	80.0	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
Auger Drill Rig			84.4	77.4	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				
	Total		84.4	84.8	N/A	N/A	N/A	N/A	N/A	
N/A	N/A	N/A	N/A	N/A	N/A	N/A				

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Demo

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Demo	Residential	65.0	60.0	55.0

Description	Impact Device	Usage (%)	Equipment Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	85.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Grading

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Grading	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Dozer	No	40		81.7	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Grader	No	40	85.0		50.0	0.0
Compactor (ground)	No	20		83.2	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA)	Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Compactor (ground)	83.2	76.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Paving

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Paving	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Drum Mixer	No	50		80.0	50.0	0.0
Paver	No	50		77.2	50.0	0.0
Roller	No	20		80.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Equipment	Calculated (dBA) Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Drum Mixer	80.0	77.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Paver	77.2	74.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Total	84.0	83.6		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Site Prep

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Site Prep	Residential	65.0	60.0	55.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Excavator	No	40		80.7	50.0	0.0
Front End Loader	No	40		79.1	50.0	0.0
Backhoe	No	40		77.6	50.0	0.0
Dozer	No	40		81.7	50.0	0.0
Concrete Saw	No	20		89.6	50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Calculated (dBA) Day Evening Night

Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backhoe	77.6	73.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

	Total	89.6	85.4		N/A		N/A		N/A		N/A		N/A		N/A		N/A		N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 02/18/2022
Case Description: Utility Trenching

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Utilities	Residential	65.0	60.0	5.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Backhoe	No	40		77.6	50.0	0.0
Excavator	No	40		80.7	50.0	0.0
Tractor	No	40	84.0		50.0	0.0

Results

Noise Limits (dBA)

Noise Limit Exceedance (dBA)

Night	Day	Calculated (dBA) Evening	Night	Day	Evening	Night
Equipment	Lmax Leq	Lmax Leq	Lmax Leq	Lmax	Leq	Lmax Leq
Backhoe	77.6 73.6	N/A N/A	N/A N/A	N/A	N/A	N/A N/A
Excavator	80.7 76.7	N/A N/A	N/A N/A	N/A	N/A	N/A N/A
Tractor	84.0 80.0	N/A N/A	N/A N/A	N/A	N/A	N/A N/A
Total	84.0 82.3	N/A N/A	N/A N/A	N/A	N/A	N/A N/A

TRAFFIC NOISE INCREASE CALCULATIONS

AM Existing

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	ADTs North	South	East	West
El Camino Real / San Carlos Avenue	70	505	0	268	0	302	0	827	260	0	0	0	18600	17040	0	9000
Alameda De Las Pulgas / San Carlos Avenue	254	0	446	0	636	218	0	0	0	208	453	0	0	11260	17430	15610
Alameda De Las Pulgas / Brittan Avenue	34	317	98	131	242	111	117	358	120	109	191	65	11080	10270	8220	8290
El Camino Real / Brittan Avenue	69	472	121	35	465	37	449	773	41	144	201	80	18500	16160	14600	8480
Old County Road / Brittan Avenue	75	266	23	183	777	80	48	134	117	11	236	23	7710	5890	11180	14680

PM

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR				
El Camino Real / San Carlos Avenue	171	987	0	217	0	177	0	831	382	0	0	0	24170	21660	0	9470
Alameda De Las Pulgas / San Carlos Avenue	249	0	256	0	361	235	0	0	0	328	678	0	0	10680	16230	15230
Alameda De Las Pulgas / Brittan Avenue	53	339	89	81	183	62	77	327	122	134	299	135	10810	10040	9170	8000
El Camino Real / Brittan Avenue	99	1002	85	64	250	74	199	816	54	277	440	227	23620	23530	14780	9810
Old County Road / Brittan Avenue	157	319	19	115	357	66	25	115	158	14	630	40	7720	6900	10850	14830

AM Existing + Project

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	ADTs North	South	East	West
El Camino Real / San Carlos Avenue	70	505	0	273	0	302	0	827	262	0	0	0	18670	17040	0	9070
Alameda De Las Pulgas / San Carlos Avenue	254	0	451	0	636	218	0	0	0	210	453	0	0	11330	17500	15610
Alameda De Las Pulgas / Brittan Avenue	34	317	98	142	242	111	122	358	147	109	191	65	11510	10270	8270	8670
El Camino Real / Brittan Avenue	69	472	121	35	469	38	449	773	41	144	201	80	18500	16170	14640	8530
Old County Road / Brittan Avenue	75	266	23	183	781	80	48	134	117	11	236	23	7710	5890	11220	14720

PM

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR
El Camino Real / San Carlos Avenue	171	987	0	222	0	177	0	831	387	0	0	0	24270	21660	0	9570
Alameda De Las Pulgas / San Carlos Avenue	249	0	258	0	361	235	0	0	0	333	678	0	0	10750	16300	15230
Alameda De Las Pulgas / Brittan Avenue	53	339	89	99	183	62	79	327	132	134	299	136	11120	10040	9200	8280
El Camino Real / Brittan Avenue	100	1002	85	64	252	74	199	816	54	277	440	227	23620	23540	14800	9840
Old County Road / Brittan Avenue	157	319	19	115	359	66	25	115	158	14	630	40	7720	6900	10870	14850

AM — Full Connectivity + Project

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR	ADTs North	South	East	West
El Camino Real / San Carlos Avenue	70	505	0	277	0	302	0	827	264	0	0	0	18730	17040	0	9130
Alameda De Las Pulgas / San Carlos Avenue	254	0	455	0	636	218	0	0	0	212	453	0	0	11390	17560	15610
Alameda De Las Pulgas / Brittan Avenue	34	317	98	148	242	111	126	358	167	109	191	65	11810	10270	8310	8930
El Camino Real / Brittan Avenue	69	472	121	35	472	39	449	773	41	144	201	80	18500	16180	14670	8570
Old County Road / Brittan Avenue	75	266	23	183	784	80	48	134	117	11	236	23	7710	5890	11250	14750

PM

	NBL	NBT	NBR	EBL	EBT	EBR	SBL	SBT	SBR	WBL	WBT	WBR
El Camino Real / San Carlos Avenue	171	987	0	222	0	177	0	831	398	0	0	0	24380	21660	0	9680
Alameda De Las Pulgas / San Carlos Avenue	249	0	261	0	361	235	0	0	0	344	678	0	0	10890	16440	15230
Alameda De Las Pulgas / Brittan Avenue	53	339	89	126	183	62	82	327	150	134	299	137	11610	10040	9240	8730
El Camino Real / Brittan Avenue	101	1002	85	64	254	75	199	816	54	277	440	227	23620	23560	14820	9880
Old County Road / Brittan Avenue	157	319	19	115	361	66	25	115	158	14	630	40	7720	6900	10890	14870

	Direction	Segment	Existing No Project	Existing Plus Project	Full Connectivity + Project	Project Noise Increase	Cumulative Increase
1	N	El Camino Real - North of San Carlos Avenue	18,600	18,670	18,730	0.0	0.0
	S	El Camino Real - South of San Carlos Avenue	17,040	17,040	17,040	0.0	0.0
	W	San Carlos Avenue - West of El Camino Real	9,000	9,070	9,130	0.0	0.1
2	S	Alameda De Las Pulgas - South of San Carlos Avenue	11,260	11,330	11,390	0.0	0.0
	E	San Carlos Avenue - East of Alameda De Las Pulgas	17,430	17,500	17,560	0.0	0.0
	W	San Carlos Avenue - West of Alameda De Las Pulgas	15,610	15,610	15,610	0.0	0.0
3	N	Alameda De Las Pulgas - North of Brittan Avenue	11,080	11,510	11,810	0.2	0.3
	S	Alameda De Las Pulgas - South of Brittan Avenue	10,270	10,270	10,270	0.0	0.0
	E	Brittan Avenue - East of Alameda De Las Pulgas	8,220	8,270	8,310	0.0	0.0
	W	Brittan Avenue - West of Alameda De Las Pulgas	8,290	8,670	8,930	0.2	0.3
4	N	El Camino Real - North of Brittan Avenue	18,500	18,500	18,500	0.0	0.0
	S	El Camino Real - South of Brittan Avenue	16,160	16,170	16,180	0.0	0.0
	E	Brittan Avenue - East of El Camino Real	14,600	14,640	14,670	0.0	0.0
	W	Brittan Avenue - West of El Camino Real	8,480	8,530	8,570	0.0	0.0
5	N	Old County Road - North of Brittan Avenue	7,710	7,710	7,710	0.0	0.0
	S	Old County Road - South of Brittan Avenue	5,890	5,890	5,890	0.0	0.0
	E	Brittan Avenue - East of Old Country Road	11,180	11,220	11,250	0.0	0.0
	W	Brittan Avenue - Old Country Road to El Camino Real	14,680	14,720	14,750	0.0	0.0

DECK NOISE SOUNDPLAN MODELING

Project description

Project title:	808 Alameda de las Pulgas
Project No.:	COSC-07
Project engineer:	JDC
Customer:	COSC

Description:

Run description

Calculation type:	Single Point Sound	
Title:	Single	
Calculation group		
Run file:	RunFile.runx	
Result number:		1
Local calculation (ThreadCount=8)		
Calculation start:		2/23/2022 22:37
Calculation end:		2/23/2022 22:38
Calculation time:	00:01:108 [m:s:ms]	
No. of points:		30
No. of calculated points:		30
Kernel version:	SoundPLAN 8.2 (2/23/2022) - 64 bit	

Run parameters

Reflection order:		3
Maximum reflection distance to receiver	200 m	
Maximum reflection distance to source	50 m	
Search radius	5000 m	
Weighting:	dB(A)	
Allowed tolerance (per individual source):	0.100 dB	
Create ground effect areas from road surfaces:	Yes	

Standards:

Industry:	ISO 9613-2: 1996
Air absorption:	ISO 9613-1
regular ground effect (chapter 7.3.1), for sources without a spectrum automatically alternative ground effect	
Limitation of screening loss:	
single/multiple	20.0 dB /25.0 dB
Side diffraction: Side paths also around terrain (outdated)	
Use Eqn (Abar=Dz-Max(Agr,0)) instead of Eqn (12) (Abar=Dz-Agr) for insertion loss	
Environment:	
Air pressure	1013.3 mbar
rel. humidity	70.00%
Temperature	10.0 °C
Meteo. corr. C0(7-22h)[dB]=0.0; C0(22-7h)[dB]=0.0;	
Ignore Cmet for Lmax industry calculation:	No
Parameter for screening: C2=20.0	
Dissection parameters:	
Distance to diameter factor	8
Minimal distance	1 m
Max. difference ground effect + diffraction	1.0 dB
Max. number of iterations	4
Attenuation	
Foliage:	ISO 9613-2
Built-up area:	ISO 9613-2
Industrial site:	ISO 9613-2
Assessment:	Day Night Level LDN
Reflection of "own" facade is suppressed	

Geometry data

Residential Map.sit		2/23/2022 22:37
- contains:		
	DXF_C-CLUSTER.geo	2/23/2022 16:57
	DXF_C-GRAD-CONT-MAJR.geo	2/22/2022 13:12
	DXF_C-GRAD-CONT-MAJR-TXT.geo	2/22/2022 13:08
	DXF_C-GRAD-TEXT.geo	2/22/2022 13:08
	DXF_C-MAPP-BNDY.geo	2/22/2022 13:12
	DXF_C-ROAD-CURB-FACE.geo	2/22/2022 13:12
	DXF_C-WALL.geo	2/22/2022 13:12
	DXF_V-TOPO-MAJR.geo	2/23/2022 13:12
	DXF_V-TOPO-MAJR-DEMO.geo	2/22/2022 13:12
	DXF_V-TOPO-MINR.geo	2/22/2022 13:12
	OSM_Building.geo	2/22/2022 13:12
	Sources.geo	2/23/2022 22:37
RDGM0002.dgm		2/23/2022 21:31

Name	Source type	l or A	m,m²	Li dB(A)	R'w dB	L'w dB(A)	Lw dB(A)	KI dB	KT dB	LwMax dB	DO-Wall d	Time histo	Emission spectrum	125Hz dB(A)	250Hz dB(A)	500Hz dB(A)	1kHz dB(A)	2kHz dB(A)	4kHz dB(A)	8kHz dB(A)
Roof1	Area		49.94			68.4	85.4	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.8	73.7	82.8	80	74	67.8	60.4
Roof2	Area		50.73			68.4	85.5	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.9	73.8	82.9	80.1	74.1	67.9	60.5
Roof3	Area		49.18			68.4	85.3	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.7	73.6	82.7	79.9	73.9	67.7	60.3
Roof4	Area		49.84			68.4	85.4	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.8	73.7	82.8	80	74	67.8	60.4
Roof5	Area		52			68.4	85.6	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	62	73.9	83	80.2	74.2	68	60.6
Roof6	Area		50.18			68.4	85.4	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.8	73.7	82.8	80	74	67.8	60.4
Roof7	Area		48.64			68.4	85.3	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.7	73.6	82.7	79.9	73.9	67.7	60.3
Roof8	Area		49.39			68.4	85.3	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.7	73.6	82.7	79.9	73.9	67.7	60.3
Roof9	Area		48.66			68.4	85.3	0	0	0		100%/24h	Lw,S (EN ISO 3382:2012) Default	61.7	73.6	82.7	79.9	73.9	67.7	60.3

Receiver	Usage	Fl	Dir	dB(A)	Lr,lim dB(A	Lr,lim dB(A	Ldn dB(A)	Leq,d dB(A)	Leq,n dB(A)	Ldn,diff dB	Leq,d,diff dB	Leq,n,diff dB
R1	SCR	G					43.2	36.8	36.8			
R2	SCR	G					46.2	39.8	39.8			
R3	SCR	G					50	43.6	43.6			
R4	SCR	G					54.6	48.2	48.2			
R5	SCR	G					49.3	42.9	42.9			
R6	SCR	G					50.9	44.5	44.5			
R7	SCR	G					45.6	39.2	39.2			
R8	SCR	G					45.6	39.2	39.2			
R9	SCR	G					45.9	39.5	39.5			
R10	SCR	G					47.3	40.9	40.9			
R11	SCR	G					51	44.5	44.5			
R12	SCR	G					52.7	46.3	46.3			
R13	SCR	G					53.4	47	47			
R14	SCR	G					53.5	47.1	47.1			
R15	SCR	G					53.3	46.9	46.9			
R16	SCR	G					52.5	46.1	46.1			
R17	SCR	G					49.5	43.1	43.1			
R18	SCR	G					48.7	42.2	42.2			
R19	SCR	G					44.8	38.4	38.4			
R20	SCR	G					31.4	25	25			
R21	SCR	G					39.4	33	33			
R22	SCR	G					40.1	33.7	33.7			
R23	SCR	G					35.6	29.2	29.2			
R24	SCR	G					40.1	33.7	33.7			
R25	SCR	G					41.7	35.3	35.3			
R26	SCR	G					42.2	35.8	35.8			
R27	SCR	G					41.5	35.1	35.1			
R28	SCR	G					43.2	36.8	36.8			
R29	SCR	G					47.4	41	41			
R30	SCR	G					40.8	34.3	34.3			

APPENDIX L

TRANSPORTATION IMPACT ANALYSIS

Appendix L1:
Transportation Impact Analysis

CHS Consulting Group
808 Alameda de las Pulgas
Transportation Impact Analysis

Final Report

Prepared for:

PlaceWorks, Inc.

Prepared by:

CHS Consulting Group

June 6, 2022

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Tables and Figures

Tables **Page**

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Appendices

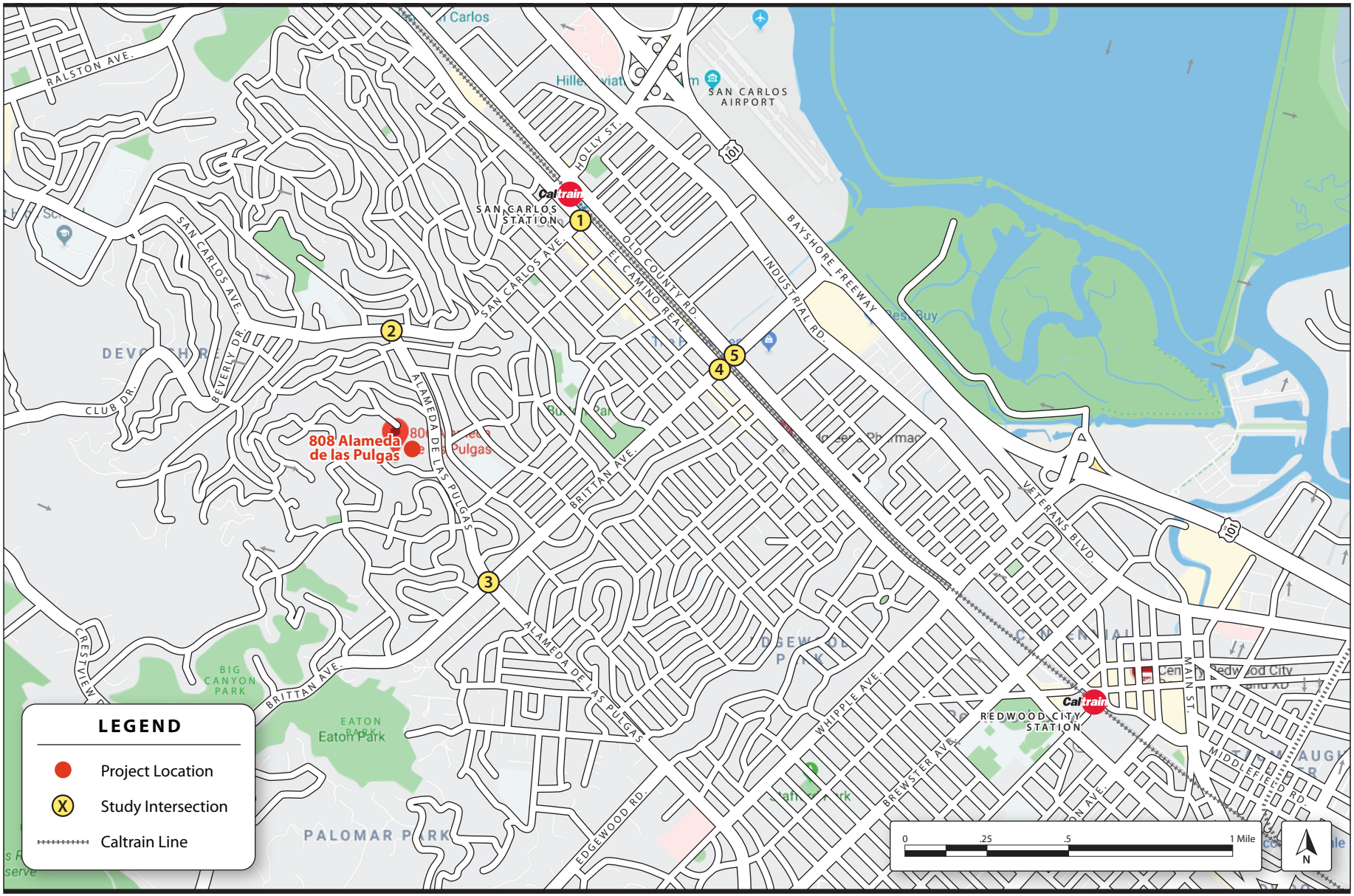
1.0 Introduction

This transportation impact analysis (TIA) has been prepared as a resource document for the Environmental Evaluation of the 808 Alameda de las Pulgas Townhome Development (herein referred to as the "Project") based on project plans dated March 2021. This study has been prepared in accordance with the California Environmental Quality Act (CEQA) requirement and in accordance with the Scope of Work (**Appendix A**) approved by the San Carlos Planning Department. Transportation data for project analysis was provided based on field observations and data collected by CHS Consulting Group (CHS) in proximity of the Project. The purpose of the TIA is to provide a comprehensive evaluation of the Project and to examine the extent to which the proposed development would affect the existing transportation network.

1.1 Project Description

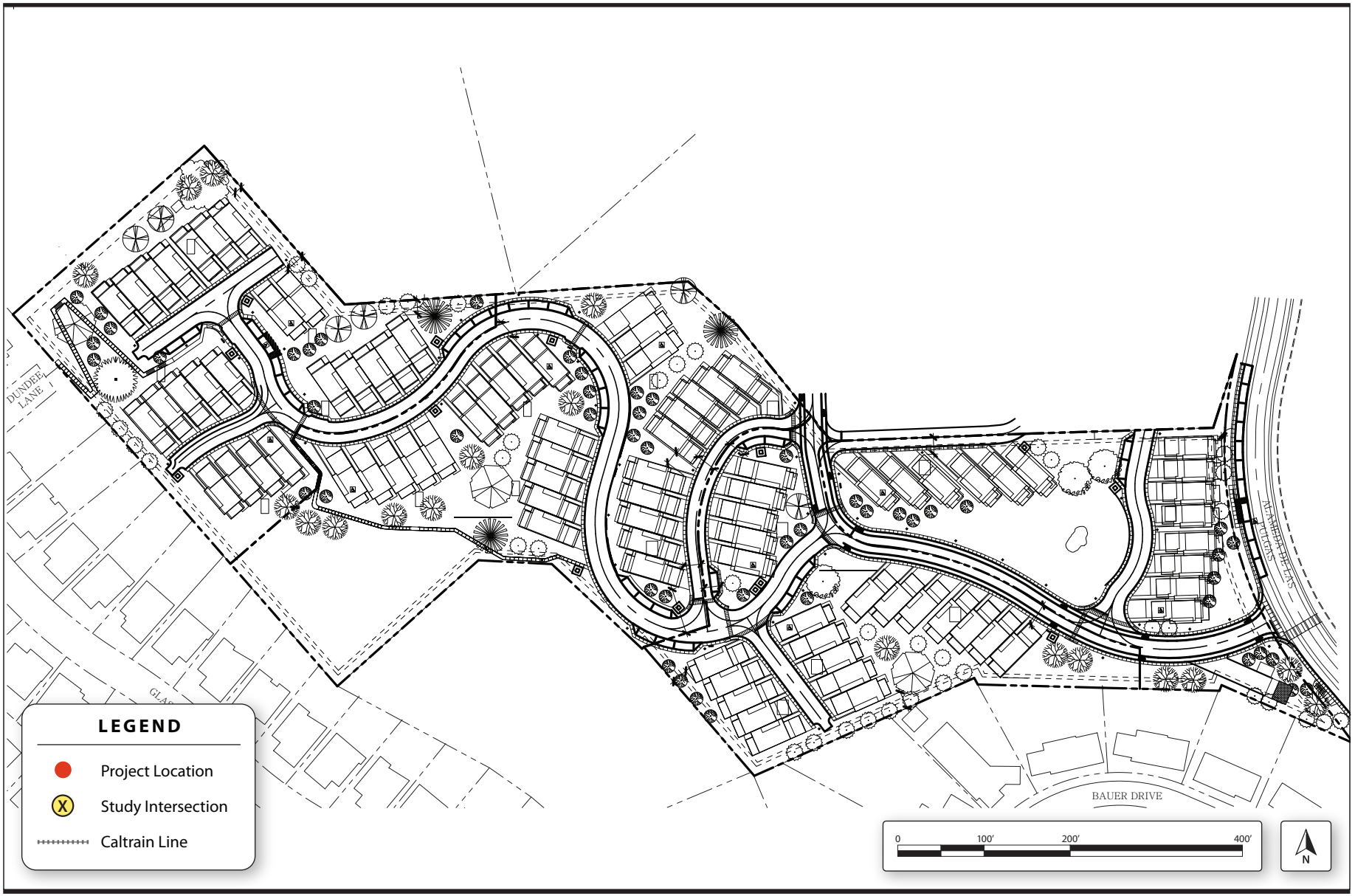
The Project would be located at 808 Alameda de las Pulgas, south of San Carlos Avenue in the City of San Carlos. The project location and study intersections are shown on **Figure 1**. The project site parcels are zoned RS-6, Single Family. The RS-6, Single Family, designation allows for the development of up to six units per net acre and dwelling units may include detached single-unit homes, small lot single-unit developments, duplexes, townhomes, or secondary dwelling units.

The Project would include 87 three- or four-bedroom townhomes. All dwelling units are accessed from a privately maintained road that intersects Alameda de las Pulgas for vehicular and bike access, as well as sidewalks and trails for pedestrian access. The on-site pedestrian network would seamlessly connect to the public sidewalk on Alameda de las Pulgas. The Project would provide 214 parking spaces including two spaces for each townhome, and an additional 40 parking spaces for guests along the private road. **Figure 2** includes the project site plan.



808 Alameda de las Pulgas

Figure 1
Project Location



808 Alameda de las Pulgas

Figure 2
Project Site Plan

1.2 Study Scope and Approach

The purpose of this TIA is to provide a comprehensive evaluation of the Project and to examine the extent to which the proposed development would affect the surrounding multimodal transportation network. The scope of work for this transportation study includes analysis of transportation impacts under two scenarios:

- Existing Conditions
- Existing plus Project Conditions

In addition, analysis for a Full Connectivity Option was provided in this TIA. The Full Connectivity Option considers a hypothetical potential residential development that could occur on adjacent property, referred to as Vista del Grande, as part of the future conditions for information purposes.

For purposes of assessing transportation conditions within the project area, project vehicle trips were estimated based on vehicular trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual. The trip distribution was based on existing traffic patterns in the Project study area.

Existing traffic volumes were collected during the AM and PM peak hours at major intersections along the inbound and outbound truck routes as well as construction worker travel routes that would be directly affected by the Project. The intersection turning movement counts were collected on May 14, 2019 during the AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak hour periods. The following five intersections were analyzed for this study:

- El Camino Real / San Carlos Avenue
- Alameda De Las Pulgas / San Carlos Avenue
- Alameda De Las Pulgas / Brittan Avenue
- El Camino Real / Brittan Avenue
- Old County Road / Brittan Avenue

In addition, 24-hour traffic volumes were collected on May 14, 2019 on Alameda De Las Pulgas between Castor Road and Madera Avenue.

Intersection levels of services analyses were performed for the weekday AM and PM peak hours which are between 7:45 a.m. and 8:45 a.m., and between 4:45 p.m. and 5:45 p.m., respectively. Traffic counts were collected for all intersections on May 14, 2019.

Major public transit facilities are described in terms of routes and stops in the vicinity of the project site, and impacts are discussed. The numbers of bicyclists and pedestrians traveling through study area intersections were collected on May 14, 2019. The bicycle and pedestrian activity in the vicinity of the project site are described qualitatively in this TIA.

2.0 Existing Conditions

This section describes the existing transportation conditions in the vicinity of the project site including descriptions of the roadways and documentation of existing vehicular traffic, local and regional transit service, pedestrian, and bicycle access conditions. This section presents the existing roadway network in the vicinity of the project site, as well as the project study area transit conditions.

2.1 Roadway Description

2.1.1 Regional Access

The following includes a discussion of existing roadways in the vicinity of the Project. The functional designations of the roadways were obtained from the *San Carlos 2030 General Plan*.

Interstate 280 (I-280)

I-280 is a north-south freeway that provides regional access from San Francisco's South of Market neighborhood to the Peninsula, and the South Bay. In the vicinity of the project site, access to I-280 from the project site is provided via the northbound and southbound on-ramps located at Edgewood Road, approximately 2.27 miles southwest of the project site. I-280 is identified as a Congestion Management Program (CMP) facility in *the City/County Association of Governments (C/CAG) Final Congestion Management Program* (2001).

U.S. Highway 101 (U.S. 101)

U.S. 101 is a north-south freeway serving San Carlos, San Francisco, the Peninsula, the North Bay, and the South Bay. The freeway connects to Interstate 80 (I-80), which provides connections to the East Bay. Access to U.S. 101 from the project site is provided via the southbound on-ramp at Brittan Avenue, approximately 1.4 miles northeast of the project site, and via the northbound on-ramp at Holly Street, approximately 1.6 miles northeast of the project site. U.S. 101 is identified as a CMP facility in the *C/CAG Final Congestion Management* Program (2001).

2.1.2 Local Access

The City of San Carlos' roadway system is comprised of freeways/State Highways, arterial streets, collector streets, and minor streets. The *San Carlos 2030 General Plan* defers to the California Department of Transportation for definitions of freeways and state highways.[1] Consistent with the *San Carlos 2030 General Plan,* arterials are defined as major streets that link residential, commercial, and industrial districts with freeways and highways, and provide convenient access to other transportation facilities, and also serve as primary emergency/evacuation routes. Arterial Streets typically include two to four travel lanes, with some parking and access point controls. The *San Carlos* 2030 *General Plan* defines Collector Streets as roadways

[1] *Chapter 5 – Circulation and Highways Element,* San Carlos 2030 General Plan (October 12, 2009). Accessible online at: https://www.cityofsancarlos.org/Home/ShowDocument?id=1105

that transfer traffic from local generators and minor streets to arterial streets, typically consisting of two lanes and protected from cross-traffic. The *San Carlos* 2030 *General Plan* defines local streets as providing access to abutting properties, locations for easements, open space for light and air, and a firebreak between buildings, typically accommodating two lanes of traffic, curbside parking, sidewalks and bicycle lanes wherever possible.

Local vehicle, bicycle, and pedestrian access to the project site will be from Alameda de las Pulgas. Local access is provided by arterial and local roadways in proximity to the project site. Descriptions of these roadways are presented below.

El Camino Real – State Route 82 (SR 82)

El Camino Real is a north-south arterial roadway that runs from its connection with Mission Street in the City of Colma to its southern terminus at its intersection with The Alameda in the City of San Jose. In the vicinity of the project site, El Camino Real generally operates with three travel lanes in the southbound direction and two travel lanes in the northbound direction. The *San Carlos General Plan* identifies El Camino Real as a State Highway. El Camino Real is identified as a CMP facility in the *C/CAG Final Congestion Management* Program (2001).

San Carlos Avenue

San Carlos Avenue is an east-west roadway that runs from its connection with Alameda De Las Pulgas in San Carlos to its eastern terminus at its intersection with El Camino Real. In the vicinity of the project site, San Carlos Avenue has one travel lane and Class II bikeways in each direction with sidewalks on both sides of the street. On-street parking is available on some segments along both sides of the street. *San Carlos 2030 General Plan* identifies San Carlos Avenue as an arterial street.

Alameda De Las Pulgas

Alameda De Las Pulgas is a north-south roadway that runs from Crystal Springs Road in Burlingame to Santa Cruz Avenue in West Menlo Park. In the vicinity of the project site, Alameda De Las Pulgas has one travel lane and Class II bikeways in each direction with sidewalks on both sides of the street. Alameda De Las Pulgas is identified as an arterial street in the *San Carlos 2030 General Plan*.

Brittan Avenue

Brittan Avenue is an east-west roadway that runs from the ramps at U.S. 101 to its western terminus near Pulgas Ridge Preserve. In the vicinity of the project site, Brittan Avenue has one travel lane and Class II bikeways in each direction with sidewalks on both sides of the street. On-street parking is available on some segments along both sides of the street. The *San Carlos 2030 General Plan* identifies Brittan Avenue as an arterial street.

Old County Road

Old County Road is a north-south roadway that runs from its connection with Pacific Boulevard in San Mateo to its connection with Stafford Street in Redwood City. In the vicinity of the project site, Old County Road has one travel lane in each direction, Class II bikeways south of Bransten Road, and Class III bikeways north of Bransten Road. Sidewalks are present on both sides of the street, and on-street parking is provided

on much of the east side of the street. *San Carlos 2030 General Plan* identifies San Carlos Avenue as an arterial street.

2.2 Existing Traffic Operations

2.2.1 Intersection Levels of Service

Traffic operating characteristics of intersections are described by the concept of level of service (LOS). It uses a series of letter designations raging from A to F to rank traffic operations. LOS A represents free flow conditions and LOS F represents forced flow or breakdown conditions. The Transportation Research Board's *Circular 212* methodology has been adopted by the City of San Carlos for calculating intersection LOS. The Circular 212 methodology uses the volume-to-capacity ratio (V/C) as the metric for determining LOS. The capacity of an intersection is based on an average saturation flow rate and percent lost time, and intersection capacities are set to 1,850 vehicles per hour for a two-phase signal, 1,760 vehicles per hour for a three-phase signal, and 1,700 vehicles per hour for a four-phase signal. The volume-to-capacity ratio is calculated by dividing the critical volume for an intersection by the appropriate capacity

According to the *San Carlos 2030 General Plan*, the City shall strive to maintain intersection service levels above the midrange of level of service D (not to exceed a V/C of 0.85). The LOS policy related to signalized intersections in San Carlos are: (1) if a signalized intersection operates at an acceptable LOS without the Project and degrades to an unacceptable LOS with the Project, the project will have a potential significant impact; (2) if the signalized intersection operates at an unacceptable LOS without the Project, and the intersection continues to operate unacceptably with the Project, the Project impact would be potentially significant if the addition of Project traffic causes the V/C to increase by more than 0.01 second.

The five study intersections are all under jurisdiction of the City of San Carlos, and were analyzed using the TRB *Circular 212* methodology. Intersection LOS was analyzed for each intersection for the peak hour (a 60-minute period with the highest recorded traffic volume at each intersection in the peak period). Existing intersection turning movement counts were collected in May of 2019 (while schools were in session) during the AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods. The intersection lane configurations on shown on **Figure 3** and the existing vehicle turning movement volumes for the study intersections in the AM and PM peak hours are shown on **Figure 4.** The intersection turning movement count data is provided within **Appendix A**.

The LOS and volume capacity ratio results for the study intersections are presented in **Table 1.** As shown in Table 1,all intersections operate at acceptable LOS during the AM and PM peak hours under Existing Conditions. The detailed calculation sheets for the intersection LOS results are contained in **Appendix B**.

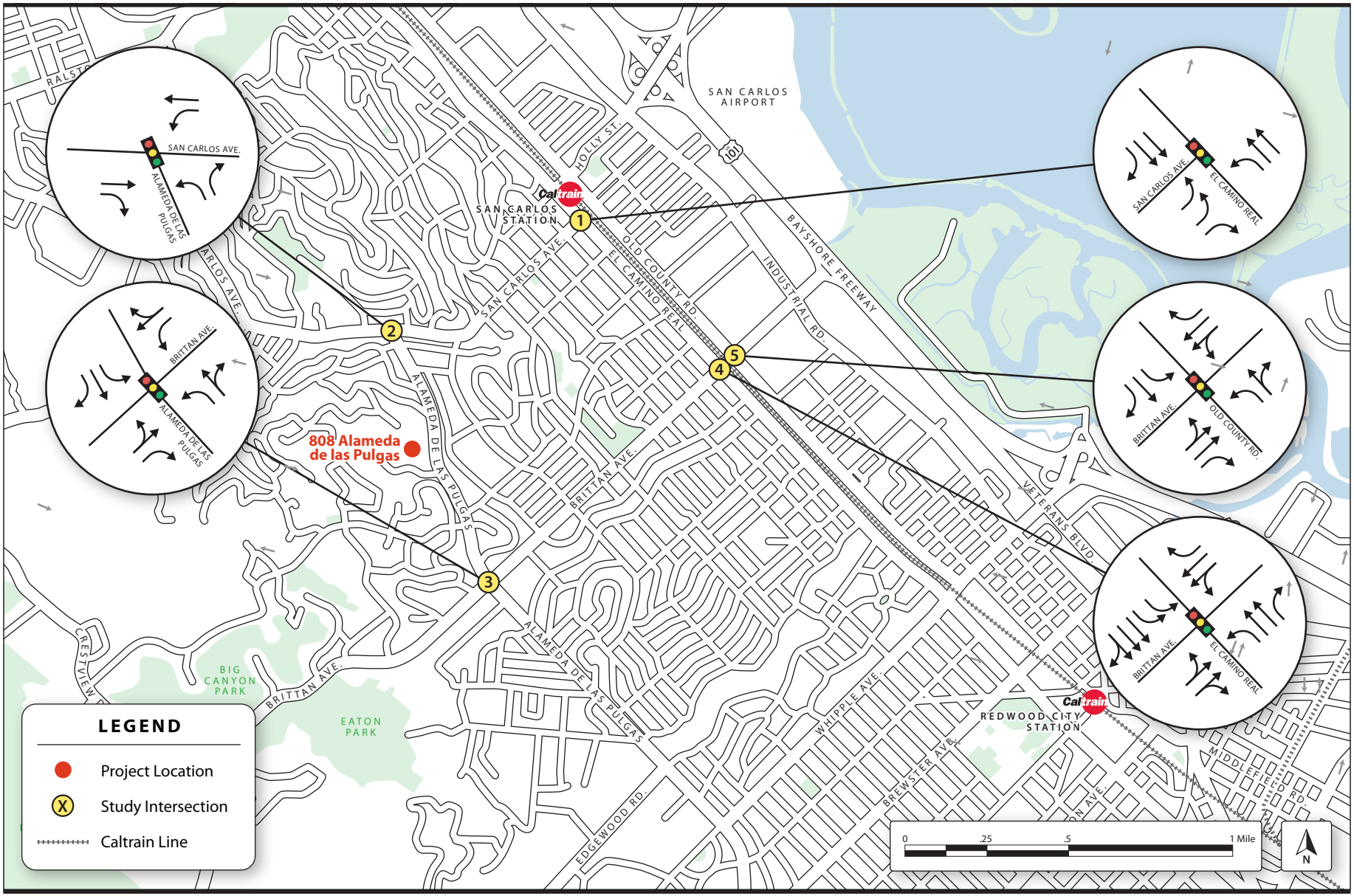


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Figure 3
Existing Lane Configurations

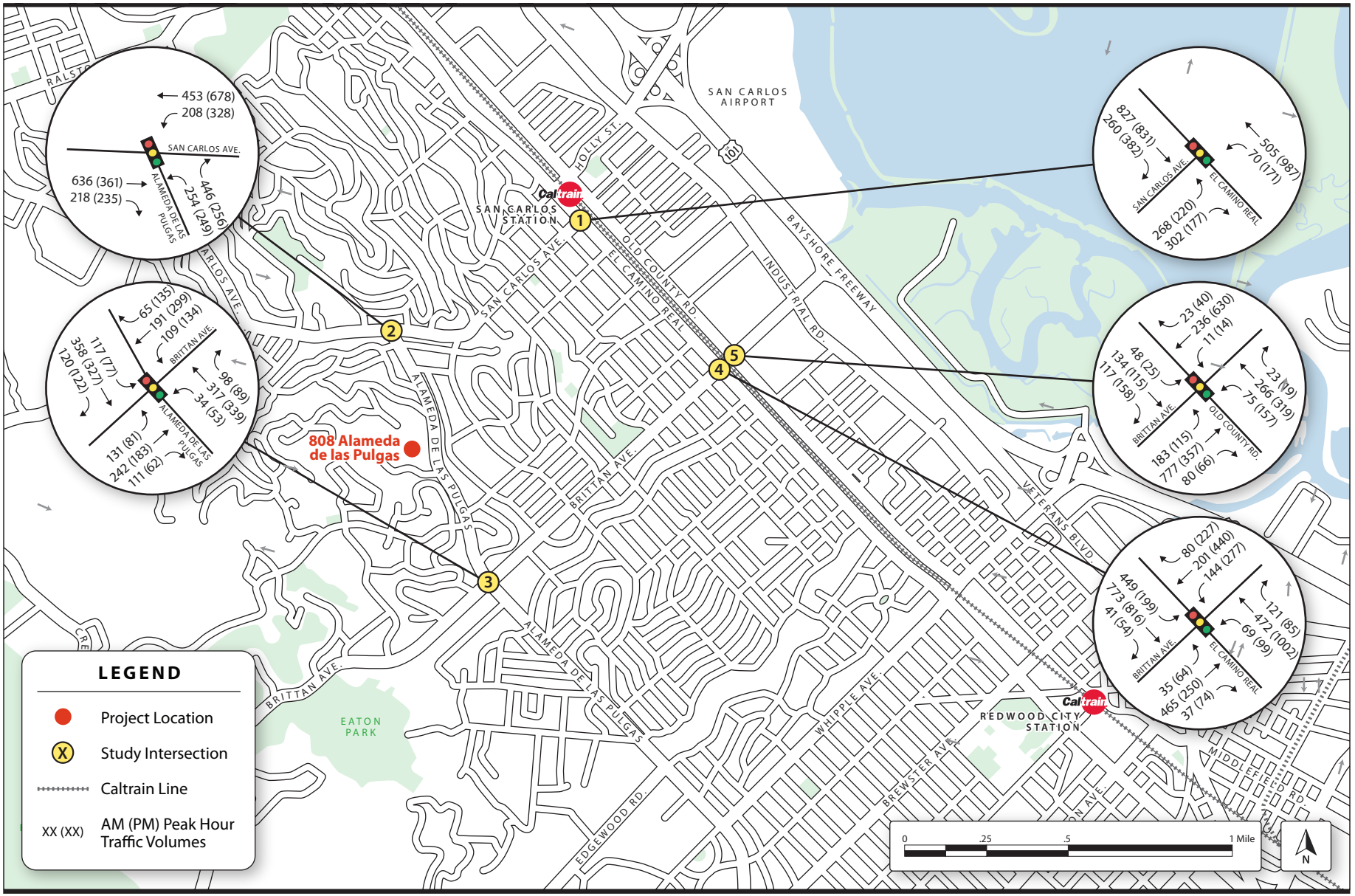

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Figure 4
Existing Peak Hour Traffic Volumes

Table 1. Existing Intersection LOS

Intersection	AM Peak Hour		PM Peak Hour	
	V/C	LOS	Delay	LOS
El Camino Real / San Carlos Avenue	0.505	A	0.491	A
Alameda De Las Pulgas / San Carlos Avenue	0.812	D	0.595	A
Alameda De Las Pulgas / Brittan Avenue	0.625	B	0.685	B
El Camino Real / Brittan Avenue	0.588	A	0.687	B
Old County Road / Brittan Avenue	0.507	A	0.494	A

Source: CHS Consulting Group, 2019.

2.2.2 Daily Traffic Volumes

The 24-hour traffic counts were collected in May of 2019 (while schools were in session) along Alameda De Las Pulgas between Castor Road and Madera Avenue. Based on the collected data the AM peak hour of traffic occurs between 7:45 a.m. and 8:45 a.m., and the PM peak hour of traffic occurs between 5:00 p.m. and 6:00 p.m. A summary of daily and peak hour traffic volumes are presented in **Table 2**. Appendix B includes detailed traffic volume data.

Table 2. Daily Traffic Volumes on Alameda De Las Pulgas

Roadway	Daily	AM Peak Hour		PM Peak Hour	
	Volume	Volume	Percent of Daily	Volume	Percent of Daily
Alameda De Las Pulgas between Castor Road and Madera Avenue	10,222	1,075	10.5%	909	8.9%

Source: CHS Consulting Group, 2019.

2.3 Transit Service Network

The study area for transit generally covers a one quarter-mile radius from the project site. The project site is served by local public transit service provided by the San Mateo County Transit District (SamTrans).The transit lines in the study area and locations of bus stops are presented on **Figure 5**.

2.3.1 SamTrans

SamTrans operates bus lines within San Mateo County, as well as to and from locations in San Francisco and Palo Alto. There is one bus route located within the project study area. The SamTrans Route 61 stops on Alameda de las Pulgas near Madera Drive, located approximately 745 feet (0.14 miles) north of the project site; on Alameda de las Pulgas near Melendy Drive, approximately 920 feet (0.17 miles) southeast of

the project site, and on Melendy Drive near Sunset Drive, approximately 1,200 feet (0.23 miles) south of the project site.

Route 61 provides service connecting local destinations in San Carlos, and provides transfer connections to additional regional transit services. Route 61 operates two-way service, with northbound service between the San Carlos Caltrain station and the intersection of Alameda de las Pulgas and Ralston Avenue from 7:08 a.m. to 8:50 a.m. on weekday mornings (three to four trips), and southbound service between the Belmont Library on Alameda de las Pulgas and the San Carlos Caltrain stop from 1:35 p.m. to 3:25 p.m. on weekday afternoons. (three trips) Major destinations served by Route 61 include the San Carlos Caltrain Station, Clairmont High School, Belmont Library, and the Tierra Linda School.

The headways, hours of operation, and locations of the nearest stop relative to the project site for each of these routes is presented in **Table 3**. The *2019 SamTrans Short-Range Transit Plan* proposes no significant service changes in the project vicinity.[2]

Table 3. Existing SamTrans Routes

Route	Direction	Weekday Headways[1]		Hours of Operation	Nearest Stop Location	Distance to project site (feet)[2]
		AM	PM			
61	NB	24 - 50	-	7:00 a.m. – 9:25 a.m.	Alameda de las Pulgas / Madera Drive	850
	SB	-	-	1:35 p.m. – 3:53 p.m.		850

Source: SamTrans, 2019; CHS Consulting, 2019.

Notes:

NB = Northbound; SB = Southbound

1. Headways in minutes. AM peak = 7:00 AM to 9:00 AM and PM peak = 4:00 PM to 6:00 PM

2. Distances are approximate and are measured from the center of the project site along local streets to reach the nearest transit stop.

2.3.2 Caltrain

The Peninsula Commute Service (Caltrain) provides rail passenger service on the Peninsula between Gilroy and San Francisco. The most convenient station to the project site is the San Carlos Station which is located approximately 1.6 miles from the Project to the northeast. SamTrans route 61 provides a connection between the San Carlos Station and the project site. Caltrain currently operates 86 trains each weekday, with a combination of baby bullet, limited-express, and local services. Headways during the AM and PM peak period are approximately ten to thirty minutes.

[2] *Short-Range Transit Plan – Fiscal Years 2019-2028*: Section 4 - Operations Plan & Budget. San Mateo County Transit District (May 3, 2017). Accessible online at: http://www.samtrans.com/Assets/_Planning/2019-2028+SamTrans+Short+Range+Transit+Plan.pdf

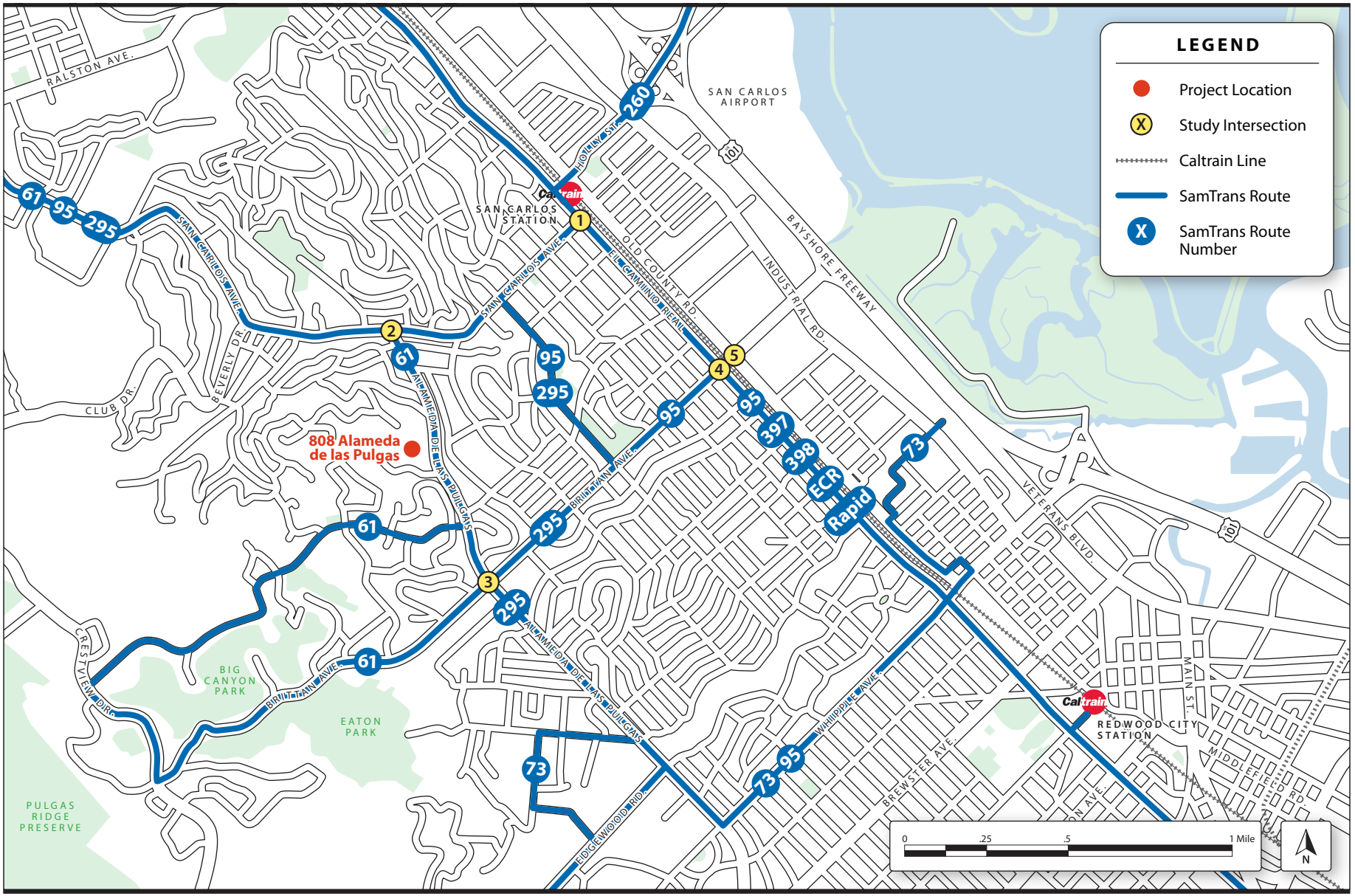

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Figure 5
Transit Network

2.4 Pedestrian Conditions

This section describes existing pedestrian conditions on the streets adjacent to the project site. Most parts of the streets in the study area have sidewalks on both sides. Sidewalks are approximately 4 to 8 feet wide. On the west side of Alameda de las Pulgas, sidewalks are approximately four feet wide. The sidewalk on the east side of Alameda de las Pulgas, is in the range of four to eight feet in width. The sidewalk width on Brittan Avenue is in the range of four to five feet; and on San Carlos Avenue near El Camino Real, the sidewalk width is generally six to eight feet. El Camino Real generally has sidewalks of eight feet in width.

More detailed assessment was conducted along Alameda de las Pulgas between Brittan Avenue and San Carlos Avenue, and the following findings were noted.

Lack of sidewalk

- West side on Alameda de las Pulgas north of Pine Ave for approximately 100 feet. There is a 3-feet pedestrian path behind trees but including some staircases.
- West side on Alameda de las Pulgas north of Alameda de las Pulgas & Alma St bus stop for approximately 80 feet.

Lack of curb ramp

- Northwest and southwest corners of Alameda de las Pulgas/Carmelita Dr intersection
- Both corners of Alameda de las Pulgas/Pine Ave intersection
- Both corners of Alameda de las Pulgas/Madera Ave intersection
- Both corners of Alameda de las Pulgas/Lupin Way intersection
- Northwest and northeast corners of Alameda de las Pulgas/Brittan Ave intersection

Non-ADA compliant sidewalk due to poles:

- East side on Alameda de las Pulgas 30 feet north of Rockridge Rd
- West side on Alameda de las Pulgas 330 and 460 feet north of Rockridge Rd
- West side on Alameda de las Pulgas 60 feet north of Castor Rd
- West side on Alameda de las Pulgas 20 and 260 feet south of Madera Ave
- West side on Alameda de las Pulgas 210 feet north of Madera Ave
- West side on Alameda de las Pulgas 130 feet south of Carmelita Dr
- East side on Alameda de las Pulgas 100 feet south of San Carlos Ave

As part of the qualitative evaluation of pedestrian traffic in and around the project site, CHS collected pedestrian counts at all crosswalks of each study intersection during the weekday AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods in May of 2019. The highest concentrations of pedestrian activity in the study area was observed at the intersection of El Camino Real and San Carlos Avenue near the San Carlos Caltrain Station where 135 pedestrians crossing the intersection were observed during the AM peak hour. The pedestrian volumes are generally low along Alameda De Las Pulgas and Brittan Avenue with 19 or fewer pedestrian crossings during the peak hours. The pedestrian count volumes for existing conditions at the five study intersections during the weekday AM and PM peak hours are summarized in **Table 4**. Pedestrian traffic counts re included within **Appendix A**.

According to the *City of San Carlos 2030 General Plan*, the City supports improved east-west connectivity by providing pedestrian/bicycle under crossings of the Caltrain tracks at intervals, during future track reconstruction, or as developer mitigation occurs in conjunction with the construction of an approved project.

Table 4. Intersection Pedestrian Crossings

Intersection	North Leg	East Leg	South Leg	West Leg
El Camino Real / San Carlos Avenue	5 (6)	8 (10)	116 (100)	6 (8)
Alameda De Las Pulgas / San Carlos Avenue	5 (1)	2 (2)	7 (7)	0 (0)
Alameda De Las Pulgas / Brittan Avenue	1 (3)	4 (3)	3 (3)	5 (4)
El Camino Real / Brittan Avenue	1 (5)	0 (2)	2 (3)	5 (9)
Old County Road / Brittan Avenue	1 (9)	5 (9)	2 (1)	0 (0)

Source: CHS Consulting Group, 2019.
Notes:
1. Pedestrian counts are for the AM (PM) Peak Hour.

2.5 Bicycle Conditions

Bicycle facilities include bicycle lanes, trails, and paths, as well as bicycle parking and bicycle lockers. On-street bicycle facilities include Class I bikeways (trails or shared-use paths with exclusive right-of-way for use by bicyclists or pedestrians); Class II bikeways (bicycle lanes striped within the paved areas of roadways and established for the preferential use of bicycles); Class III bikeways (signed bicycle routes that allow bicycles to share travel lanes with vehicles); and Class IV separated bikeways (on-street bike facilities that are physically separated from traffic by curbs, plant boxes, bollards, grade separation, or parked cars for exclusive right-of-way for use by bicyclists). Several bicycle facilities are provided under existing conditions in the vicinity of the project site. The location of bikeways near the project site are presented on **Figure 6**.

- Class I bikeways:
  - San Francisco Bay Trail west of U.S. 101
- Class II bikeways:
  - Alameda De Las Pulgas (between San Carlos Avenue and Edgewood Road)
  - San Carlos Avenue (between Beverly Drive and Elm Street)
  - Brittan Avenue (between Alameda De Las Pulgas and Laurel Street)
  - Old County Road (between Bransten Road and the south end of San Carlos)
  - Industrial Road
- Class III bikeways:
  - Old County Road (between Bransten Road and north end of San Carlos)
  - San Carlos Avenue (between Beverly Drive and north end of San Carlos)
  - Arroyo Avenue (between Tamarack Avenue and El Camino Real)
  - Cedar Street (between San Carlos Avenue and Park Avenue)
  - Cordilleras Avenue (between San Carlos Avenue and Elizabeth Street)

To inform the qualitative evaluation of pedestrian traffic near the project site, CHS collected pedestrian counts at crosswalks at each study intersection during the weekday AM (7 a.m. to 9 a.m.) and PM (4 p.m. to 6 p.m.) peak periods on May 14, 2019. The existing bicycle counts at the study intersections during the AM and PM peak hours are summarized in **Table 5**. There are generally low levels of existing bicycle traffic at the study intersections in both the AM and PM peak hours. The highest levels of bicycle volumes during both the AM peak hour and PM peak hour periods were observed at the intersection of Alameda De Las Pulgas and San Carlos Avenue.

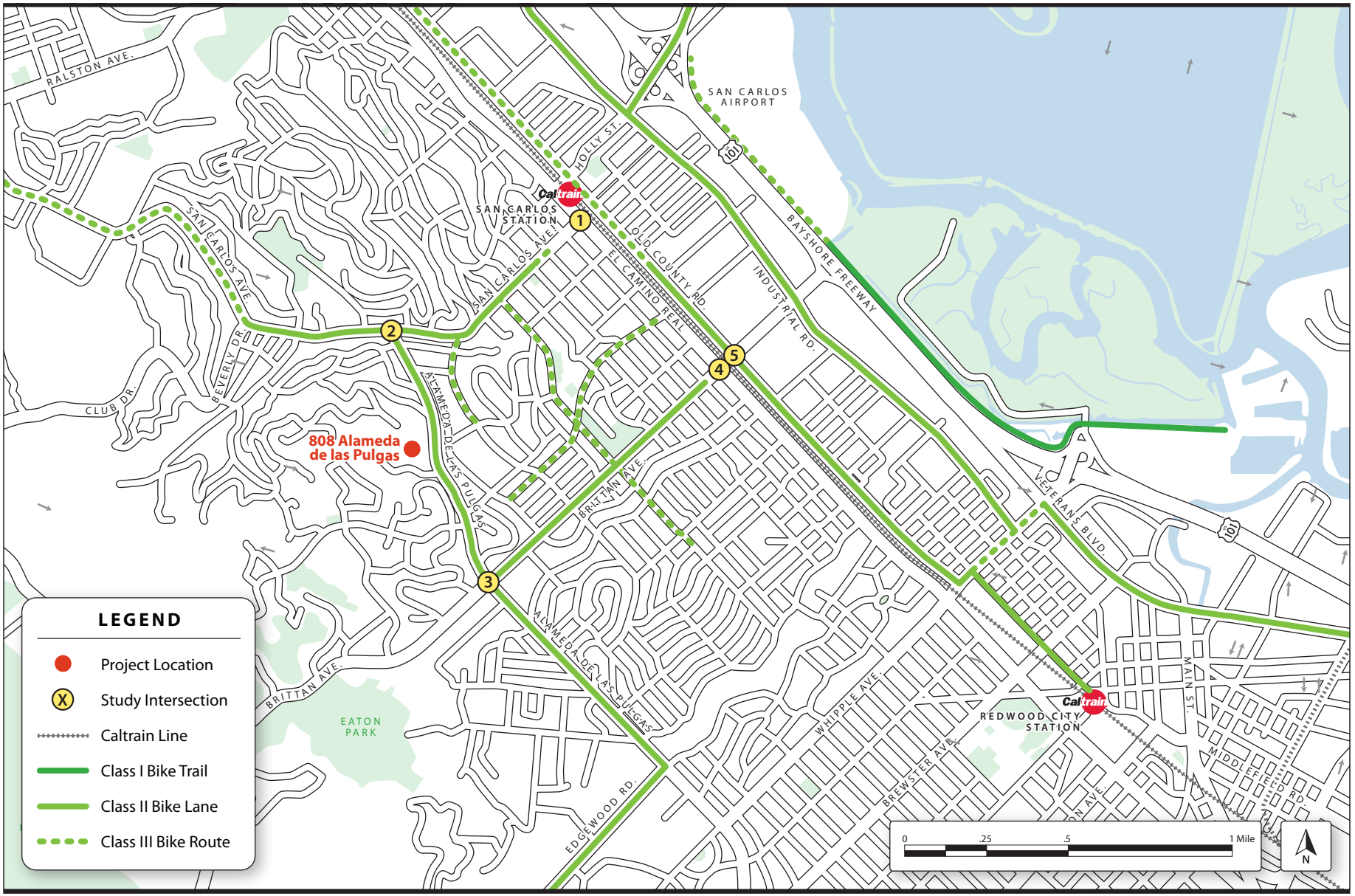

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Figure 6
Bicycle Network

Table 5. Intersection Bicycle Volumes

Intersection	Northbound	Eastbound	Southbound	Westbound
El Camino Real / San Carlos Avenue	0 (2)	3 (1)	1 (2)	N/A
Alameda De Las Pulgas / San Carlos Avenue	13 (5)	9 (6)	N/A	3 (5)
Alameda De Las Pulgas / Brittan Avenue	9 (5)	3 (0)	6 (4)	1 (1)
El Camino Real / Brittan Avenue	0 (3)	2 (1)	2 (2)	0 (4)
Old County Road / Brittan Avenue	10 (6)	3 (1)	10 (13)	0 (0)

Source: CHS Consulting Group, 2019.
Notes:
1. Bicycle counts are for the AM (PM) Peak Hour.
2. NA = Intersection does not have an applicable approach.

2.6 Emergency Vehicle Access

The nearest San Carlos fire stations and Police Department location include:

- Fire Station No. 16, located at 1280 Alameda de las Pulgas (about 0.5 miles south of the Project)
- Fire Station No. 13, located at 525 Laurel Street (about one mile northeast of the Project)
- Police Department, located at 600 Elm Street (about one mile northeast of the Project)

The street network serving the project area currently accommodates the movements of emergency vehicles that travel to the project site. In the event of an emergency, emergency vehicles can access the project site via Alameda de las Pulgas. In addition, there is an emergency vehicle access road connecting the Project to Coronado Avenue via a 30-feet-wide private easement within the Vista Del Grande Terraces development north of the Project.

3.0 Existing plus Project Conditions

3.1 Project Travel Demand

3.1.1 Trip Generation

The Project would include 87 three- or four-bedroom townhomes. The project trip generation was estimated based on standard rates contained in the ITE Trip Generation Manual, 10th Edition, 2017. Multi-family Housing Low-Rise (Land Use 220) was used to estimate the trip generation for the Project.

The Project is expected to generate 638 vehicle trips (inbound and outbound) on a typical weekday, including 50 vehicle trips (14 inbound and 36 outbound) during the AM peak hour; and 59 vehicle trips (35 inbound and 24 outbound) during the PM peak hour, as shown in **Table 6**.

Table 6. Project Vehicle Trips – Trip Generation

	Inbound	Outbound	Total
Daily	319	319	638
AM Peak Hour	14	36	50
PM Peak Hour	35	24	59

Source: CHS Consulting, 2020.

3.1.2 Trip Distribution and Assignment

The vehicle trips generated by the Project were distributed to local and regional origin- and destination-roadways based on existing traffic patterns. The trip distribution is presented in **Table 7**. The AM and PM peak hour trip distributions and assignments at the study intersections for the Project are shown on **Figure 7**. The AM and PM peak hour traffic volumes at the study intersections for the Existing with Project condition is presented on **Figure 8**.

Table 7. Project Vehicle Trip Distribution

Route/Roadway	To/From North	To/From South	Total
I-280	49%	25%	74%
U.S. 101	10%	10%	20%
El Camino Real	3%	3%	6%
Total	62%	38%	100%

Source: CHS Consulting, 2019.

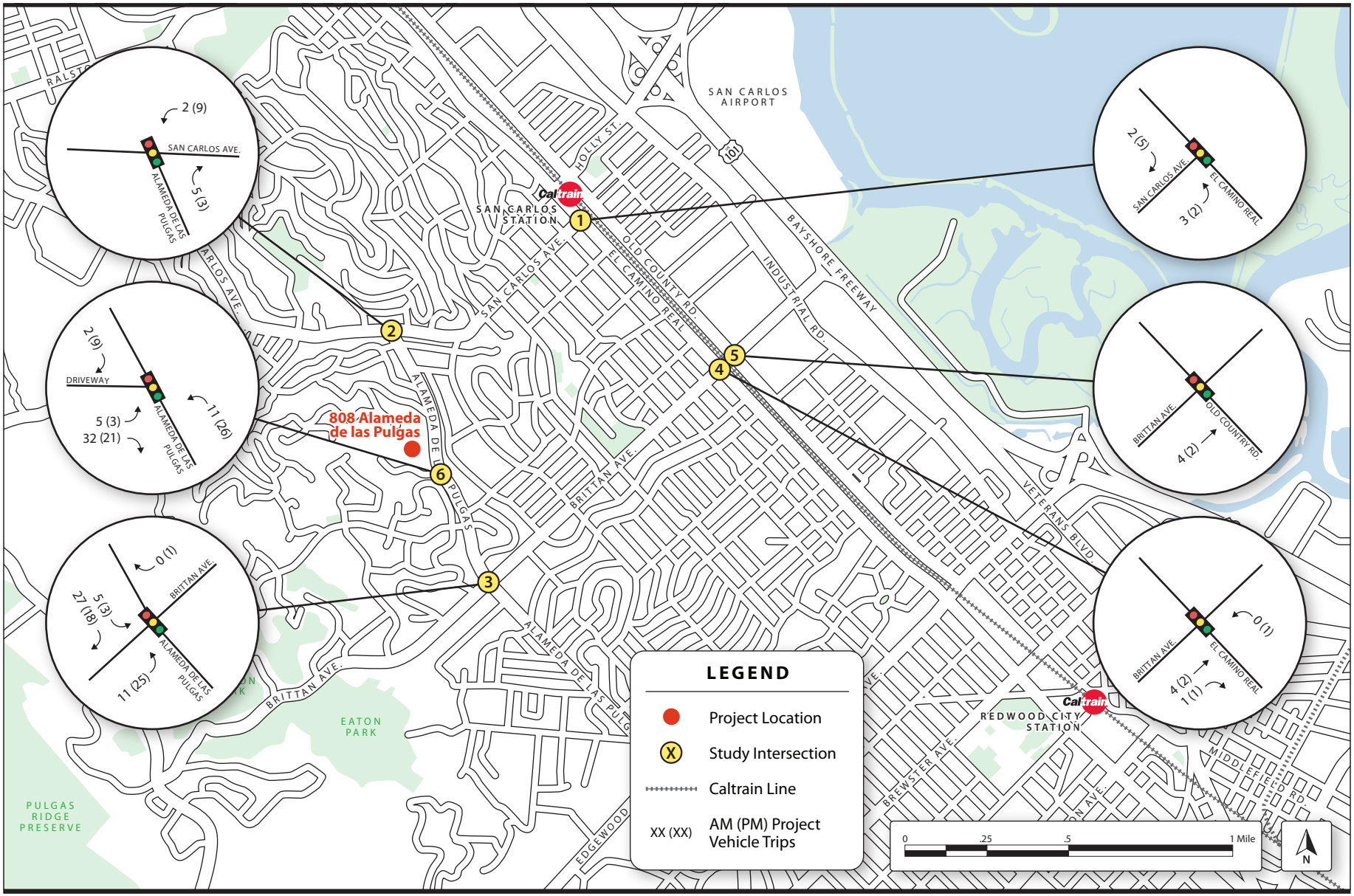

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Figure 7
Peak Hour Project Trips

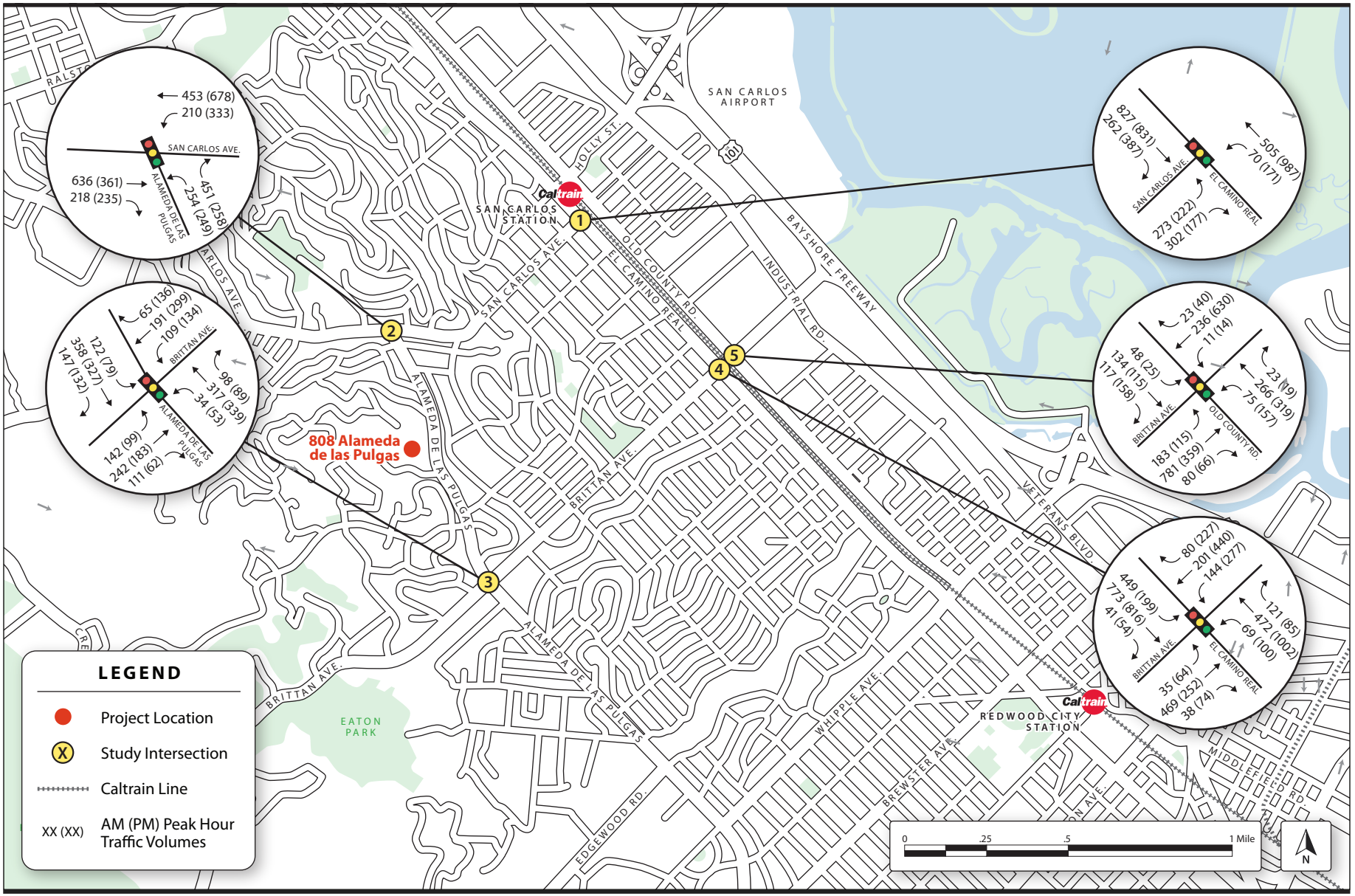

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Figure 8
Existing With Project Peak Hour Traffic Volumes

3.2 Project Traffic Operations

3.2.1 Intersection Levels of Service

The results of the intersection level of service analysis under Existing plus Project conditions are summarized in **Table 8**. The results show that all study intersections would continue to operate at acceptable levels (not to exceed a V/C of 0.85) during both the AM and PM peak hours under Existing plus Project conditions. The intersection LOS calculations for existing plus project conditions are included in **Appendix B**.

Table 8. Existing plus Project Intersection LOS

Intersection	Existing				Existing plus Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	Delay	LOS	V/C	LOS	Delay	LOS
El Camino Real / San Carlos Avenue	0.505	A	0.491	A	0.505	A	0.491	A
Alameda De Las Pulgas / San Carlos Avenue	0.812	D	0.595	A	0.817	D	0.602	B
Alameda De Las Pulgas / Brittan Avenue	0.625	B	0.685	B	0.635	B	0.704	C
El Camino Real / Brittan Avenue	0.588	A	0.687	B	0.590	A	0.687	B
Old County Road / Brittan Avenue	0.507	A	0.494	A	0.507	A	0.494	A

Source: CHS Consulting Group, 2020.

3.2.2 Queueing at Signalized Intersections

The result 95th percentile queue lengths at intersections was analyzed in order to evaluate the adequacy of left-turn storage lanes for the signalized intersections at which left-turning Project trips would be added. These results are summarized in Table 9. Issues related to left-turn storage and left-turn queues occur with existing conditions for the intersection of Alameda de las Pulgas and San Carlos Avenue westbound left turns; for the intersection of Alameda de las Pulgas at Brittan Avenue eastbound left turns; and for the intersection of Alameda de las Pulgas at Brittan Avenue southbound left turns; in both the AM and PM peak hours. The Issues related to left-turn storage and left-turn queues for the intersection of Alameda de las Pulgas and San Carlos Avenue westbound left turns; for the intersection of Alameda de las Pulgas at Brittan Avenue eastbound left turns; and for the intersection of Alameda de las Pulgas at Brittan Avenue southbound left turns; would become slightly worse For Existing Plus Project conditions, compared to Existing conditions, for both the AM and PM peak hours, respectively.

Table 9. Maximum Left-Turn Queues and Left-Turn Storage

Intersection	Available Storage (feet)	95th Percentile Queues			
		AM Peak Hour		PM Peak Hour	
		Existing	Existing +Project	Existing	Existing+ Project
El Camino Real / San Carlos Avenue Eastbound approach	285	146	148	125	127
Alameda De Las Pulgas / San Carlos Avenue Westbound approach	185	**250**	**252**	**368**	**375**
Alameda De Las Pulgas / Brittan Avenue Eastbound approach	197	**362**	**369**	**223**	**249**
Alameda De Las Pulgas / Brittan Avenue Southbound approach	100	**163**	**168**	**118**	**122**
El Camino Real / Brittan Avenue Northbound approach	230	112	112	166	168

Source: CHS Consulting Group, 2019.

3.2.3 Daily Traffic Volumes

The Project is expected to generate 638 vehicle trips (319 inbound and 319 outbound) on a typical weekday, of which 278 outbound trips and 246 inbound trips would be distributed on to Alameda De Las Pulgas south of the project access road. The existing daily traffic volumes collected on Alameda De Las Pulgas was 10,222, consequently the daily traffic volumes would be 10,746 (a five percent increase) on Alameda De Las Pulgas under Existing Plus Project conditions.

3.3 Project Access and Circulation

3.3.1 Site Access

Access to the site would occur via a private road that intersects Alameda de las Pulgas. Based on the proposed site plan (presented previously on **Figure 2**), the private road intersection with Alameda de las Pulgas would be in approximately the same location as the existing intersection of Castor Road. However, the private road would be re-aligned so that it intersects Alameda de las Pulgas at close to a 90-degree angle. The intersection would be unsignalized with Rectangular Rapid Flashing Beacons[3]. There are crosswalks on the north and west legs of the intersection, and a southbound bus stop with widened sidewalk for shelter on the far side of intersection.

[3] Traffic Control Study for the 808 Alameda de las Pulgas Residential Development, W-Trans, 2020.

3.3.2 Emergency Vehicle Access

The street network serving the project area currently accommodates the movements of emergency vehicles that travel to the project site. In the event of an emergency, emergency vehicles can access the project site via Alameda de las Pulgas. In addition, there is an emergency vehicle access road connecting the Project to Coronado Avenue via a 30-feet-wide private easement within the Vista Del Grande Terraces development north of the Project.

3.3.3 Sight Distance

Sight distance is the length of roadway visible to a driver. A substantially clear line of sight should be maintained between the driver of a vehicle waiting on the minor road or a pedestrian on the crosswalk and the driver of an approaching vehicle.

Sight Distance Evaluation

Methodology

A driveway sight distance analysis was performed at the access driveway to the Project based on the current Caltrans Highway Design Manual (HDM) Section 405.1 guidelines for measuring sight distance. Stopping sight distance was the analysis metric used at the driveway intersection for the Project. Results from the existing sight distance analysis are shown in **Figure 9**. The minimum required driveway sight distance triangles for drivers and for pedestrians are shown in yellow and orange, respectively.

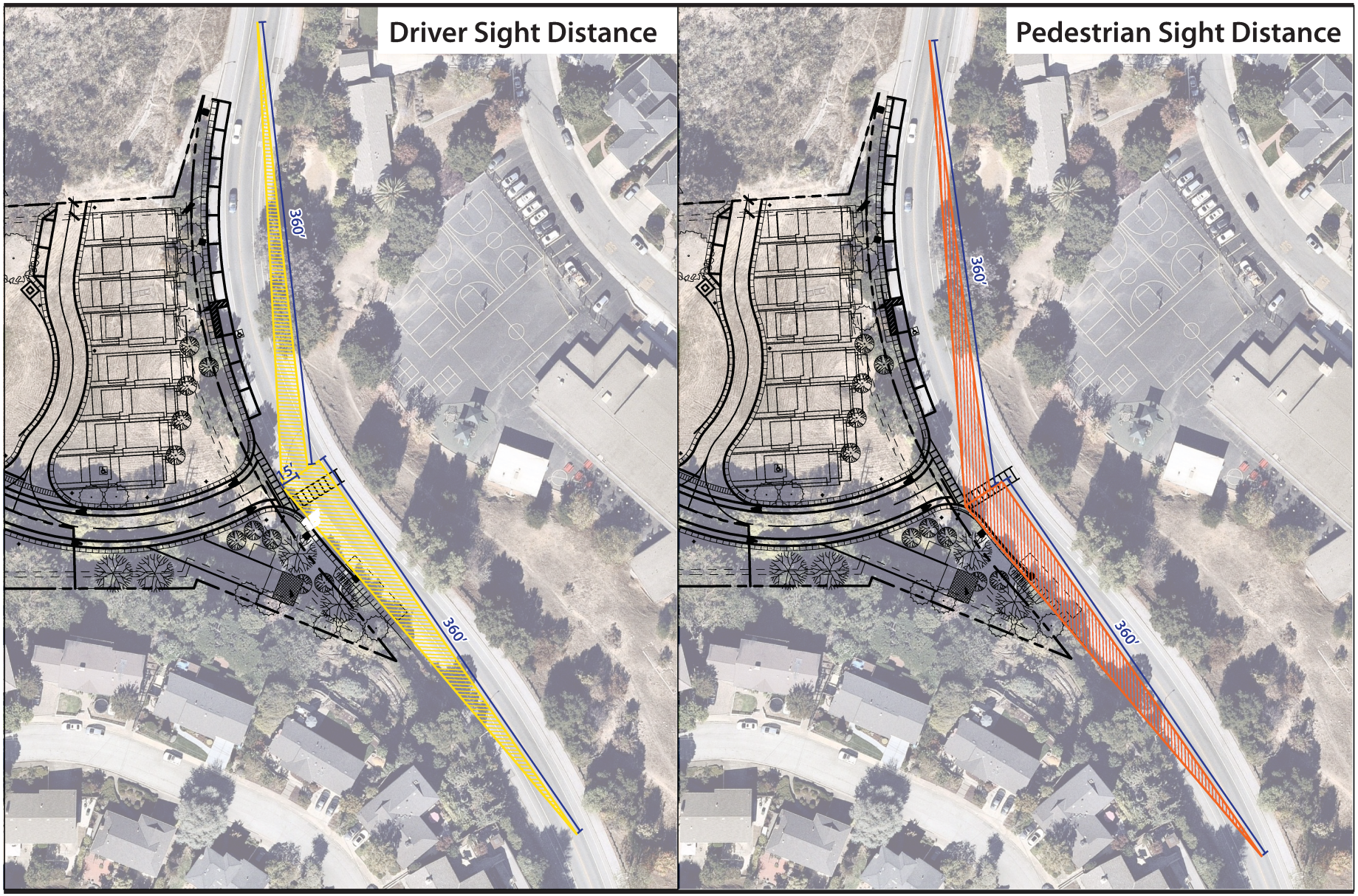
Based on the conceptual design plan prepared by the Project applicant (dated September 13, 2019), sight distance triangles of the proposed Project access road at the intersection of Alameda de las Pulgas are shown on **Figure 9**. Within the vicinity of the proposed project driveway, a 360' stopping sight distance is shown for motorized vehicles, assuming that vehicles are travelling at 45 mph, which was calculated from a speed survey in **Appendix C**, and a 360' stopping sight distance is shown for vehicles, relative to a pedestrian on the sidewalk in front of the pedestrian crosswalk. The stopping sight distance triangles, based on tables in the Caltrans Highway Design Manual Section 405.1(2)(a), are shown for the Project access road intersecting a public roadway.

Results

Since the Project access road is not part of the existing conditions, the sight distance triangles indicate the areas that will need to be clear in order to maintain adequate sight distance. The current line of sight from the Project access road driveway, looking to the north is limited due to vegetation 100 feet north of the project driveway on the east side of Alameda de las Pulgas. Consequently, sight distance for the southbound traffic along Alameda de las Pulgas could be obstructed by the existing vegetation. Stopping sight distance for northbound traffic appears to be adequate.

Mitigation Measures

The location and layout of the Project driveway as well as the pedestrian crosswalk crossing Alameda de las Pulgas shall be re-designed to establish adequate sight distance in each direction for both drivers and pedestrians.



808 Alameda de las Pulgas

Figure 9
Sight Distance

chs Consulting Group

3.3.4 Site circulation

Within the project site, circulation is maintained via a 22-foot two-way roadway with sidewalks on at least one side of the road throughout the site. The roadway within the Project site was previously presented on **Figure 2**. The site circulation consists primarily of a single curved roadway. Additionally, there are recreational trails within the project site.

3.4 Alternative Modes

3.4.1 Pedestrian Facilities

Pedestrian facilities consist of sidewalks located on both sides of the streets in the vicinity of the Project except for a few locations described in section 2.4 above. Protected crossings with crosswalks and pedestrian phases are provided at all five (5) study intersections. The on-site pedestrian network would seamlessly connect to the public sidewalk on Alameda de las Pulgas at the project roadway entrance. Two crosswalks and Rectangular Rapid Flashing Beacons would be provided at the intersection (the project would fund but not construct them). There would be sidewalks on at least one side of the road throughout the site and recreational trails would be provided. Therefore, the pedestrian facilities directly serving the project site would be adequate.

3.4.2 Bicycle Facilities

Bicycle facilities including Class I bike trails, Class II bike lanes, and Class III bike paths are presented in the vicinity of the project site, which provide accessibility from the Project to major attractions like Downtown San Carlos and the San Carlos Caltrain Station. In addition, the garage spaces could be used as bicycle storage for each unit within the project site. Therefore, the bicycle facilities serving the project site would be adequate.

3.4.3 Transit Facilities

SamTrans Route 61 provides service connecting local destinations in San Carlos, and provides transfer connections to the San Carlos Caltrain Station which connects to regional destinations. Existing transit facilities are adequate to accommodate project-generated transit trips, and existing bus stops are within an acceptable walking distance of the site. The project applicant also proposed to construct one northbound and one southbound transit stop near the project entrance where Route 61 can stop during the AM and PM school peak periods. Southbound bus stop would be located on the far side of the entrance intersection with widened sidewalk and shelter as shown in **Figure 2**. Therefore, the transit facilities serving the project site would be adequate.

4.0 Full Connectivity Option

There are no approved or pending developments within quarter miles of the Project (approved or pending developments over quarter miles from the Project are mostly near San Carlos Avenue east of Alameda de las Pulgas, and would not generate traffic near the Project); however, the Vista del Grande site which is adjacent to the project site could potentially be developed in the future. For the purpose of completing a conservative analysis, a Full Connectivity Option was analyzed, which includes the hypothetical scenario of development of the Vista del Grande site in addition to the Project and is described in this section. The land use type, trip generation rates, and trip distribution patterns are assumed to be the same as for the Project. The maximum allowable density (6 units per acre) was assumed for this 12.3-acre site. Consequently, the analysis assumed it would accommodate 73 units.

The Vista del Grande site, if developed, could generate 535 vehicle trips (inbound and outbound) on a typical weekday, including 33 vehicle trips (eight inbound and 26 outbound) during the AM peak hour and 41 vehicle trips (26 inbound and 15 outbound) during the PM peak hour. The connectivity and access for the Vista del Grande is unknown, however, for the purposes of making a conservative assumption, the Vista del Grande site access was assumed to connect to Alameda De Las Pulgas, and the trip distribution assumptions are identical as previously presented in **Table 7**.

The study intersections for the Project were evaluated from a LOS perspective under this Full Connectivity option. The intersection LOS was evaluated using the *TRB Circular 212* methodology. The results show that all study intersections would continue to operate at acceptable levels (not exceeding a V/C of 0.85) during both the AM and PM peak hours under the Full Connectivity option, as presented in **Table 10**. Therefore, there would be no deficient intersections with the Full Connectivity Option. The intersection LOS calculations are included in **Appendix B**.

Table 10. Full Connectivity Option - Intersection LOS

Intersection	Existing				Full Connectivity Option			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	V/C	LOS	Delay	LOS	V/C	LOS	Delay	LOS
El Camino Real / San Carlos Avenue	0.505	A	0.491	A	0.505	A	0.491	A
Alameda De Las Pulgas / San Carlos Avenue	0.812	D	0.595	A	0.820	D	0.608	B
Alameda De Las Pulgas / Brittan Avenue	0.625	B	0.685	B	0.641	B	0.720	C
El Camino Real / Brittan Avenue	0.588	A	0.687	B	0.591	A	0.687	B
Old County Road / Brittan Avenue	0.507	A	0.494	A	0.509	A	0.494	A

Source: CHS Consulting Group, 2020.

5.0 Vehicle Miles Traveled Impact Analysis

In response to Senate Bill 743 (SB 743), the Office of Planning and Research (OPR) has updated the California Environmental Quality Act (CEQA) guidelines to include new transportation-related evaluation metrics, including Vehicle Miles Traveled (VMT). In keeping with the new requirements, the City of San Carlos adopted VMT as a measure of project impacts by council resolution (2020-066, October 28th, 2020).

5.1 Vehicle Miles Traveled Impact Threshold

According to the City of San Carlos' guidelines, the City's adopted VMT threshold is 15 percent below the existing citywide average VMT per service population. A project is considered to have a significant impact if the project VMT is expected to exceed 15 percent below the existing average VMT per service population.

The baseline citywide average VMT per service population is 27.6, and hence the adopted VMT threshold is 23.5.

5.2 Project Vehicle Miles Traveled

For consistency with City policy, the Project VMT was calculated using the average VMT per service population. "Service population" includes both residents and employees, and allows for an overall understanding of how the project would impact citywide VMT rates. VMT was calculated based on data from the current C/CAG[4] VTA travel demand model[5]. Figure 1 summarizes the existing VMT for the Project Travel Analysis Zone (TAZ). It shows that the project would generate 21.2 VMT.

Table 11. Vehicle Miles Traveled in Project TAZ

Metric	Per Service Population
Total VMT	73,198
Population	3,460
Project VMT per service Population	21.2

5.3 VMT Mitigation: Transportation Demand Management Plan

The City of San Carlos requires development projects to include a transportation demand management (TDM) plan to reduce project trip generation by 20% to mitigate impacts on congestion on local roadways.

[4] The City/County Association of Governments of San Mateo County

[5] Kittelson & Associates, October 15, 2021.

The TDM plan provides residents with more transportation options, thereby reducing the number of vehicle trips generated.

The Project TDM plan[6] provides a trip reduction of 9.1% (equivalent to a VMT reduction of 15.5%), which is reasonable for a low-density residential project in a suburban location. The TDM plan includes a range of strategies well suited to the project and location:

- Land use and context:
  - Development density
  - Schools, parks, and amenities within walking distance
  - Pedestrian connections
  - Traffic calming street design within the project
- Trip reduction strategies:
  - Bicycle storage
  - A new bus stop adjacent to the project entrance on Alameda de las Pulgas
  - Subsidized transit passes
  - On-site transportation coordinator, providing information about transit routes and schedules, carpooling, vanpooling, bike routes, and more.
  - Ridesharing program to facilitate carpooling.

5.4 Significance Finding

The VMT per service population in the Project's TAZ is 21.2. The Project's TDM plan estimates a VMT reduction of 15.5%, which would result in a mitigated VMT of 17.9. This is below the adopted VMT threshold; hence the project would have a less than significant VMT impact.

Table 12. Project VMT per Service Population vs. Threshold

VMT Metric	Baseline VMT (Citywide Average)	Threshold (15% below baseline)	Project VMT		
			Base Unadjusted (TAZ 2006)	With TDM Reduction (15.5%)	Significance Finding
VMT per Service Population	24.1[7]	20.5	21.2	17.9	Less than significant impact

[6] 808 Alameda de las Pulgas Transportation Demand Management Plan, W-Trans,

[7] 2019 CCAG Model, Kittelson & Assoc, Inc., 2021

6.0 Conclusions

The potential transportation impacts of the Project were evaluated in accordance with the standards established by the *City of San Carlos 2030 General Plan*. The traffic analysis is based on the AM and PM peak hour levels of service for five study intersections. The traffic analysis also included an evaluation of potential impacts to bicycle, pedestrian and transit facilities and a review of site access, sight distance, and site circulation.

6.1 Project Travel Demand

The Project is expected to generate 638 vehicle trips (inbound and outbound) on a typical weekday, including 50 vehicle trips (14 inbound and 36 outbound) during the AM peak hour and 59 vehicle trips (35 inbound and 24 outbound) during the PM peak hour.

6.2 Project Intersection LOS

Under Exiting plus Project Conditions, the results of the level of service calculations show that all study intersections would continue to operate at acceptable levels during both the AM and PM peak hours, therefore, the Project is not expected to cause a significant impact for any of the study intersections. Because the Project does not cause a significant impact, no mitigation is required.

6.3 Project Access and Circulation

The Project provides adequate facilities for site access and circulation. In the event of an emergency, emergency vehicles can access the project site via Alameda de las Pulgas. In addition, there is an emergency vehicle access road connecting the Project to Coronado Avenue via a 30-feet-wide private easement within the Vista Del Grande Terraces development north of the Project.

Sight distance at the Project private access road looking to the south meets the recommended minimum distance. The sight distance for the Project looking to the north may be obstructed due to existing vegetation 100 feet north of the Project on the east side of Alameda de las Pulgas. A mitigation measure of redesigning the Project private access road entrance is required to ensure adequate sight distance.

6.4 Alternative Modes

The analysis concluded that the pedestrian, bicycle, and transit facilities would be adequate for project-generated trips.

6.5 Full Connectivity Option

Under the Full Connectivity Option scenario, the results of the level of service calculations show that all study intersections would continue to operate at acceptable levels of service during both the AM and PM

peak hours, therefore the Project is not expected to result in unacceptable levels of service during either the AM or PM peak hours at any of the study intersections under the Full Connectivity Option scenario.

6.6 Vehicle Miles Traveled

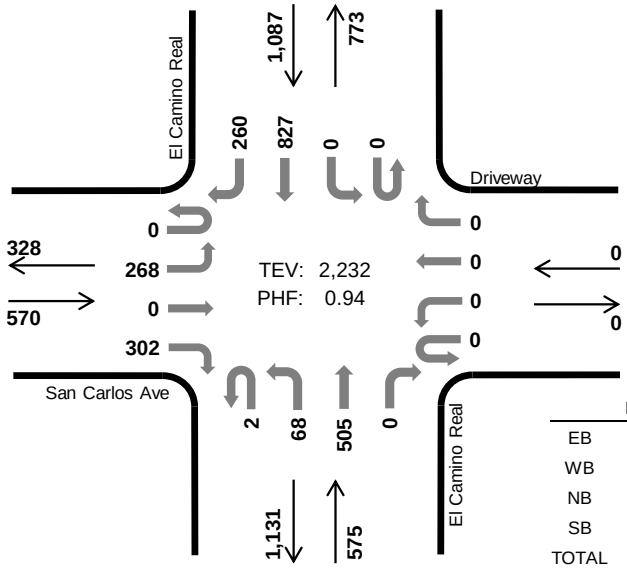
The analysis concluded that the Project would have a less than significant VMT impact, both with and without the planned TDM plan.

Appendix A
Traffic Counts

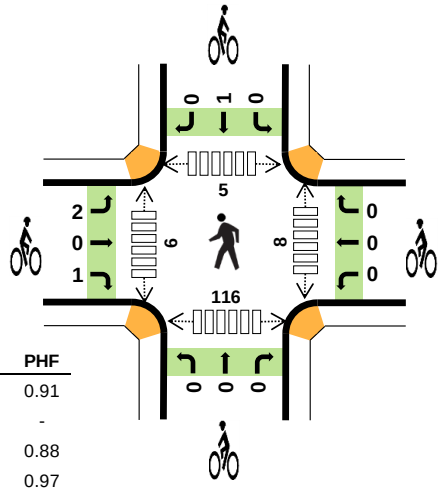
El Camino Real
San Carlos Ave

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	1.6%	0.91
WB	-	-
NB	4.7%	0.88
SB	4.0%	0.97
TOTAL	3.6%	0.94



Two-Hour Count Summaries

Interval Start		San Carlos Ave Eastbound				Driveway Westbound				El Camino Real Northbound				El Camino Real Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	35	0	26	0	0	0	0	0	9	96	0	0	0	116	45	327	0
7:15 AM		0	55	0	37	0	0	0	0	0	10	84	0	0	0	183	40	409	0
7:30 AM		0	64	0	62	0	0	0	0	0	15	125	0	0	0	169	37	472	0
7:45 AM		0	60	0	52	0	0	0	0	0	15	110	0	0	0	179	64	480	1,688
8:00 AM		**0**	**68**	**0**	**66**	**0**	**0**	**0**	**0**	**1**	**19**	**143**	**0**	**0**	**0**	**198**	**80**	**575**	1,936
8:15 AM		**0**	**80**	**0**	**77**	**0**	**0**	**0**	**0**	**1**	**13**	**124**	**0**	**0**	**0**	**204**	**68**	**567**	2,094
8:30 AM		**0**	**63**	**0**	**87**	**0**	**0**	**0**	**0**	**0**	**27**	**136**	**0**	**0**	**0**	**224**	**57**	**594**	2,216
8:45 AM		**0**	**57**	**0**	**72**	**0**	**0**	**0**	**0**	**0**	**9**	**102**	**0**	**0**	**0**	**201**	**55**	**496**	**2,232**
Count Total		0	482	0	479	0	0	0	0	2	117	920	0	0	0	1,474	446	3,920	0
Peak Hour	**All**	**0**	**268**	**0**	**302**	**0**	**0**	**0**	**0**	**2**	**68**	**505**	**0**	**0**	**0**	**827**	**260**	**2,232**	**0**
	HV	**0**	**4**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**4**	**23**	**0**	**0**	**0**	**34**	**10**	**80**	**0**
	HV%	**-**	**1%**	**-**	**2%**	**-**	**-**	**-**	**-**	**0%**	**6%**	**5%**	**-**	**-**	**-**	**4%**	**4%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	0	12	13	*25*	1	0	0	0	*1*	11	1	8	20	*40*
7:15 AM	3	0	5	7	*15*	1	0	0	0	*1*	9	2	3	47	*61*
7:30 AM	2	0	11	15	*28*	0	0	0	0	*0*	5	4	1	24	*34*
7:45 AM	0	0	6	10	*16*	2	0	0	1	*3*	3	1	1	16	*21*
8:00 AM	**1**	**0**	**7**	**6**	***14***	**1**	**0**	**0**	**0**	***1***	**4**	**0**	**2**	**32**	*38*
8:15 AM	**0**	**0**	**7**	**14**	***21***	**2**	**0**	**0**	**0**	***2***	**3**	**3**	**2**	**32**	*40*
8:30 AM	**5**	**0**	**9**	**16**	***30***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**25**	*27*
8:45 AM	**3**	**0**	**4**	**8**	***15***	**0**	**0**	**0**	**1**	***1***	**1**	**1**	**1**	**27**	***30***
Count Total	14	0	61	89	*164*	7	0	0	2	*9*	36	14	18	223	*291*
Peak Hour	**9**	**0**	**27**	**44**	***80***	**3**	**0**	**0**	**1**	***4***	**8**	**6**	**5**	**116**	***135***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Carlos Ave				Driveway				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	1	11	0	0	0	10	3	25	0
7:15 AM	0	2	0	1	0	0	0	0	0	1	4	0	0	0	6	1	15	0
7:30 AM	0	1	0	1	0	0	0	0	0	3	8	0	0	0	13	2	28	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	9	1	16	84
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**3**	**3**	**14**	73
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**11**	**3**	**21**	79
8:30 AM	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**2**	**7**	**0**	**0**	**0**	**13**	**3**	**30**	81
8:45 AM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**7**	**1**	**15**	**80**
Count Total	0	7	0	7	0	0	0	0	0	9	52	0	0	0	72	17	164	0
Peak Hour	**0**	**4**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**4**	**23**	**0**	**0**	**0**	**34**	**10**	**80**	**0**

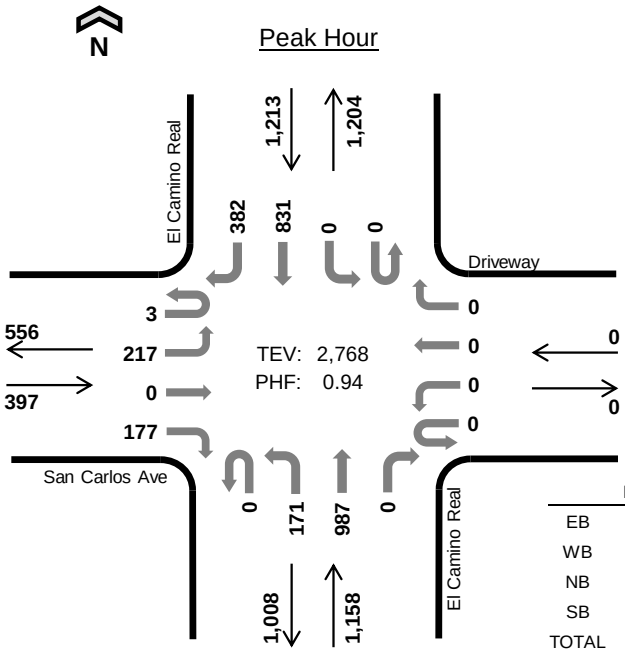
Two-Hour Count Summaries - Bikes

Interval Start	San Carlos Ave			Driveway			El Camino Real			El Camino Real			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	2	0	0	0	0	0	0	0	1	0	3	5
8:00 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
8:15 AM	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	6
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	6
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**4**
Count Total	3	0	4	0	0	0	0	0	0	0	2	0	9	0
Peak Hour	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**4**	**0**

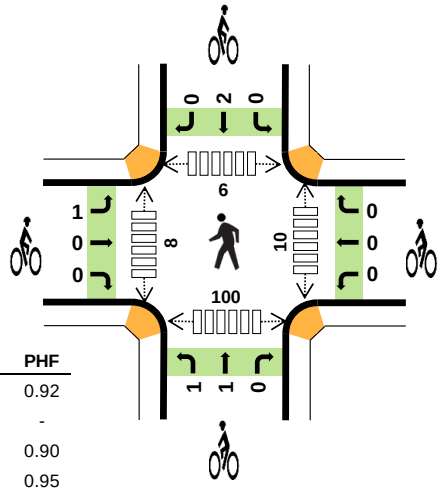
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

El Camino Real
San Carlos Ave

Date: 05-14-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	1.8%	0.92
WB	-	-
NB	1.6%	0.90
SB	1.1%	0.95
TOTAL	1.4%	0.94



Two-Hour Count Summaries

Interval Start		San Carlos Ave Eastbound				Driveway Westbound				El Camino Real Northbound				El Camino Real Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	65	0	56	0	0	0	0	0	27	208	0	0	0	206	75	637	0
4:15 PM		0	60	0	38	0	0	0	0	0	32	190	0	0	0	210	69	599	0
4:30 PM		0	67	0	31	0	0	0	0	0	32	228	0	0	0	209	81	648	0
4:45 PM		**0**	**59**	**0**	**39**	**0**	**0**	**0**	**0**	**0**	**32**	**213**	**0**	**0**	**0**	**223**	**86**	**652**	2,536
5:00 PM		**1**	**50**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**38**	**247**	**0**	**0**	**0**	**193**	**90**	**659**	2,558
5:15 PM		**0**	**53**	**0**	**55**	**0**	**0**	**0**	**0**	**0**	**42**	**264**	**0**	**0**	**0**	**211**	**109**	**734**	2,693
5:30 PM		**2**	**55**	**0**	**43**	**0**	**0**	**0**	**0**	**0**	**59**	**263**	**0**	**0**	**0**	**204**	**97**	**723**	**2,768**
5:45 PM		1	50	0	29	0	0	0	0	2	43	202	0	0	0	176	109	612	2,728
Count Total		4	459	0	331	0	0	0	0	2	305	1,815	0	0	0	1,632	716	5,264	0
Peak Hour	**All**	**3**	**217**	**0**	**177**	**0**	**0**	**0**	**0**	**0**	**171**	**987**	**0**	**0**	**0**	**831**	**382**	**2,768**	**0**
	HV	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**3**	**16**	**0**	**0**	**0**	**11**	**2**	**39**	**0**
	HV%	**0%**	**1%**	**-**	**3%**	**-**	**-**	**-**	**-**	**-**	**2%**	**2%**	**-**	**-**	**-**	**1%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	0	4	6	*11*	0	0	0	0	*0*	2	4	0	20	*26*
4:15 PM	3	0	8	1	*12*	0	0	0	1	*1*	1	2	0	25	*28*
4:30 PM	1	0	7	2	*10*	0	0	0	0	*0*	4	1	1	16	*22*
4:45 PM	**3**	**0**	**3**	**2**	***8***	**0**	**0**	**0**	**1**	***1***	**4**	**1**	**0**	**21**	*26*
5:00 PM	**0**	**0**	**6**	**4**	***10***	**0**	**0**	**2**	**0**	***2***	**1**	**1**	**5**	**40**	*47*
5:15 PM	**3**	**0**	**4**	**6**	***13***	**1**	**0**	**0**	**0**	***1***	**5**	**5**	**1**	**23**	*34*
5:30 PM	**1**	**0**	**6**	**1**	***8***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**16**	***17***
5:45 PM	1	0	2	1	*4*	0	0	0	0	*0*	3	4	2	17	*26*
Count Total	13	0	40	23	*76*	1	0	2	3	*6*	20	19	9	178	*226*
Peak Hour	**7**	**0**	**19**	**13**	***39***	**1**	**0**	**2**	**2**	***5***	**10**	**8**	**6**	**100**	***124***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Carlos Ave				Driveway				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	6	0	11	0
4:15 PM	0	2	0	1	0	0	0	0	0	1	7	0	0	0	1	0	12	0
4:30 PM	0	0	0	1	0	0	0	0	0	1	6	0	0	0	2	0	10	0
4:45 PM	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**2**	**0**	**8**	41
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**4**	**0**	**10**	40
5:15 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**4**	**2**	**13**	41
5:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**4**	**0**	**0**	**0**	**1**	**0**	**8**	**39**
5:45 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	4	35
Count Total	0	4	0	9	0	0	0	0	0	5	35	0	0	0	21	2	76	0
Peak Hour	**0**	**2**	**0**	**5**	**0**	**0**	**0**	**0**	**0**	**3**	**16**	**0**	**0**	**0**	**11**	**2**	**39**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	San Carlos Ave			Driveway			El Camino Real			El Camino Real			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**	4
5:15 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**5**
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	1	0	0	0	0	0	1	1	0	0	2	1	6	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**5**	**0**

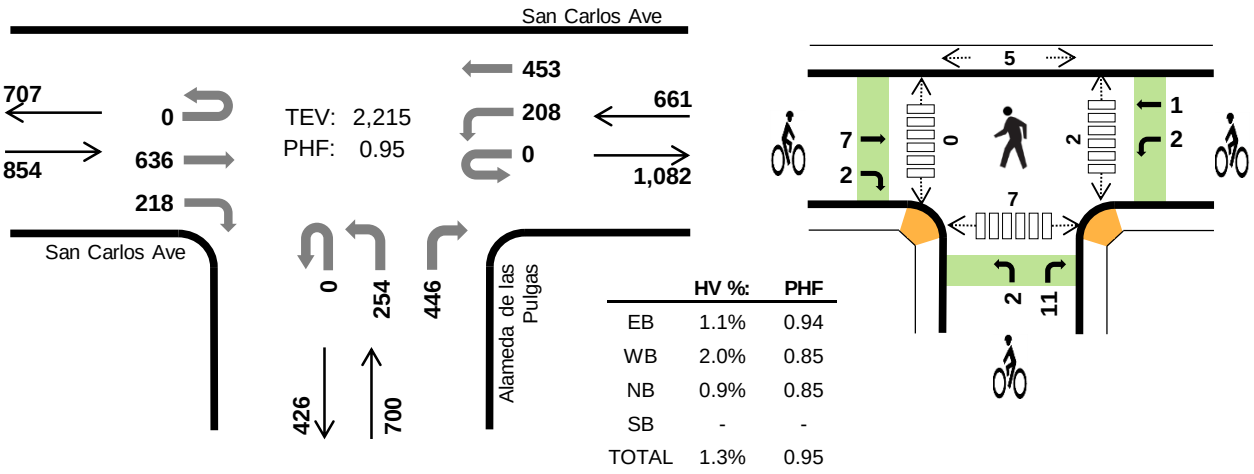
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Alameda de las Pulgas
San Carlos Ave

N

Peak Hour

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM



	HV %:	PHF
EB	1.1%	0.94
WB	2.0%	0.85
NB	0.9%	0.85
SB	-	-
TOTAL	1.3%	0.95

Two-Hour Count Summaries

Interval Start		San Carlos Ave Eastbound				San Carlos Ave Westbound				Alameda de las Pulgas Northbound				n/a Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	67	21	0	19	47	0	0	20	0	37	0	0	0	0	211	0
7:15 AM		0	0	76	28	0	28	60	0	0	50	0	55	0	0	0	0	297	0
7:30 AM		0	0	125	35	0	39	87	0	0	64	0	63	0	0	0	0	413	0
7:45 AM		**0**	**0**	**145**	**53**	**0**	**54**	**106**	**0**	**0**	**74**	**0**	**83**	**0**	**0**	**0**	**0**	**515**	1,436
8:00 AM		**0**	**0**	**149**	**53**	**0**	**54**	**141**	**0**	**0**	**81**	**0**	**92**	**0**	**0**	**0**	**0**	**570**	1,795
8:15 AM		**0**	**0**	**169**	**59**	**0**	**41**	**111**	**0**	**0**	**58**	**0**	**147**	**0**	**0**	**0**	**0**	**585**	2,083
8:30 AM		**0**	**0**	**173**	**53**	**0**	**59**	**95**	**0**	**0**	**41**	**0**	**124**	**0**	**0**	**0**	**0**	**545**	**2,215**
8:45 AM		0	0	153	50	0	55	71	0	0	31	0	107	0	0	0	0	467	2,167
Count Total		0	0	1,057	352	0	349	718	0	0	419	0	708	0	0	0	0	3,603	0
Peak Hour	**All**	**0**	**0**	**636**	**218**	**0**	**208**	**453**	**0**	**0**	**254**	**0**	**446**	**0**	**0**	**0**	**0**	**2,215**	**0**
	HV	**0**	**0**	**7**	**2**	**0**	**2**	**11**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**28**	**0**
	HV%	**-**	**-**	**1%**	**1%**	**-**	**1%**	**2%**	**-**	**-**	**1%**	**-**	**1%**	**-**	**-**	**-**	**-**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	2	0	0	*3*	4	0	1	0	*5*	0	0	1	0	*1*
7:15 AM	2	2	1	0	*5*	3	0	3	0	*6*	1	0	1	1	*3*
7:30 AM	2	3	1	0	*6*	2	0	2	0	*4*	1	0	0	3	*4*
7:45 AM	**2**	**4**	**2**	**0**	***8***	**4**	**1**	**1**	**0**	***6***	**1**	**0**	**1**	**3**	*5*
8:00 AM	**3**	**4**	**1**	**0**	***8***	**2**	**1**	**4**	**0**	***7***	**0**	**0**	**0**	**1**	*1*
8:15 AM	**0**	**1**	**1**	**0**	***2***	**2**	**1**	**5**	**0**	***8***	**0**	**0**	**3**	**1**	*4*
8:30 AM	**4**	**4**	**2**	**0**	***10***	**1**	**0**	**3**	**0**	***4***	**1**	**0**	**1**	**2**	***4***
8:45 AM	2	4	1	0	*7*	0	0	2	0	*2*	0	0	1	0	*1*
Count Total	16	24	9	0	*49*	18	3	21	0	*42*	4	0	8	11	*23*
Peak Hr	**9**	**13**	**6**	**0**	***28***	**9**	**3**	**13**	**0**	***25***	**2**	**0**	**5**	**7**	***14***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	3	0
7:15 AM	0	0	1	1	0	1	1	0	0	0	0	1	0	0	0	0	5	0
7:30 AM	0	0	0	2	0	2	1	0	0	1	0	0	0	0	0	0	6	0
7:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**4**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**8**	22
8:00 AM	**0**	**0**	**2**	**1**	**0**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	27
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	24
8:30 AM	**0**	**0**	**3**	**1**	**0**	**1**	**3**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**10**	**28**
8:45 AM	0	0	0	2	0	2	2	0	0	0	0	1	0	0	0	0	7	27
Count Total	0	0	8	8	0	8	16	0	0	4	0	5	0	0	0	0	49	0
Peak Hour	**0**	**0**	**7**	**2**	**0**	**2**	**11**	**0**	**0**	**3**	**0**	**3**	**0**	**0**	**0**	**0**	**28**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	San Carlos Ave			San Carlos Ave			Alameda de las Pulgas			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	2	2	0	0	0	1	0	0	0	0	0	5	0
7:15 AM	0	3	0	0	0	0	1	0	2	0	0	0	6	0
7:30 AM	0	1	1	0	0	0	1	0	1	0	0	0	4	0
7:45 AM	**0**	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**6**	21
8:00 AM	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**7**	23
8:15 AM	**0**	**2**	**0**	**0**	**1**	**0**	**1**	**0**	**4**	**0**	**0**	**0**	**8**	25
8:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**4**	**25**
8:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	2	21
Count Total	0	13	5	2	1	0	5	0	16	0	0	0	42	0
Peak Hour	**0**	**7**	**2**	**2**	**1**	**0**	**2**	**0**	**11**	**0**	**0**	**0**	**25**	**0**

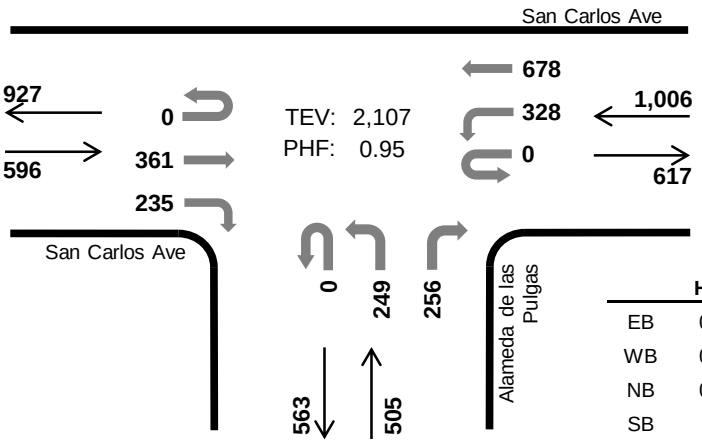
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Alameda de las Pulgas
San Carlos Ave

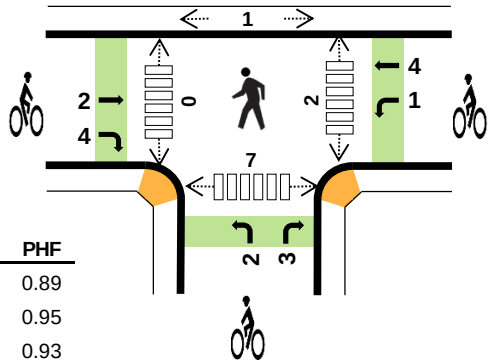
N

Peak Hour

Date: 05-14-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM



	HV %:	PHF
EB	0.5%	0.89
WB	0.5%	0.95
NB	0.2%	0.93
SB	-	-
TOTAL	0.4%	0.95



Two-Hour Count Summaries

Interval Start	San Carlos Ave Eastbound				San Carlos Ave Westbound				Alameda de las Pulgas Northbound				n/a Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	84	47	0	53	112	0	0	50	0	63	0	0	0	0	409	0
4:15 PM	0	0	103	47	0	56	117	0	0	41	0	56	0	0	0	0	420	0
4:30 PM	0	0	72	61	0	70	129	0	0	56	0	63	0	0	0	0	451	0
4:45 PM	**0**	**0**	**78**	**69**	**0**	**96**	**149**	**0**	**0**	**83**	**0**	**53**	**0**	**0**	**0**	**0**	**528**	1,808
5:00 PM	**0**	**0**	**106**	**62**	**0**	**85**	**171**	**0**	**0**	**54**	**0**	**74**	**0**	**0**	**0**	**0**	**552**	1,951
5:15 PM	**0**	**0**	**90**	**59**	**0**	**71**	**194**	**0**	**0**	**55**	**0**	**76**	**0**	**0**	**0**	**0**	**545**	2,076
5:30 PM	**0**	**0**	**87**	**45**	**0**	**76**	**164**	**0**	**0**	**57**	**0**	**53**	**0**	**0**	**0**	**0**	**482**	**2,107**
5:45 PM	0	0	91	59	0	85	175	0	0	46	0	51	0	0	0	0	507	2,086
Count Total	0	0	711	449	0	592	1,211	0	0	442	0	489	0	0	0	0	3,894	0
Peak Hour All	**0**	**0**	**361**	**235**	**0**	**328**	**678**	**0**	**0**	**249**	**0**	**256**	**0**	**0**	**0**	**0**	**2,107**	**0**
Peak Hour HV	**0**	**0**	**3**	**0**	**0**	**1**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**
Peak Hour HV%	**-**	**-**	**1%**	**0%**	**-**	**0%**	**1%**	**-**	**-**	**0%**	**-**	**0%**	**-**	**-**	**-**	**-**	**0%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	1	1	0	*3*	0	0	0	0	*0*	0	0	3	2	*5*
4:15 PM	6	3	0	0	*9*	0	0	0	0	*0*	1	0	2	3	*6*
4:30 PM	3	5	1	0	*9*	0	0	1	0	*1*	1	0	1	1	*3*
4:45 PM	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**2**	**0**	***2***	**0**	**0**	**0**	**1**	*1*
5:00 PM	**0**	**2**	**0**	**0**	***2***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
5:15 PM	**2**	**2**	**1**	**0**	***5***	**2**	**3**	**1**	**0**	***6***	**1**	**0**	**0**	**3**	*4*
5:30 PM	**1**	**0**	**0**	**0**	***1***	**4**	**1**	**2**	**0**	***7***	**1**	**0**	**1**	**2**	***4***
5:45 PM	1	2	0	0	*3*	2	3	1	0	*6*	1	0	2	3	*6*
Count Total	14	16	3	0	*33*	8	8	7	0	*23*	5	0	9	16	*30*
Peak Hr	**3**	**5**	**1**	**0**	***9***	**6**	**5**	**5**	**0**	***16***	**2**	**0**	**1**	**7**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	San Carlos Ave				San Carlos Ave				Alameda de las Pulgas				n/a				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	3	0
4:15 PM	0	0	6	0	0	1	2	0	0	0	0	0	0	0	0	0	9	0
4:30 PM	0	0	1	2	0	2	3	0	0	0	0	1	0	0	0	0	9	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	22
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	21
5:15 PM	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	17
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**9**
5:45 PM	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	3	11
Count Total	0	0	12	2	0	5	11	0	0	1	0	2	0	0	0	0	33	0
Peak Hour	**0**	**0**	**3**	**0**	**0**	**1**	**4**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**

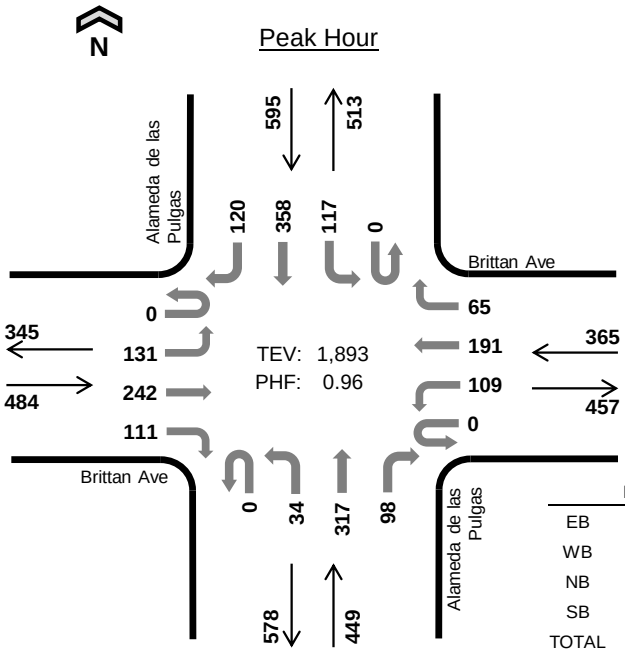
Two-Hour Count Summaries - Bikes

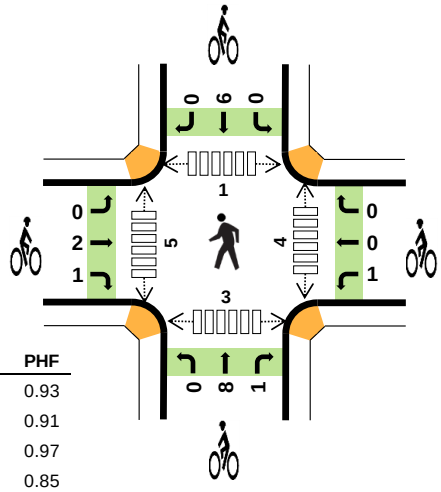
Interval Start	San Carlos Ave			San Carlos Ave			Alameda de las Pulgas			n/a			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	1	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**2**	3
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	4
5:15 PM	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**6**	10
5:30 PM	**0**	**2**	**2**	**0**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**7**	**16**
5:45 PM	0	1	1	0	3	0	0	0	1	0	0	0	6	20
Count Total	0	3	5	1	7	0	3	0	4	0	0	0	23	0
Peak Hour	**0**	**2**	**4**	**1**	**4**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**16**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Alameda de las Pulgas
Brittan Ave

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 7:45 AM to 8:45 AM





	HV %:	PHF
EB	0.4%	0.93
WB	1.9%	0.91
NB	0.4%	0.97
SB	0.8%	0.85
TOTAL	0.8%	0.96

Two-Hour Count Summaries

Interval Start		Brittan Ave Eastbound				Brittan Ave Westbound				Alameda de las Pulgas Northbound				Alameda de las Pulgas Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	11	45	7	0	14	25	5	0	1	24	20	0	16	35	8	211	0
7:15 AM		0	10	43	11	0	23	28	6	0	2	68	29	0	24	74	14	332	0
7:30 AM		0	14	48	16	0	24	36	17	0	2	72	26	0	22	53	21	351	0
7:45 AM		**0**	**36**	**66**	**24**	**0**	**39**	**43**	**15**	**0**	**9**	**83**	**19**	**0**	**23**	**64**	**31**	**452**	1,346
8:00 AM		**0**	**22**	**70**	**30**	**0**	**27**	**48**	**25**	**0**	**6**	**89**	**21**	**0**	**22**	**87**	**21**	**468**	1,603
8:15 AM		**0**	**43**	**58**	**29**	**0**	**18**	**48**	**11**	**0**	**7**	**74**	**31**	**0**	**34**	**101**	**37**	**491**	1,762
8:30 AM		**0**	**30**	**48**	**28**	**0**	**25**	**52**	**14**	**0**	**12**	**71**	**27**	**0**	**38**	**106**	**31**	**482**	**1,893**
8:45 AM		0	24	70	24	0	20	32	10	0	6	64	26	0	29	74	21	400	1,841
Count Total		0	190	448	169	0	190	312	103	0	45	545	199	0	208	594	184	3,187	0
Peak Hour	**All**	**0**	**131**	**242**	**111**	**0**	**109**	**191**	**65**	**0**	**34**	**317**	**98**	**0**	**117**	**358**	**120**	**1,893**	**0**
	HV	**0**	**0**	**2**	**0**	**0**	**1**	**4**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**3**	**2**	**16**	**0**
	HV%	**-**	**0%**	**1%**	**0%**	**-**	**1%**	**2%**	**3%**	**-**	**3%**	**0%**	**1%**	**-**	**0%**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	0	0	*1*	1	0	0	4	*5*	2	3	3	1	*9*
7:15 AM	0	2	1	3	*6*	1	0	1	1	*3*	0	1	1	0	*2*
7:30 AM	0	2	4	3	*9*	1	0	1	2	*4*	1	0	1	2	*4*
7:45 AM	**0**	**2**	**0**	**2**	***4***	**0**	**0**	**4**	**1**	***5***	**1**	**2**	**0**	**0**	*3*
8:00 AM	**1**	**3**	**0**	**1**	***5***	**1**	**0**	**1**	**3**	***5***	**0**	**2**	**0**	**2**	*4*
8:15 AM	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**1**	**2**	***4***	**1**	**1**	**1**	**1**	*4*
8:30 AM	**1**	**2**	**2**	**2**	***7***	**1**	**1**	**3**	**0**	***5***	**2**	**0**	**0**	**0**	***2***
8:45 AM	0	2	1	3	*6*	0	0	1	1	*2*	2	2	0	0	*4*
Count Total	2	14	8	14	*38*	6	1	12	14	*33*	9	11	6	6	*32*
Peak Hour	**2**	**7**	**2**	**5**	***16***	**3**	**1**	**9**	**6**	***19***	**4**	**5**	**1**	**3**	***13***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave				Brittan Ave				Alameda de las Pulgas				Alameda de las Pulgas				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	1	1	0	0	1	0	0	0	2	1	6	0
7:30 AM	0	0	0	0	0	2	0	0	0	0	1	3	0	1	1	1	9	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**4**	20
8:00 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**5**	24
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	18
8:30 AM	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	**0**	**7**	**16**
8:45 AM	0	0	0	0	0	1	1	0	0	1	0	0	0	0	3	0	6	18
Count Total	0	0	2	0	0	4	7	3	0	2	2	4	0	1	9	4	38	0
Peak Hour	**0**	**0**	**2**	**0**	**0**	**1**	**4**	**2**	**0**	**1**	**0**	**1**	**0**	**0**	**3**	**2**	**16**	**0**

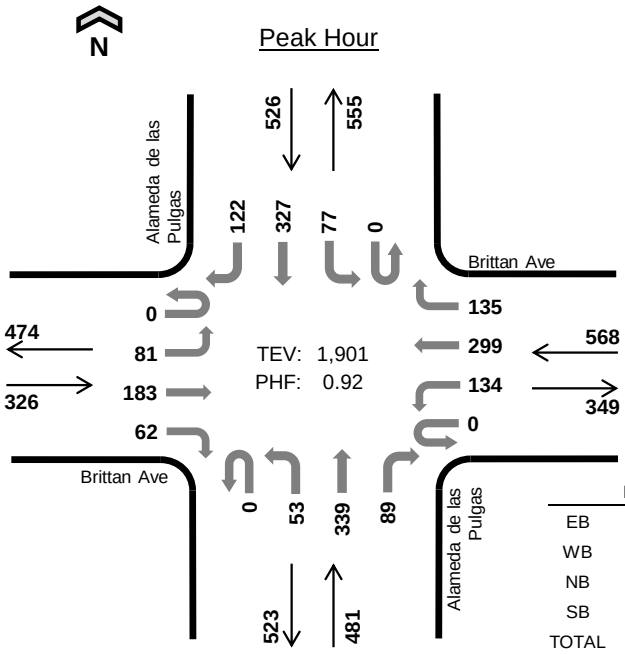
Two-Hour Count Summaries - Bikes

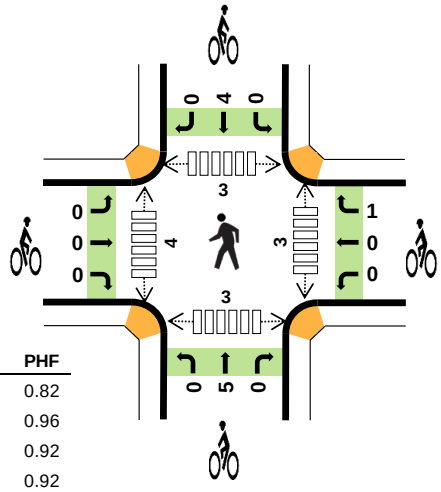
Interval Start	Brittan Ave			Brittan Ave			Alameda de las Pulgas			Alameda de las Pulgas			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	4	0	5	0
7:15 AM	0	1	0	0	0	0	0	1	0	0	1	0	3	0
7:30 AM	0	1	0	0	0	0	0	1	0	0	2	0	4	0
7:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**1**	**0**	**5**	17
8:00 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**5**	17
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**4**	18
8:30 AM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**5**	**19**
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	16
Count Total	0	4	2	1	0	0	0	11	1	0	14	0	33	0
Peak Hour	**0**	**2**	**1**	**1**	**0**	**0**	**0**	**8**	**1**	**0**	**6**	**0**	**19**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Alameda de las Pulgas
Brittan Ave

Date: 05-14-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	0.6%	0.82
WB	0.5%	0.96
NB	0.8%	0.92
SB	0.6%	0.92
TOTAL	0.6%	0.92

Two-Hour Count Summaries

Interval Start		Brittan Ave Eastbound				Brittan Ave Westbound				Alameda de las Pulgas Northbound				Alameda de las Pulgas Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	14	56	11	0	33	42	14	0	12	71	36	0	12	59	13	373	0
4:15 PM		0	13	54	17	0	34	60	22	0	4	64	34	0	22	54	17	395	0
4:30 PM		0	16	43	13	0	35	48	40	0	8	78	31	0	10	64	20	406	0
4:45 PM		**0**	**15**	**39**	**6**	**0**	**40**	**67**	**41**	**0**	**15**	**89**	**27**	**0**	**24**	**85**	**31**	**479**	1,653
5:00 PM		**0**	**17**	**44**	**27**	**0**	**32**	**72**	**39**	**0**	**9**	**86**	**21**	**0**	**24**	**95**	**24**	**490**	1,770
5:15 PM		**0**	**29**	**52**	**19**	**0**	**36**	**83**	**29**	**0**	**13**	**86**	**27**	**0**	**15**	**93**	**34**	**516**	1,891
5:30 PM		**0**	**20**	**48**	**10**	**0**	**26**	**77**	**26**	**0**	**16**	**78**	**14**	**0**	**14**	**54**	**33**	**416**	**1,901**
5:45 PM		0	19	40	6	0	36	76	28	0	12	86	30	0	21	59	21	434	1,856
Count Total		0	143	376	109	0	272	525	239	0	89	638	220	0	142	563	193	3,509	0
Peak Hour	**All**	**0**	**81**	**183**	**62**	**0**	**134**	**299**	**135**	**0**	**53**	**339**	**89**	**0**	**77**	**327**	**122**	**1,901**	**0**
	HV	**0**	**0**	**1**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**1**	**1**	**1**	**12**	**0**
	HV%	**-**	**0%**	**1%**	**2%**	**-**	**1%**	**0%**	**1%**	**-**	**0%**	**0%**	**4%**	**-**	**1%**	**0%**	**1%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	0	2	*4*	0	1	0	0	*1*	0	0	1	0	*1*
4:15 PM	1	0	0	0	*1*	0	0	0	0	*0*	2	0	1	2	*5*
4:30 PM	1	2	1	2	*6*	0	0	0	0	*0*	0	0	0	7	*7*
4:45 PM	**1**	**1**	**2**	**2**	***6***	**0**	**0**	**1**	**0**	***1***	**0**	**0**	**0**	**0**	*0*
5:00 PM	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**1**	**1**	***2***	**0**	**1**	**0**	**0**	*1*
5:15 PM	**0**	**1**	**1**	**1**	***3***	**0**	**0**	**1**	**2**	***3***	**1**	**3**	**2**	**0**	*6*
5:30 PM	**0**	**1**	**1**	**0**	***2***	**0**	**1**	**2**	**1**	***4***	**2**	**0**	**1**	**3**	***6***
5:45 PM	0	1	3	0	*4*	0	0	2	1	*3*	0	1	0	0	*1*
Count Total	6	6	8	7	*27*	0	2	7	5	*14*	5	5	5	12	*27*
Peak Hour	**2**	**3**	**4**	**3**	***12***	**0**	**1**	**5**	**4**	***10***	**3**	**4**	**3**	**3**	***13***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave				Brittan Ave				Alameda de las Pulgas				Alameda de las Pulgas				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0
4:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	1	0	0	2	0	0	0	0	1	0	0	0	2	0	6	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**1**	**0**	**6**	17
5:00 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	14
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**3**	16
5:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**12**
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0	0	4	10
Count Total	0	0	5	1	0	4	1	1	0	1	1	6	0	1	5	1	27	0
Peak Hour	**0**	**0**	**1**	**1**	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**4**	**0**	**1**	**1**	**1**	**12**	**0**

Two-Hour Count Summaries - Bikes

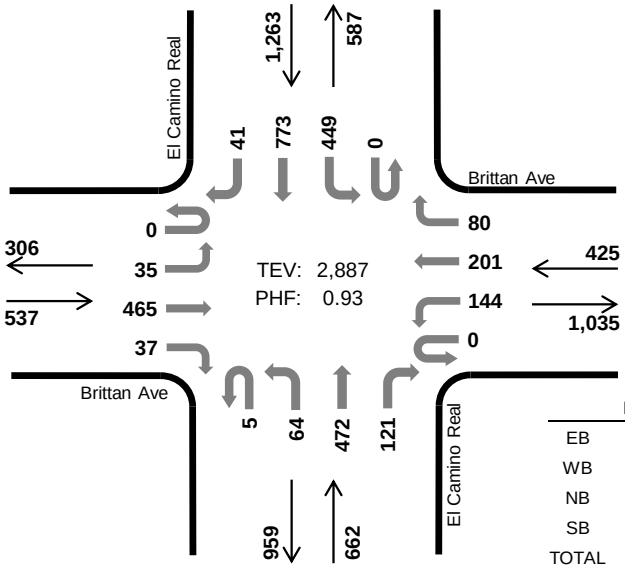
Interval Start	Brittan Ave			Brittan Ave			Alameda de las Pulgas			Alameda de las Pulgas			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**2**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**3**	6
5:30 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**0**	**1**	**0**	**4**	**10**
5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3	12
Count Total	0	0	0	0	1	1	0	7	0	0	5	0	14	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**4**	**0**	**10**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

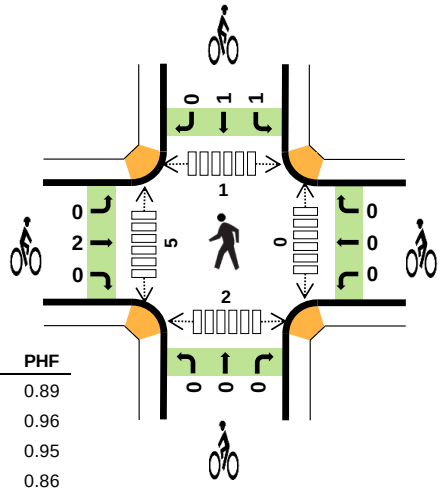
El Camino Real
Brittan Ave

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour



	HV %:	PHF
EB	0.7%	0.89
WB	4.2%	0.96
NB	3.5%	0.95
SB	3.2%	0.86
TOTAL	2.9%	0.93



Two-Hour Count Summaries

Interval Start		Brittan Ave Eastbound				Brittan Ave Westbound				El Camino Real Northbound				El Camino Real Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	10	80	5	0	22	30	11	0	11	71	13	0	42	100	4	399	0
7:15 AM		0	13	106	5	0	22	32	13	0	16	90	26	0	65	156	9	553	0
7:30 AM		0	9	107	5	0	30	39	20	2	15	113	19	0	68	153	8	588	0
7:45 AM		0	5	108	7	0	39	47	18	0	20	134	30	0	87	158	9	662	2,202
8:00 AM		**0**	**6**	**118**	**11**	**0**	**34**	**53**	**24**	**0**	**14**	**122**	**29**	**0**	**107**	**173**	**9**	**700**	2,503
8:15 AM		**0**	**13**	**99**	**9**	**0**	**36**	**52**	**19**	**1**	**13**	**122**	**35**	**0**	**121**	**217**	**8**	**745**	2,695
8:30 AM		**0**	**7**	**136**	**8**	**0**	**46**	**45**	**18**	**1**	**12**	**112**	**26**	**0**	**129**	**224**	**14**	**778**	2,885
8:45 AM		**0**	**9**	**112**	**9**	**0**	**28**	**51**	**19**	**3**	**25**	**116**	**31**	**0**	**92**	**159**	**10**	**664**	**2,887**
Count Total		0	72	866	59	0	257	349	142	7	126	880	209	0	711	1,340	71	5,089	0
Peak Hour	**All**	**0**	**35**	**465**	**37**	**0**	**144**	**201**	**80**	**5**	**64**	**472**	**121**	**0**	**449**	**773**	**41**	**2,887**	**0**
	HV	**0**	**1**	**2**	**1**	**0**	**9**	**6**	**3**	**0**	**2**	**20**	**1**	**0**	**9**	**29**	**2**	**85**	**0**
	HV%	**-**	**3%**	**0%**	**3%**	**-**	**6%**	**3%**	**4%**	**0%**	**3%**	**4%**	**1%**	**-**	**2%**	**4%**	**5%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	0	1	6	4	*11*	1	0	0	0	*1*	0	1	0	5	*6*
7:15 AM	0	3	4	9	*16*	1	0	0	0	*1*	0	0	1	0	*1*
7:30 AM	3	7	5	9	*24*	0	1	1	0	*2*	0	4	2	5	*11*
7:45 AM	1	3	5	7	*16*	1	0	0	1	*2*	0	0	0	4	*4*
8:00 AM	**2**	**5**	**4**	**5**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**1**	**2**	**5**	**10**	***18***	**1**	**0**	**0**	**1**	***2***	**0**	**2**	**1**	**2**	*5*
8:30 AM	**1**	**3**	**8**	**14**	***26***	**1**	**0**	**0**	**0**	***1***	**0**	**3**	**0**	**0**	*3*
8:45 AM	**0**	**8**	**6**	**11**	***25***	**0**	**0**	**0**	**1**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	8	32	43	69	*152*	5	1	1	3	*10*	0	10	4	16	*30*
Peak Hour	**4**	**18**	**23**	**40**	***85***	**2**	**0**	**0**	**2**	***4***	**0**	**5**	**1**	**2**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave Eastbound				Brittan Ave Westbound				El Camino Real Northbound				El Camino Real Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	0	0	1	0	0	0	0	6	0	0	2	2	0	11	0
7:15 AM	0	0	0	0	0	2	1	0	0	0	4	0	0	1	7	1	16	0
7:30 AM	0	1	2	0	0	3	1	3	0	0	5	0	0	1	6	2	24	0
7:45 AM	0	0	1	0	0	2	0	1	0	1	4	0	0	0	7	0	16	67
8:00 AM	**0**	**1**	**1**	**0**	**0**	**4**	**1**	**0**	**0**	**1**	**3**	**0**	**0**	**1**	**4**	**0**	**16**	72
8:15 AM	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**0**	**5**	**0**	**0**	**4**	**6**	**0**	**18**	74
8:30 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**1**	**6**	**1**	**0**	**1**	**12**	**1**	**26**	76
8:45 AM	**0**	**0**	**0**	**0**	**0**	**3**	**3**	**2**	**0**	**0**	**6**	**0**	**0**	**3**	**7**	**1**	**25**	**85**
Count Total	0	2	5	1	0	17	8	7	0	3	39	1	0	13	51	5	152	0
Peak Hour	**0**	**1**	**2**	**1**	**0**	**9**	**6**	**3**	**0**	**2**	**20**	**1**	**0**	**9**	**29**	**2**	**85**	**0**

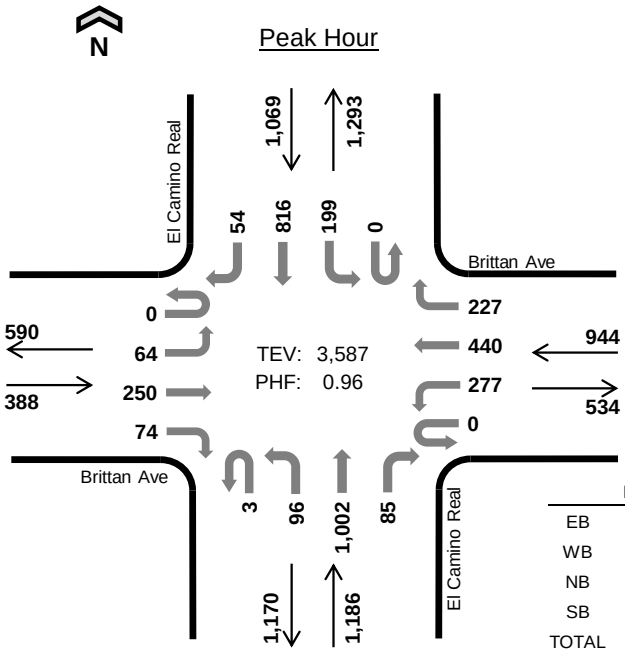
Two-Hour Count Summaries - Bikes

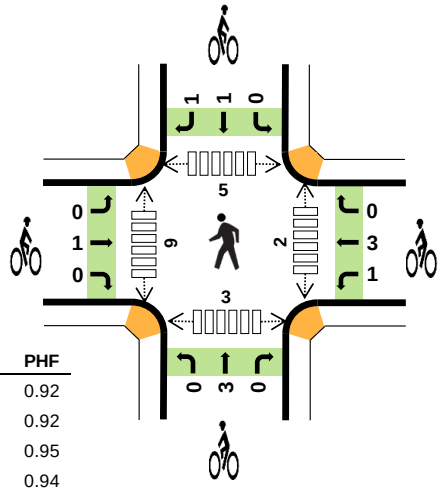
Interval Start	Brittan Ave Eastbound			Brittan Ave Westbound			El Camino Real Northbound			El Camino Real Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
7:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	2	0
7:45 AM	0	1	0	0	0	0	0	0	0	1	0	0	2	6
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	5
8:15 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	6
8:30 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	5
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**4**
Count Total	0	5	0	0	1	0	0	1	0	2	1	0	10	0
Peak Hour	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**4**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

El Camino Real
Brittan Ave

Date: 05-14-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM





	HV %:	PHF
EB	1.5%	0.92
WB	0.2%	0.92
NB	1.5%	0.95
SB	1.1%	0.94
TOTAL	1.1%	0.96

Two-Hour Count Summaries

Interval Start		Brittan Ave Eastbound				Brittan Ave Westbound				El Camino Real Northbound				El Camino Real Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	17	88	8	0	57	74	53	0	32	168	24	0	80	203	12	816	0
4:15 PM		0	16	79	9	0	49	86	61	1	22	198	23	0	48	181	17	790	0
4:30 PM		0	20	73	20	0	68	88	52	1	29	194	32	0	58	184	17	836	0
4:45 PM		**0**	**20**	**65**	**20**	**0**	**67**	**96**	**44**	**1**	**24**	**225**	**18**	**0**	**62**	**187**	**17**	**846**	3,288
5:00 PM		**0**	**15**	**65**	**20**	**0**	**78**	**114**	**56**	**1**	**27**	**264**	**19**	**0**	**42**	**208**	**11**	**920**	3,392
5:15 PM		**0**	**15**	**56**	**15**	**0**	**69**	**124**	**63**	**0**	**23**	**264**	**19**	**0**	**45**	**223**	**15**	**931**	3,533
5:30 PM		**0**	**14**	**64**	**19**	**0**	**63**	**106**	**64**	**1**	**22**	**249**	**29**	**0**	**50**	**198**	**11**	**890**	**3,587**
5:45 PM		0	15	50	10	0	76	111	44	1	19	219	29	0	41	164	11	790	3,531
Count Total		0	132	540	121	0	527	799	437	6	198	1,781	193	0	426	1,548	111	6,819	0
Peak Hour	**All**	**0**	**64**	**250**	**74**	**0**	**277**	**440**	**227**	**3**	**96**	**1,002**	**85**	**0**	**199**	**816**	**54**	**3,587**	**0**
	HV	**0**	**2**	**2**	**2**	**0**	**1**	**0**	**1**	**0**	**2**	**11**	**5**	**0**	**2**	**9**	**1**	**38**	**0**
	HV%	**-**	**3%**	**1%**	**3%**	**-**	**0%**	**0%**	**0%**	**0%**	**2%**	**1%**	**6%**	**-**	**1%**	**1%**	**2%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	1	3	5	4	*13*	0	0	0	0	*0*	0	3	5	2	*10*
4:15 PM	1	1	5	3	*10*	0	0	1	0	*1*	1	4	0	0	*5*
4:30 PM	1	2	4	0	*7*	0	0	0	0	*0*	0	3	0	1	*4*
4:45 PM	**3**	**1**	**2**	**6**	***12***	**1**	**0**	**0**	**0**	***1***	**1**	**1**	**0**	**1**	*3*
5:00 PM	**2**	**0**	**7**	**3**	***12***	**0**	**4**	**3**	**1**	***8***	**0**	**5**	**2**	**0**	*7*
5:15 PM	**0**	**1**	**4**	**3**	***8***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**1**	*4*
5:30 PM	**1**	**0**	**5**	**0**	***6***	**0**	**0**	**0**	**1**	***1***	**1**	**0**	**3**	**1**	***5***
5:45 PM	1	1	3	3	*8*	0	1	0	0	*1*	0	3	1	3	*7*
Count Total	10	9	35	22	*76*	1	5	4	2	*12*	3	22	11	9	*45*
Peak Hour	**6**	**2**	**18**	**12**	***38***	**1**	**4**	**3**	**2**	***10***	**2**	**9**	**5**	**3**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave				Brittan Ave				El Camino Real				El Camino Real				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	1	0	0	2	0	1	0	0	3	2	0	2	2	0	13	0
4:15 PM	0	0	1	0	0	1	0	0	0	0	5	0	0	1	1	1	10	0
4:30 PM	0	0	1	0	0	0	1	1	0	0	3	1	0	0	0	0	7	0
4:45 PM	**0**	**2**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**2**	**3**	**1**	**12**	42
5:00 PM	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**3**	**0**	**12**	41
5:15 PM	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**3**	**0**	**8**	39
5:30 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**	**0**	**0**	**0**	**0**	**6**	**38**
5:45 PM	0	0	1	0	0	0	0	1	0	0	2	1	0	0	3	0	8	34
Count Total	0	2	6	2	0	4	1	4	0	2	24	9	0	5	15	2	76	0
Peak Hour	**0**	**2**	**2**	**2**	**0**	**1**	**0**	**1**	**0**	**2**	**11**	**5**	**0**	**2**	**9**	**1**	**38**	**0**

Two-Hour Count Summaries - Bikes

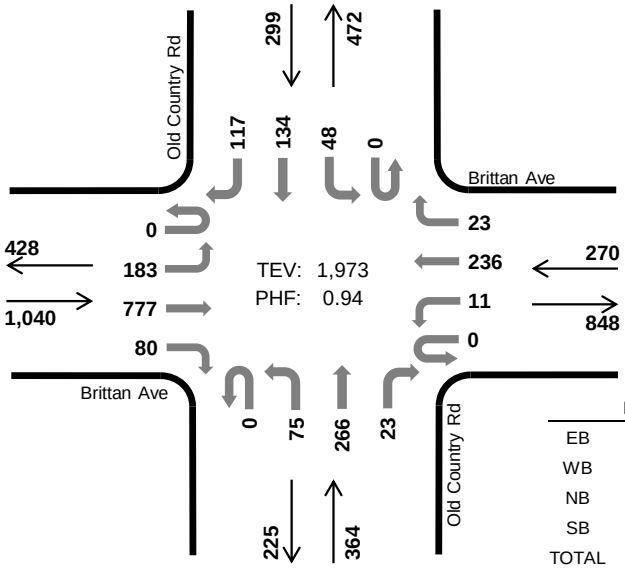
Interval Start	Brittan Ave			Brittan Ave			El Camino Real			El Camino Real			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
5:00 PM	**0**	**0**	**0**	**1**	**3**	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**8**	10
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	9
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**10**
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	10
Count Total	0	1	0	1	3	1	0	4	0	0	1	1	12	0
Peak Hour	**0**	**1**	**0**	**1**	**3**	**0**	**0**	**3**	**0**	**0**	**1**	**1**	**10**	**0**

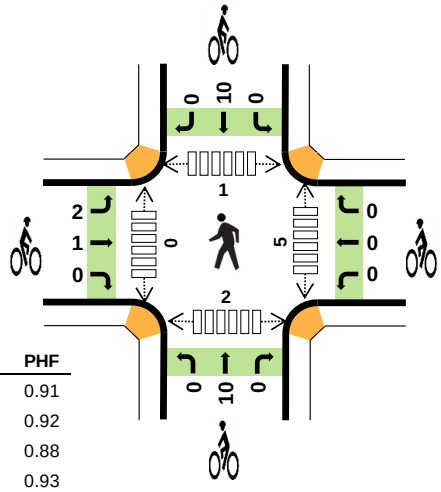
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Old Country Rd
Brittan Ave

Date: 05-14-2019
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	1.2%	0.91
WB	5.2%	0.92
NB	3.3%	0.88
SB	6.0%	0.93
TOTAL	2.8%	0.94

Two-Hour Count Summaries

Interval Start	Brittan Ave Eastbound				Brittan Ave Westbound				Old Country Rd Northbound				Old Country Rd Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	27	102	7	0	0	42	9	0	6	29	4	0	7	12	15	260	0
7:15 AM	0	37	144	12	0	1	48	6	0	8	33	4	0	11	20	11	335	0
7:30 AM	0	38	150	11	0	3	56	4	0	14	54	7	0	7	31	19	394	0
7:45 AM	0	42	176	8	0	2	64	5	0	13	57	12	0	12	30	25	446	1,435
8:00 AM	**0**	**35**	**199**	**17**	**0**	**5**	**56**	**3**	**0**	**19**	**65**	**4**	**0**	**13**	**31**	**36**	**483**	1,658
8:15 AM	**0**	**48**	**189**	**21**	**0**	**2**	**60**	**5**	**0**	**19**	**54**	**4**	**0**	**15**	**32**	**26**	**475**	1,798
8:30 AM	**0**	**51**	**209**	**25**	**0**	**3**	**61**	**9**	**0**	**20**	**69**	**6**	**0**	**7**	**35**	**29**	**524**	1,928
8:45 AM	**0**	**49**	**180**	**17**	**0**	**1**	**59**	**6**	**0**	**17**	**78**	**9**	**0**	**13**	**36**	**26**	**491**	**1,973**
Count Total	0	327	1,349	118	0	17	446	47	0	116	439	50	0	85	227	187	3,408	0
Peak Hour All	**0**	**183**	**777**	**80**	**0**	**11**	**236**	**23**	**0**	**75**	**266**	**23**	**0**	**48**	**134**	**117**	**1,973**	**0**
Peak Hour HV	**0**	**0**	**9**	**3**	**0**	**0**	**11**	**3**	**0**	**3**	**7**	**2**	**0**	**11**	**3**	**4**	**56**	**0**
Peak Hour HV%	**-**	**0%**	**1%**	**4%**	**-**	**0%**	**5%**	**13%**	**-**	**4%**	**3%**	**9%**	**-**	**23%**	**2%**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	3	4	3	3	*13*	1	0	0	2	*3*	2	0	0	4	*6*
7:15 AM	1	3	0	2	*6*	1	0	2	2	*5*	2	0	0	0	*2*
7:30 AM	3	5	1	4	*13*	0	0	4	0	*4*	1	0	2	4	*7*
7:45 AM	1	1	2	5	*9*	2	0	3	2	*7*	1	0	0	4	*5*
8:00 AM	**2**	**2**	**2**	**5**	***11***	**0**	**0**	**4**	**2**	***6***	**1**	**0**	**0**	**0**	*1*
8:15 AM	**4**	**2**	**2**	**3**	***11***	**1**	**0**	**4**	**3**	***8***	**3**	**0**	**1**	**2**	*6*
8:30 AM	**3**	**2**	**4**	**2**	***11***	**1**	**0**	**2**	**5**	***8***	**1**	**0**	**0**	**0**	*1*
8:45 AM	**3**	**8**	**4**	**8**	***23***	**1**	**0**	**0**	**0**	***1***	**0**	**0**	**0**	**0**	***0***
Count Total	20	27	18	32	*97*	7	0	19	16	*42*	11	0	3	14	*28*
Peak Hour	**12**	**14**	**12**	**18**	***56***	**3**	**0**	**10**	**10**	***23***	**5**	**0**	**1**	**2**	***8***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave				Brittan Ave				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	3	0	0	0	1	3	0	0	2	1	0	3	0	0	13	0
7:15 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	2	0	0	6	0
7:30 AM	0	0	3	0	0	0	5	0	0	0	1	0	0	1	1	2	13	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	2	0	0	3	0	2	9	41
8:00 AM	**0**	**0**	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**1**	**1**	**0**	**0**	**3**	**0**	**2**	**11**	39
8:15 AM	**0**	**0**	**3**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**3**	**0**	**0**	**11**	44
8:30 AM	**0**	**0**	**3**	**0**	**0**	**0**	**1**	**1**	**0**	**1**	**2**	**1**	**0**	**0**	**1**	**1**	**11**	42
8:45 AM	**0**	**0**	**2**	**1**	**0**	**0**	**6**	**2**	**0**	**1**	**2**	**1**	**0**	**5**	**2**	**1**	**23**	**56**
Count Total	0	0	17	3	0	0	21	6	0	3	12	3	0	20	4	8	97	0
Peak Hour	**0**	**0**	**9**	**3**	**0**	**0**	**11**	**3**	**0**	**3**	**7**	**2**	**0**	**11**	**3**	**4**	**56**	**0**

Two-Hour Count Summaries - Bikes

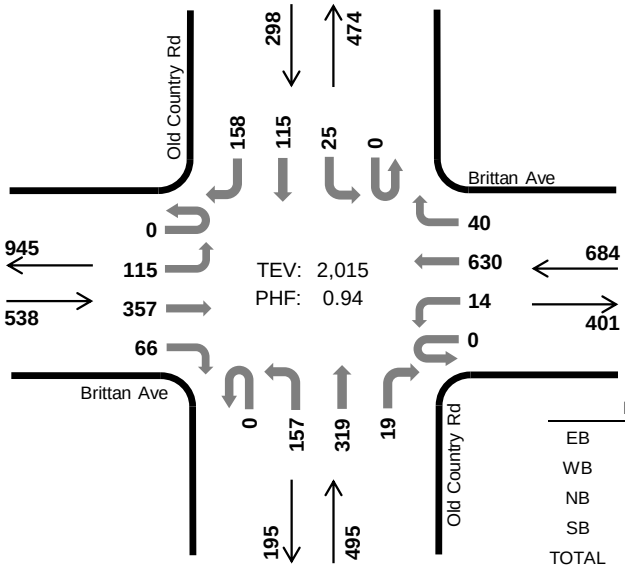
Interval Start	Brittan Ave			Brittan Ave			Old Country Rd			Old Country Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	1	0	0	0	0	0	0	0	0	0	2	0	3	0
7:15 AM	1	0	0	0	0	0	0	2	0	0	2	0	5	0
7:30 AM	0	0	0	0	0	0	1	3	0	0	0	0	4	0
7:45 AM	0	2	0	0	0	0	0	3	0	0	2	0	7	19
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**2**	**0**	**6**	22
8:15 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**3**	**0**	**8**	25
8:30 AM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**5**	**0**	**8**	29
8:45 AM	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**23**
Count Total	4	3	0	0	0	0	1	18	0	0	16	0	42	0
Peak Hour	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**10**	**0**	**23**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

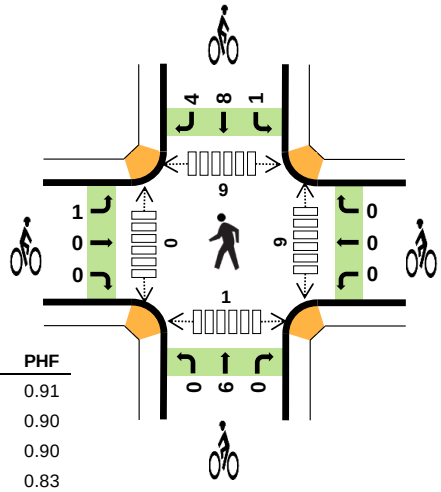
Old Country Rd
Brittan Ave

Date: 05-14-2019
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:45 PM to 5:45 PM

Peak Hour



	HV %:	PHF
EB	1.7%	0.91
WB	0.3%	0.90
NB	1.6%	0.90
SB	0.7%	0.83
TOTAL	1.0%	0.94



Two-Hour Count Summaries

Interval Start		Brittan Ave Eastbound				Brittan Ave Westbound				Old Country Rd Northbound				Old Country Rd Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	37	136	23	0	5	120	11	0	23	70	5	0	15	33	38	516	0
4:15 PM		0	27	102	21	0	3	139	9	0	22	60	11	0	13	24	34	465	0
4:30 PM		0	40	108	13	0	2	126	13	0	27	62	5	0	9	24	48	477	0
4:45 PM		**0**	**28**	**93**	**23**	**0**	**4**	**133**	**8**	**0**	**31**	**74**	**4**	**0**	**5**	**29**	**50**	**482**	1,940
5:00 PM		**0**	**26**	**83**	**21**	**0**	**2**	**162**	**13**	**0**	**38**	**94**	**6**	**0**	**8**	**37**	**45**	**535**	1,959
5:15 PM		**0**	**24**	**79**	**13**	**0**	**6**	**173**	**11**	**0**	**48**	**81**	**7**	**0**	**9**	**27**	**36**	**514**	2,008
5:30 PM		**0**	**37**	**102**	**9**	**0**	**2**	**162**	**8**	**0**	**40**	**70**	**2**	**0**	**3**	**22**	**27**	**484**	**2,015**
5:45 PM		0	32	75	12	0	3	162	6	0	31	89	2	0	3	17	38	470	2,003
Count Total		0	251	778	135	0	27	1,177	79	0	260	600	42	0	65	213	316	3,943	0
Peak Hour	**All**	**0**	**115**	**357**	**66**	**0**	**14**	**630**	**40**	**0**	**157**	**319**	**19**	**0**	**25**	**115**	**158**	**2,015**	**0**
	HV	**0**	**3**	**6**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**4**	**2**	**0**	**1**	**1**	**0**	**21**	**0**
	HV%	**-**	**3%**	**2%**	**0%**	**-**	**14%**	**0%**	**0%**	**-**	**1%**	**1%**	**11%**	**-**	**4%**	**1%**	**0%**	**1%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	1	3	3	*12*	0	1	2	2	*5*	5	0	4	2	*11*
4:15 PM	2	1	0	0	*3*	0	0	0	2	*2*	3	0	2	1	*6*
4:30 PM	2	1	0	2	*5*	0	0	1	0	*1*	0	0	2	1	*3*
4:45 PM	**3**	**1**	**1**	**1**	***6***	**1**	**0**	**4**	**4**	***9***	**4**	**0**	**3**	**0**	*7*
5:00 PM	**3**	**0**	**3**	**0**	***6***	**0**	**0**	**0**	**5**	***5***	**2**	**0**	**1**	**0**	*3*
5:15 PM	**1**	**1**	**3**	**0**	***5***	**0**	**0**	**0**	**2**	***2***	**2**	**0**	**3**	**1**	*6*
5:30 PM	**2**	**0**	**1**	**1**	***4***	**0**	**0**	**2**	**2**	***4***	**1**	**0**	**2**	**0**	***3***
5:45 PM	1	1	1	0	*3*	0	1	3	1	*5*	4	1	1	3	*9*
Count Total	19	6	12	7	*44*	1	2	12	18	*33*	21	1	18	8	*48*
Peak Hour	**9**	**2**	**8**	**2**	***21***	**1**	**0**	**6**	**13**	***20***	**9**	**0**	**9**	**1**	***19***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Brittan Ave				Brittan Ave				Old Country Rd				Old Country Rd				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	1	3	1	0	0	1	0	0	0	3	0	0	1	0	2	12	0
4:15 PM	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0
4:30 PM	0	0	1	1	0	0	1	0	0	0	0	0	0	0	1	1	5	0
4:45 PM	**0**	**2**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**6**	26
5:00 PM	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**6**	20
5:15 PM	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**5**	22
5:30 PM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**4**	**21**
5:45 PM	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	3	18
Count Total	0	5	12	2	0	2	4	0	0	2	8	2	0	2	2	3	44	0
Peak Hour	**0**	**3**	**6**	**0**	**0**	**2**	**0**	**0**	**0**	**2**	**4**	**2**	**0**	**1**	**1**	**0**	**21**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Brittan Ave			Brittan Ave			Old Country Rd			Old Country Rd			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	1	0	2	0	0	1	1	5	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
4:45 PM	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**3**	**1**	**9**	17
5:00 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**	**5**	17
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**2**	17
5:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**4**	**20**
5:45 PM	0	0	0	0	1	0	0	3	0	0	1	0	5	16
Count Total	1	0	0	0	1	1	0	12	0	1	12	5	33	0
Peak Hour	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**1**	**8**	**4**	**20**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix B
Level of Service Calculations

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.505
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	125	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1 0	2 0	0	0 0	2 0	1	2 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	70	505	0	0	827	260	268	0	302	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	505	0	0	827	260	268	0	302	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	79	572	0	0	936	294	303	0	342	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	572	0	0	936	294	303	0	342	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	79	572	0	0	936	294	334	0	342	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.00	0.00	0.27	0.17	0.09	0.00	0.19	0.00	0.00	0.00
Crit Volume:	79				468				342		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.812
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	92	Level Of Service:	D

Street Name:	Alameda de las Pulgas									San Carlos Ave								
Approach:	North Bound				South Bound					East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Protected				
Rights:	Include					Ignore					Include					Ignore				
Min. Green:	4	0	4			0	0	0			0	7	7			4	7	0		
Y+R:	4.2	0.0	4.2			0.0	0.0	0.0			0.0	4.2	4.2			4.0	4.2	0.0		
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0
Volume Module:																				
Base Vol:	254	0	446			0	0	0			0	636	218			208	453	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	254	0	446			0	0	0			0	636	218			208	453	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.90			0.90	0.90	0.00		
PHF Volume:	281	0	494			0	0	0			0	705	242			230	502	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	281	0	494			0	0	0			0	705	242			230	502	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
FinalVolume:	281	0	494			0	0	0			0	705	242			230	502	0		
Saturation Flow Module:																				
Sat/Lane:	1760	1760	1760			1760	1760	1760			1760	1760	1760			1760	1760	1760		
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	0.00	1.00			0.00	0.00	0.00			0.00	1.00	1.00			1.00	1.00	0.00		
Final Sat.:	1760	0	1760			0	0	0			0	1760	1760			1760	1760	0		
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.00	0.28			0.00	0.00	0.00			0.00	0.40	0.14			0.13	0.29	0.00		
Crit Volume:			494					0					705				230			
Crit Moves:			****										****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.625
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	76	Level Of Service:	B

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	34	317	98	117	358	120	131	242	111	109	191	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	317	98	117	358	120	131	242	111	109	191	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	37	344	106	127	388	130	142	263	120	118	207	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	344	106	127	388	130	142	263	120	118	207	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	344	106	127	388	130	142	263	120	118	207	71
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.76	0.24	1.00	1.00	1.00	0.35	0.65	1.00	1.00	0.75	0.25
Final Sat.:	1760	1344	416	1760	1760	1760	618	1142	1760	1760	1313	447
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.26	0.07	0.22	0.07	0.23	0.23	0.07	0.07	0.16	0.16
Crit Volume:			450	127				405		118		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.588
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	A

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	69	472	121	449	773	41	35	465	37	144	201	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	472	121	449	773	41	35	465	37	144	201	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	80	546	140	519	894	47	40	538	43	166	232	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	546	140	519	894	47	40	538	43	166	232	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	546	140	571	894	47	40	538	43	333	232	92
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.85	0.15	0.13	1.73	0.14	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	5014	266	229	3048	243	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.08	0.16	0.18	0.18	0.18	0.18	0.18	0.09	0.13	0.05
Crit Volume:		273		286				310		166		
Crit Moves:		****		****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.507
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	75	266	23	48	134	117	183	777	80	11	236	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	266	23	48	134	117	183	777	80	11	236	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	85	301	26	54	152	132	207	879	91	12	267	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	301	26	54	152	132	207	879	91	12	267	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	301	26	54	152	132	207	879	91	50	267	26
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	0.38	1.62	1.00	0.41	1.59	1.00
Final Sat.:	1850	1703	147	1850	1850	1850	705	2995	1850	761	2939	1850
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.18	0.03	0.08	0.07	0.29	0.29	0.05	0.02	0.09	0.01
Crit Volume:			327	54				543		12		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.491
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	122	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1 0	2 0	0	0 0	2 0	1	2 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	171	987	0	0	831	382	217	0	177	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	987	0	0	831	382	217	0	177	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	194	1117	0	0	940	432	246	0	200	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	194	1117	0	0	940	432	246	0	200	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	194	1117	0	0	940	432	270	0	200	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.00	0.00	0.27	0.25	0.08	0.00	0.11	0.00	0.00	0.00
Crit Volume:	194				470				200		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.595
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	42	Level Of Service:	A

Street Name:	Alameda de las Pulgas									San Carlos Ave								
Approach:	North Bound				South Bound					East Bound					West Bound			
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Protected				
Rights:	Include					Ignore					Include					Ignore				
Min. Green:	4	0	4			0	0	0			0	7	7			4	7	0		
Y+R:	4.2	0.0	4.2			0.0	0.0	0.0			0.0	4.2	4.2			4.0	4.2	0.0		
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0
Volume Module:																				
Base Vol:	249	0	256			0	0	0			0	361	235			328	678	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	249	0	256			0	0	0			0	361	235			328	678	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.90			0.90	0.90	0.00		
PHF Volume:	276	0	284			0	0	0			0	400	260			363	751	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	276	0	284			0	0	0			0	400	260			363	751	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
FinalVolume:	276	0	284			0	0	0			0	400	260			363	751	0		
Saturation Flow Module:																				
Sat/Lane:	1760	1760	1760			1760	1760	1760			1760	1760	1760			1760	1760	1760		
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	0.00	1.00			0.00	0.00	0.00			0.00	1.00	1.00			1.00	1.00	0.00		
Final Sat.:	1760	0	1760			0	0	0			0	1760	1760			1760	1760	0		
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.00	0.16			0.00	0.00	0.00			0.00	0.23	0.15			0.21	0.43	0.00		
Crit Volume:			284					0				400				363				
Crit Moves:			****									****				****				

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.685
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	90	Level Of Service:	B

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	53	339	89	77	327	122	81	183	62	134	299	135
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	339	89	77	327	122	81	183	62	134	299	135
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	63	401	105	91	386	144	96	216	73	158	353	159
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	401	105	91	386	144	96	216	73	158	353	159
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	401	105	91	386	144	191	216	73	158	353	159
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.79	0.21	1.00	1.00	1.00	0.31	0.69	1.00	1.00	0.69	0.31
Final Sat.:	1760	1394	366	1760	1760	1760	540	1220	1760	1760	1213	547
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.29	0.05	0.22	0.08	0.18	0.18	0.04	0.09	0.29	0.29
Crit Volume:			506	91			96				513	
Crit Moves:			****	****			****				****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.687
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	91	Level Of Service:	B

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	99	1002	85	199	816	54	64	250	74	277	440	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	99	1002	85	199	816	54	64	250	74	277	440	227
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	107	1087	92	216	885	59	69	271	80	301	477	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	107	1087	92	216	885	59	69	271	80	301	477	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	107	1087	92	238	885	59	139	271	80	601	477	246
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.81	0.19	0.39	1.28	0.33	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	4952	328	695	2248	576	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.05	0.07	0.18	0.18	0.10	0.12	0.14	0.17	0.27	0.14
Crit Volume:		544			119			69			477	
Crit Moves:		****			****			****			****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.494
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	157	319	19	25	115	158	115	357	66	14	630	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	319	19	25	115	158	115	357	66	14	630	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	178	361	22	28	130	179	130	404	75	16	713	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	361	22	28	130	179	130	404	75	16	713	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	361	22	28	130	179	521	404	75	32	713	45
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00	0.09	1.91	1.00
Final Sat.:	1850	1746	104	1850	1850	1850	1850	1850	1850	164	3536	1850
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.21	0.02	0.07	0.10	0.07	0.22	0.04	0.10	0.20	0.02
Crit Volume:			383	28			130				373	
Crit Moves:			****	****			****				****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.505
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	125	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1 0	2 0	0	0 0	2 0	1	2 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	70	505	0	0	827	262	271	0	302	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	505	0	0	827	262	271	0	302	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	79	572	0	0	936	297	307	0	342	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	572	0	0	936	297	307	0	342	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	79	572	0	0	936	297	337	0	342	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.00	0.00	0.27	0.17	0.10	0.00	0.19	0.00	0.00	0.00
Crit Volume:	79				468				342		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.815
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	93	Level Of Service:	D

Street Name:	Alameda de las Pulgas									San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	- T	- R	L	- T	- R	L	- T	- R	L	- T	- R			
Control:	Protected			Permitted			Permitted			Protected					
Rights:	Include			Ignore			Include			Ignore					
Min. Green:	4	0	4	0	0	0	0	7	7	4	7	0			
Y+R:	4.2	0.0	4.2	0.0	0.0	0.0	0.0	4.2	4.2	4.0	4.2	0.0			
Lanes:	1	0 0	0 1	0	0 0	0 0	0	0 1	0 1	1	0 1	0 0			
Volume Module:															
Base Vol:	254	0	449	0	0	0	0	636	218	210	453	0			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	254	0	449	0	0	0	0	636	218	210	453	0			
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90	0.00			
PHF Volume:	281	0	498	0	0	0	0	705	242	233	502	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	281	0	498	0	0	0	0	705	242	233	502	0			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
FinalVolume:	281	0	498	0	0	0	0	705	242	233	502	0			
Saturation Flow Module:															
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760			
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00			
Final Sat.:	1760	0	1760	0	0	0	0	1760	1760	1760	1760	0			
Capacity Analysis Module:															
Vol/Sat:	0.16	0.00	0.28	0.00	0.00	0.00	0.00	0.40	0.14	0.13	0.29	0.00			
Crit Volume:			498			0			705		233				
Crit Moves:			****						****		****				

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.630
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	B

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	34	317	98	120	358	138	136	242	111	109	191	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	317	98	120	358	138	136	242	111	109	191	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	37	344	106	130	388	150	148	263	120	118	207	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	344	106	130	388	150	148	263	120	118	207	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	344	106	130	388	150	148	263	120	118	207	71
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.76	0.24	1.00	1.00	1.00	0.36	0.64	1.00	1.00	0.75	0.25
Final Sat.:	1760	1344	416	1760	1760	1760	633	1127	1760	1760	1313	447
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.26	0.07	0.22	0.09	0.23	0.23	0.07	0.07	0.16	0.16
Crit Volume:			450	130				410		118		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.589
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	A

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	69	472	121	449	773	41	35	467	38	144	201	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	472	121	449	773	41	35	467	38	144	201	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	80	546	140	519	894	47	40	540	44	166	232	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	546	140	519	894	47	40	540	44	166	232	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	546	140	571	894	47	40	540	44	333	232	92
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.85	0.15	0.13	1.73	0.14	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	5014	266	228	3044	248	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.08	0.16	0.18	0.18	0.18	0.18	0.18	0.09	0.13	0.05
Crit Volume:		273		286				312		166		
Crit Moves:		****		****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.507
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	75	266	23	48	134	117	183	779	80	11	236	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	266	23	48	134	117	183	779	80	11	236	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	85	301	26	54	152	132	207	882	91	12	267	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	301	26	54	152	132	207	882	91	12	267	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	301	26	54	152	132	207	882	91	50	267	26
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	0.38	1.62	1.00	0.41	1.59	1.00
Final Sat.:	1850	1703	147	1850	1850	1850	704	2996	1850	761	2939	1850
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.18	0.03	0.08	0.07	0.29	0.29	0.05	0.02	0.09	0.01
Crit Volume:			327	54				544		12		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.491
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	122	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1 0	2 0	0	0 0	2 0	1	2 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	171	987	0	0	831	387	222	0	177	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	987	0	0	831	387	222	0	177	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	194	1117	0	0	940	438	251	0	200	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	194	1117	0	0	940	438	251	0	200	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	194	1117	0	0	940	438	276	0	200	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.00	0.00	0.27	0.25	0.08	0.00	0.11	0.00	0.00	0.00
Crit Volume:	194				470				200		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.599
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	43	Level Of Service:	A

Street Name:	Alameda de las Pulgas									San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected			Permitted			Permitted			Protected					
Rights:	Include			Ignore			Include			Ignore					
Min. Green:	4	0	4	0	0	0	0	7	7	4	7	0			
Y+R:	4.2	0.0	4.2	0.0	0.0	0.0	0.0	4.2	4.2	4.0	4.2	0.0			
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0
Volume Module:																				
Base Vol:	249	0	258	0	0	0	0	361	235	333	678	0			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Initial Bse:	249	0	258	0	0	0	0	361	235	333	678	0			
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90	0.00			
PHF Volume:	276	0	286	0	0	0	0	400	260	369	751	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Reduced Vol:	276	0	286	0	0	0	0	400	260	369	751	0			
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00			
FinalVolume:	276	0	286	0	0	0	0	400	260	369	751	0			
Saturation Flow Module:																				
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760			
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00			
Final Sat.:	1760	0	1760	0	0	0	0	1760	1760	1760	1760	0			
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.23	0.15	0.21	0.43	0.00			
Crit Volume:			286			0			400			369			
Crit Moves:			****						****			****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.699
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	94	Level Of Service:	B

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	53	339	89	79	327	132	99	183	62	134	299	136
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	339	89	79	327	132	99	183	62	134	299	136
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	63	401	105	93	386	156	117	216	73	158	353	161
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	401	105	93	386	156	117	216	73	158	353	161
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	401	105	93	386	156	234	216	73	158	353	161
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.79	0.21	1.00	1.00	1.00	0.35	0.65	1.00	1.00	0.69	0.31
Final Sat.:	1760	1394	366	1760	1760	1760	618	1142	1760	1760	1210	550
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.29	0.05	0.22	0.09	0.19	0.19	0.04	0.09	0.29	0.29
Crit Volume:			506	93			117					514
Crit Moves:			****	****			****					****

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.687
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	91	Level Of Service:	B

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	100	1002	85	199	816	54	64	252	74	277	440	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	100	1002	85	199	816	54	64	252	74	277	440	227
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	109	1087	92	216	885	59	69	273	80	301	477	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	109	1087	92	216	885	59	69	273	80	301	477	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	109	1087	92	238	885	59	139	273	80	601	477	246
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.81	0.19	0.39	1.28	0.33	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	4952	328	691	2255	574	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.05	0.07	0.18	0.18	0.10	0.12	0.14	0.17	0.27	0.14
Crit Volume:		544			119			69			477	
Crit Moves:		****			****			****			****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.494
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	157	319	19	25	115	158	115	359	66	14	630	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	319	19	25	115	158	115	359	66	14	630	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	178	361	22	28	130	179	130	406	75	16	713	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	361	22	28	130	179	130	406	75	16	713	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	361	22	28	130	179	521	406	75	32	713	45
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00	0.09	1.91	1.00
Final Sat.:	1850	1746	104	1850	1850	1850	1850	1850	1850	164	3536	1850
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.21	0.02	0.07	0.10	0.07	0.22	0.04	0.10	0.20	0.02
Crit Volume:			383	28			130			373		
Crit Moves:			****	****			****			****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.505
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	125	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1 0	2 0	0	0 0	2 0	1	2 0	0 0	1	0 0	0 0	0
Volume Module:												
Base Vol:	70	505	0	0	827	264	275	0	302	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	505	0	0	827	264	275	0	302	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	79	572	0	0	936	299	311	0	342	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	79	572	0	0	936	299	311	0	342	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	79	572	0	0	936	299	342	0	342	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.00	0.00	0.27	0.17	0.10	0.00	0.19	0.00	0.00	0.00
Crit Volume:	79				468				342		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.819
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	95	Level Of Service:	D

Street Name:	Alameda de las Pulgas									San Carlos Ave								
Approach:	North Bound				South Bound				East Bound				West Bound					
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Protected					Permitted					Permitted					Protected				
Rights:	Include					Ignore					Include					Ignore				
Min. Green:	4	0	4			0	0	0			0	7	7			4	7	0		
Y+R:	4.2	0.0	4.2			0.0	0.0	0.0			0.0	4.2	4.2			4.0	4.2	0.0		
Lanes:	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0
Volume Module:																				
Base Vol:	254	0	453			0	0	0			0	636	218			212	453	0		
Growth Adj:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Initial Bse:	254	0	453			0	0	0			0	636	218			212	453	0		
User Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
PHF Adj:	0.90	0.90	0.90			0.90	0.90	0.00			0.90	0.90	0.90			0.90	0.90	0.00		
PHF Volume:	281	0	502			0	0	0			0	705	242			235	502	0		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	281	0	502			0	0	0			0	705	242			235	502	0		
PCE Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
MLF Adj:	1.00	1.00	1.00			1.00	1.00	0.00			1.00	1.00	1.00			1.00	1.00	0.00		
FinalVolume:	281	0	502			0	0	0			0	705	242			235	502	0		
Saturation Flow Module:																				
Sat/Lane:	1760	1760	1760			1760	1760	1760			1760	1760	1760			1760	1760	1760		
Adjustment:	1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00			1.00	1.00	1.00		
Lanes:	1.00	0.00	1.00			0.00	0.00	0.00			0.00	1.00	1.00			1.00	1.00	0.00		
Final Sat.:	1760	0	1760			0	0	0			0	1760	1760			1760	1760	0		
Capacity Analysis Module:																				
Vol/Sat:	0.16	0.00	0.29			0.00	0.00	0.00			0.00	0.40	0.14			0.13	0.29	0.00		
Crit Volume:			502					0					705				235			
Crit Moves:			****										****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.636
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	78	Level Of Service:	B

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	34	317	98	124	358	158	142	242	111	109	191	65
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	34	317	98	124	358	158	142	242	111	109	191	65
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	37	344	106	135	388	171	154	263	120	118	207	71
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	37	344	106	135	388	171	154	263	120	118	207	71
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	37	344	106	135	388	171	154	263	120	118	207	71
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.76	0.24	1.00	1.00	1.00	0.37	0.63	1.00	1.00	0.75	0.25
Final Sat.:	1760	1344	416	1760	1760	1760	651	1109	1760	1760	1313	447
Capacity Analysis Module:												
Vol/Sat:	0.02	0.26	0.26	0.08	0.22	0.10	0.24	0.24	0.07	0.07	0.16	0.16
Crit Volume:			450	135				417		118		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.591
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	69	Level Of Service:	A

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	69	472	121	449	773	41	35	470	39	144	201	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	69	472	121	449	773	41	35	470	39	144	201	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
PHF Volume:	80	546	140	519	894	47	40	543	45	166	232	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	80	546	140	519	894	47	40	543	45	166	232	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	80	546	140	571	894	47	40	543	45	333	232	92
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.85	0.15	0.13	1.73	0.14	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	5014	266	226	3041	252	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.05	0.16	0.08	0.16	0.18	0.18	0.18	0.18	0.18	0.09	0.13	0.05
Crit Volume:		273		286					314	166		
Crit Moves:		****		****					****	****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.508
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	46	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	75	266	23	48	134	117	183	782	80	11	236	23
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	75	266	23	48	134	117	183	782	80	11	236	23
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	85	301	26	54	152	132	207	885	91	12	267	26
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	85	301	26	54	152	132	207	885	91	12	267	26
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	85	301	26	54	152	132	207	885	91	50	267	26
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.92	0.08	1.00	1.00	1.00	0.38	1.62	1.00	0.41	1.59	1.00
Final Sat.:	1850	1703	147	1850	1850	1850	702	2998	1850	761	2939	1850
Capacity Analysis Module:												
Vol/Sat:	0.05	0.18	0.18	0.03	0.08	0.07	0.30	0.30	0.05	0.02	0.09	0.01
Crit Volume:			327	54				546		12		
Crit Moves:			****	****				****		****		

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #1 1: San Carlos Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.491
Loss Time (sec):	40	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	122	Level Of Service:	A

Street Name:	El Camino Real						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Protected			Permitted		
Rights:	Ignore			Include			Include			Ignore		
Min. Green:	2	5	0	0	5	5	1	0	1	0	0	0
Y+R:	3.5	4.4	0.0	0.0	4.4	4.4	4.6	0.0	4.6	0.0	0.0	0.0
Lanes:	1	0 2	0 0	0	0 2	0 1	2	0 0	0 1	0	0 0	0 0
Volume Module:												
Base Vol:	171	987	0	0	831	394	224	0	177	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	171	987	0	0	831	394	224	0	177	0	0	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.88	0.88	0.00	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.00
PHF Volume:	194	1117	0	0	940	446	254	0	200	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	194	1117	0	0	940	446	254	0	200	0	0	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	0.00
FinalVolume:	194	1117	0	0	940	446	279	0	200	0	0	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	0.00	0.00	2.00	1.00	2.00	0.00	1.00	0.00	0.00	0.00
Final Sat.:	1760	3520	0	0	3520	1760	3520	0	1760	0	0	0
Capacity Analysis Module:												
Vol/Sat:	0.11	0.32	0.00	0.00	0.27	0.25	0.08	0.00	0.11	0.00	0.00	0.00
Crit Volume:	194				470				200		0	
Crit Moves:	****				****				****			

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #2 Alameda de las Pulgas & San Carlos Ave

Cycle (sec):	80	Critical Vol./Cap.(X):	0.605
Loss Time (sec):	8	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	44	Level Of Service:	B

Street Name:	Alameda de las Pulgas						San Carlos Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Permitted			Protected		
Rights:	Include			Ignore			Include			Ignore		
Min. Green:	4	0	4	0	0	0	0	7	7	4	7	0
Y+R:	4.2	0.0	4.2	0.0	0.0	0.0	0.0	4.2	4.2	4.0	4.2	0.0
Lanes:	1 0	0	0 1	0	0	0 0	0	0 1	0 1	1 0	1 0	0
Volume Module:												
Base Vol:	249	0	260	0	0	0	0	361	235	340	678	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	249	0	260	0	0	0	0	361	235	340	678	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.00	0.90	0.90	0.90	0.90	0.90	0.00
PHF Volume:	276	0	288	0	0	0	0	400	260	377	751	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	276	0	288	0	0	0	0	400	260	377	751	0
PCE Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
FinalVolume:	276	0	288	0	0	0	0	400	260	377	751	0
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	1.00	0.00
Final Sat.:	1760	0	1760	0	0	0	0	1760	1760	1760	1760	0
Capacity Analysis Module:												
Vol/Sat:	0.16	0.00	0.16	0.00	0.00	0.00	0.00	0.23	0.15	0.21	0.43	0.00
Crit Volume:			288			0			400		377	
Crit Moves:			****						****		****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #3 Brittan Ave & Alameda de las Pulgas

Cycle (sec):	85	Critical Vol./Cap.(X):	0.714
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	99	Level Of Service:	C

Street Name:	Alameda de las Pulgas						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	5	10	10	5	10	10	5	5	5	5	5	5
Y+R:	4.0	4.9	4.9	4.0	4.9	4.9	4.2	4.2	4.2	4.2	4.2	4.2
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	0	0 1	1 0	0	1 0
Volume Module:												
Base Vol:	53	339	89	81	327	142	119	183	62	134	299	137
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	53	339	89	81	327	142	119	183	62	134	299	137
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
PHF Volume:	63	401	105	96	386	168	141	216	73	158	353	162
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	63	401	105	96	386	168	141	216	73	158	353	162
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	63	401	105	96	386	168	281	216	73	158	353	162
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.79	0.21	1.00	1.00	1.00	0.39	0.61	1.00	1.00	0.69	0.31
Final Sat.:	1760	1394	366	1760	1760	1760	694	1066	1760	1760	1207	553
Capacity Analysis Module:												
Vol/Sat:	0.04	0.29	0.29	0.05	0.22	0.10	0.20	0.20	0.04	0.09	0.29	0.29
Crit Volume:			506	96			141					515
Crit Moves:			****	****			****					****

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #4 Brittan Ave & El Camino Real

Cycle (sec):	130	Critical Vol./Cap.(X):	0.687
Loss Time (sec):	16	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	91	Level Of Service:	B

Street Name:	El Camino Real						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	4	10	10	4	10	10	10	10	10	9	9	9
Y+R:	3.0	4.5	4.5	3.0	4.5	4.5	4.2	4.2	4.2	3.7	3.7	3.7
Lanes:	1 0	2 0	1	2 0	2 1	0	0 1	0 1	0	0 1	1 0	1
Volume Module:												
Base Vol:	101	1002	85	199	816	54	64	254	74	277	440	227
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	101	1002	85	199	816	54	64	254	74	277	440	227
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	110	1087	92	216	885	59	69	276	80	301	477	246
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	110	1087	92	216	885	59	69	276	80	301	477	246
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	110	1087	92	238	885	59	139	276	80	601	477	246
Saturation Flow Module:												
Sat/Lane:	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	2.00	2.81	0.19	0.39	1.29	0.32	1.00	1.00	1.00
Final Sat.:	1760	3520	1760	3520	4952	328	687	2262	571	1760	1760	1760
Capacity Analysis Module:												
Vol/Sat:	0.06	0.31	0.05	0.07	0.18	0.18	0.10	0.12	0.14	0.17	0.27	0.14
Crit Volume:		544			119			69			477	
Crit Moves:		****			****			****			****	

Level Of Service Computation Report
Circular 212 Planning Method (Base Volume Alternative)

Intersection #5 Brittan Ave & Old County Rd

Cycle (sec):	130	Critical Vol./Cap.(X):	0.494
Loss Time (sec):	12	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	45	Level Of Service:	A

Street Name:	Old County Rd						Brittan Ave					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	8	8	8	9	9	9	7	7	7	6	6	6
Y+R:	4.6	4.6	4.6	4.1	4.1	4.1	3.7	3.7	3.7	4.5	4.5	4.5
Lanes:	1 0	0	1 0	1 0	1	0 1	0 1	1	0 1	0 1	1	0 1
Volume Module:												
Base Vol:	157	319	19	25	115	158	115	361	66	14	630	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	157	319	19	25	115	158	115	361	66	14	630	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
PHF Volume:	178	361	22	28	130	179	130	409	75	16	713	45
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	178	361	22	28	130	179	130	409	75	16	713	45
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	4.00	1.00	1.00	2.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	178	361	22	28	130	179	521	409	75	32	713	45
Saturation Flow Module:												
Sat/Lane:	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850	1850
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	0.94	0.06	1.00	1.00	1.00	1.00	1.00	1.00	0.09	1.91	1.00
Final Sat.:	1850	1746	104	1850	1850	1850	1850	1850	1850	164	3536	1850
Capacity Analysis Module:												
Vol/Sat:	0.10	0.21	0.21	0.02	0.07	0.10	0.07	0.22	0.04	0.10	0.20	0.02
Crit Volume:			383	28			130				373	
Crit Moves:			****	****			****				****	

Appendix C
Speed Survey Data

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane1

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/23/2016	0	0	4	3	73	259	104	5	1	0	0	0	0	0	449
16:34	0	0	3	3	77	309	88	5	2	0	0	0	0	0	487
17:34	0	0	3	2	57	286	108	10	0	0	0	0	0	0	466
18:34	0	0	2	10	59	252	94	6	0	0	0	0	0	0	423
19:34	0	0	0	2	52	119	39	1	1	0	0	0	0	0	214
20:34	0	1	0	0	47	91	23	0	0	0	0	0	0	0	162
21:34	0	0	0	3	41	61	17	0	0	0	0	0	0	0	122
22:34	0	0	1	0	12	23	11	4	0	0	0	0	0	0	51
23:34	0	0	0	0	1	11	4	1	0	0	0	0	0	0	17
Day Total	0	1	13	23	419	1411	488	32	4	0	0	0	0	0	2391
3/24/2016	0	0	0	0	2	11	3	2	0	0	0	0	0	0	18
01:34	0	0	0	0	0	2	1	0	0	0	0	0	0	0	3
02:34	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5
03:34	0	0	0	0	1	3	2	0	0	0	0	0	0	0	6
04:34	0	0	0	0	0	16	10	0	0	0	0	0	0	0	26
05:34	0	0	1	0	12	37	22	2	0	0	0	0	0	0	74
06:34	0	0	0	3	47	155	49	4	0	0	0	0	0	0	258
07:34	0	0	1	5	108	361	96	6	0	0	0	0	0	0	577
08:34	0	0	0	1	49	244	78	8	0	0	0	0	0	0	380
09:34	0	0	1	3	101	215	31	3	0	0	0	0	0	0	354
10:34	0	0	1	2	65	181	48	1	0	0	0	0	0	0	298
11:34	0	2	3	4	83	215	49	4	1	0	0	0	0	0	361
12:34	0	0	0	1	53	188	73	6	0	0	0	0	0	0	321
13:34	0	0	0	2	56	237	73	4	0	0	0	0	0	0	372
14:34	0	0	1	3	97	245	85	5	0	0	0	0	0	0	436
15:34	0	0	1	1	60	261	98	7	0	0	0	0	0	0	428
16:34	0	0	1	4	51	298	107	3	0	0	0	0	0	0	464
17:34	0	0	0	8	70	281	96	4	0	0	0	0	0	0	459
18:34	0	0	0	10	61	237	98	4	0	0	0	0	0	0	410
19:34	0	0	0	2	44	146	38	0	1	0	0	0	0	0	231
20:34	0	0	0	6	40	109	35	1	0	0	0	0	0	0	191
21:34	0	0	0	0	25	69	17	5	0	1	0	0	0	0	117
22:34	0	0	0	1	11	34	11	1	1	1	0	0	0	0	60
23:34	0	0	0	0	6	16	9	1	0	0	0	0	0	0	32
Day Total	0	2	10	56	1043	3563	1131	71	3	2	0	0	0	0	5881

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane1

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/25/2016	0	0	0	0	4	9	1	0	0	0	0	0	0	0	14
01:34	0	0	0	1	0	4	2	0	0	0	0	0	0	0	7
02:34	0	0	0	0	2	4	1	0	0	0	0	0	0	0	7
03:34	0	0	0	0	1	6	1	1	0	0	0	0	0	0	9
04:34	0	0	0	0	4	14	7	2	0	0	0	0	0	0	27
05:34	0	0	0	1	11	34	20	2	0	0	0	0	0	0	68
06:34	0	0	0	1	37	125	43	1	0	0	0	0	0	0	207
07:34	0	0	0	3	106	313	84	3	0	0	0	0	0	0	509
08:34	0	0	0	1	67	231	64	5	0	0	0	0	0	0	368
09:34	0	1	5	1	69	207	56	2	0	0	0	0	0	0	341
10:34	1	0	1	1	66	220	45	4	0	0	0	0	0	0	338
11:34	0	0	0	1	91	233	58	6	0	0	0	0	0	0	389
12:34	0	0	0	1	71	224	71	0	0	0	0	0	0	0	367
13:34	0	0	0	3	45	225	59	5	0	0	0	0	0	0	337
14:34	0	0	2	11	72	257	101	7	2	0	0	0	0	0	452
15:34	0	0	2	5	59	249	103	6	1	0	0	0	0	0	425
16:34	0	0	2	2	89	294	95	4	0	0	0	0	0	0	486
17:34	0	0	1	3	68	264	97	11	1	0	0	0	0	0	445
18:34	0	0	0	1	48	202	82	5	0	0	0	0	0	0	338
19:34	0	0	0	2	64	144	29	1	0	0	0	0	0	0	240
20:34	0	0	2	2	59	80	24	3	1	0	0	0	0	0	171
21:34	0	0	0	2	41	80	18	1	0	0	0	0	0	0	142
22:34	0	0	0	1	21	58	21	2	0	0	0	0	0	0	103
23:34	0	0	0	1	7	26	10	1	0	0	0	0	0	0	45
Day Total	1	1	15	44	1102	3503	1092	72	5	0	0	0	0	0	5835
3/26/2016	0	1	1	0	4	9	5	0	1	0	0	0	0	0	21
01:34	0	0	0	0	2	9	6	2	0	0	0	0	0	0	19
02:34	0	0	0	1	2	4	3	0	0	0	0	0	0	0	10
03:34	0	0	0	0	2	1	2	1	0	0	0	0	0	0	6
04:34	0	0	0	0	1	4	4	0	0	0	0	0	0	0	9
05:34	0	0	0	1	6	14	7	1	0	0	0	0	0	0	29
06:34	0	0	0	1	8	45	15	5	0	0	0	0	0	0	74
07:34	0	0	0	1	31	103	36	5	0	0	0	0	0	0	176
08:34	0	0	1	3	39	186	62	4	2	0	0	0	0	0	297
09:34	0	0	4	4	77	231	61	2	0	0	0	0	0	0	379
10:34	0	0	3	7	64	199	57	6	0	0	0	0	0	0	336
11:34	0	0	2	8	62	219	64	4	1	0	0	0	0	0	360
12:34	0	0	1	3	54	228	71	3	0	0	1	0	0	0	361
13:34	0	0	1	6	45	218	77	7	0	0	0	0	0	0	354
14:34	1	0	4	5	68	185	58	3	2	0	0	0	0	0	326
15:34	0	0	0	6	34	207	81	6	1	0	0	0	0	0	335
16:34	0	0	1	4	40	207	70	6	0	0	0	0	0	0	328
17:34	0	0	1	3	30	162	64	4	1	0	0	0	0	0	265
18:34	1	0	0	1	45	153	52	3	0	0	0	0	0	0	255
19:34	0	0	1	0	31	103	31	2	0	0	0	0	0	0	168
20:34	0	0	0	0	29	80	30	0	0	0	0	0	0	0	139
21:34	0	0	0	2	34	76	14	2	0	0	0	0	0	0	128
22:34	0	0	0	0	23	53	9	2	0	0	0	0	0	0	87
23:34	0	0	1	2	16	30	3	0	0	0	0	0	0	0	52
Day Total	2	1	21	58	747	2726	882	68	8	0	1	0	0	0	4514

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane1

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/27/2016	0	0	0	0	14	15	6	0	0	0	0	0	0	0	35
01:34	0	0	1	0	11	8	6	0	0	0	0	0	0	0	26
02:34	0	0	0	0	3	9	5	1	0	0	0	0	0	0	18
03:34	0	0	0	0	1	3	3	0	0	0	0	0	0	0	7
04:34	0	0	0	1	0	6	3	0	0	0	0	0	0	0	10
05:34	0	0	0	1	6	4	0	3	0	0	0	0	0	0	14
06:34	0	0	1	0	4	33	12	1	0	0	0	0	0	0	51
07:34	0	0	0	1	16	59	24	4	1	0	0	0	0	0	105
08:34	0	0	4	5	32	95	26	6	0	0	0	0	0	0	168
09:34	0	0	4	4	56	150	43	3	1	0	0	0	0	0	261
10:34	0	0	2	6	56	173	50	4	0	0	0	0	0	0	291
11:34	0	0	2	5	45	217	58	1	0	0	0	0	0	0	328
12:34	0	0	1	3	38	159	62	4	0	0	0	0	0	0	267
13:34	0	0	2	1	35	142	48	4	1	0	0	0	0	0	233
14:34	0	0	2	4	40	149	51	4	0	0	0	0	0	0	250
15:34	0	0	1	5	34	167	57	1	0	0	0	0	0	0	265
16:34	0	0	0	3	23	153	65	5	0	0	0	0	0	0	249
17:34	0	0	1	0	26	116	39	6	1	0	0	0	0	0	189
18:34	0	0	1	2	22	101	61	3	3	0	0	0	0	0	193
19:34	0	0	1	6	59	116	23	3	0	0	0	0	0	0	208
20:34	0	0	0	1	39	82	13	5	0	0	0	0	0	0	140
21:34	0	0	0	2	19	28	6	2	0	0	0	0	0	0	57
22:34	0	0	0	0	8	22	7	2	0	0	0	0	0	0	39
23:34	0	0	0	1	5	10	5	0	0	0	0	0	0	0	21
Day Total	0	0	23	51	592	2017	673	62	7	0	0	0	0	0	3425
3/28/2016	0	0	0	0	1	4	2	2	1	1	0	0	0	0	11
01:34	0	0	0	0	2	4	0	0	0	0	0	0	0	0	6
02:34	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
03:34	0	0	0	0	0	5	3	0	0	0	0	0	0	0	8
04:34	0	0	0	0	4	16	6	0	0	0	0	0	0	0	26
05:34	0	0	2	1	4	32	17	1	1	0	0	0	0	0	58
06:34	0	0	1	0	38	125	65	0	0	0	0	0	0	0	229
07:34	0	0	1	2	70	324	120	6	0	0	0	0	0	0	523
08:34	0	0	3	1	70	236	77	4	0	0	0	0	0	0	391
09:34	0	1	1	2	60	174	52	5	0	0	0	0	0	0	295
10:34	0	0	0	0	23	61	17	3	0	0	0	0	0	0	104
Day Total	0	1	8	6	272	981	360	21	2	1	0	0	0	0	1652
Lane1 Total	3	6	90	238	4175	14201	4626	326	29	3	1	0	0	0	23698

85 percentile = 35

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane2

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/23/2016	0	0	0	0	13	66	151	146	43	14	1	1	1	0	436
16:34	0	0	0	0	9	56	187	176	67	16	5	0	0	0	516
17:34	0	0	1	0	10	64	157	180	61	19	7	1	0	0	500
18:34	0	0	0	4	2	28	94	127	75	14	6	0	0	0	350
19:34	0	0	0	0	8	31	108	101	35	16	2	0	0	0	301
20:34	0	0	0	0	2	24	75	55	20	8	2	2	0	0	188
21:34	0	0	0	2	2	11	39	29	12	4	0	0	0	0	99
22:34	0	0	1	0	0	6	15	18	12	5	0	0	0	0	57
23:34	0	0	0	1	0	1	9	8	6	2	4	1	0	0	32
Day Total	0	0	2	7	46	287	835	840	331	98	27	5	1	0	2479
3/24/2016	0	0	0	0	0	2	3	7	5	3	0	0	0	0	20
01:34	0	0	0	0	0	1	0	3	1	1	0	0	0	0	6
02:34	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
03:34	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2
04:34	0	0	0	0	0	0	5	1	0	2	1	0	0	0	9
05:34	0	1	0	0	1	2	20	10	7	3	0	0	0	0	44
06:34	0	1	0	0	2	14	57	61	28	12	1	0	0	0	176
07:34	0	1	0	2	8	47	193	181	54	19	5	0	0	0	510
08:34	0	1	0	0	5	30	123	150	48	12	2	0	0	0	371
09:34	0	1	0	2	9	34	109	96	43	12	5	0	0	0	311
10:34	0	0	0	7	9	40	97	80	42	10	3	1	0	1	290
11:34	0	0	2	0	7	40	105	108	31	14	3	0	1	0	311
12:34	0	0	0	2	9	54	125	100	37	11	2	3	0	0	343
13:34	0	0	0	0	13	59	125	117	39	12	2	0	0	0	367
14:34	0	0	0	6	10	54	166	155	60	8	3	0	0	0	462
15:34	0	0	2	0	1	55	155	142	58	6	3	0	0	0	422
16:34	0	0	1	0	3	56	159	173	57	21	3	0	0	0	473
17:34	0	1	1	0	8	46	149	164	67	22	4	2	0	0	464
18:34	0	0	1	0	1	17	124	165	80	14	3	4	0	0	409
19:34	0	0	0	1	2	42	118	85	30	11	2	0	0	0	291
20:34	0	0	0	0	6	28	56	78	17	5	4	0	0	0	194
21:34	0	0	0	0	1	9	49	31	17	3	3	1	0	0	114
22:34	0	0	0	0	0	5	19	21	8	5	4	0	0	0	62
23:34	0	0	1	0	0	6	11	9	4	4	0	0	0	0	35
Day Total	0	6	8	20	95	642	1968	1941	734	210	53	11	1	1	5690

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane2

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/25/2016	0	0	0	0	2	1	2	3	0	0	0	0	0	0	8
01:34	0	0	0	0	0	0	1	1	0	3	0	0	0	0	5
02:34	0	0	0	0	0	1	0	4	0	0	0	0	0	0	5
03:34	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
04:34	0	0	0	0	0	2	7	4	3	2	0	0	0	0	18
05:34	0	1	0	0	1	6	7	15	8	4	0	0	0	0	42
06:34	0	3	0	0	3	9	46	45	23	4	3	1	0	0	137
07:34	0	0	2	2	20	52	138	180	58	15	1	1	0	0	469
08:34	0	3	3	5	6	24	116	119	43	12	7	1	0	0	339
09:34	0	1	0	3	3	18	82	117	40	18	3	0	0	0	285
10:34	0	0	2	0	6	39	93	123	47	15	3	0	0	0	328
11:34	0	0	1	0	6	36	121	144	51	14	0	0	0	0	373
12:34	0	0	1	0	4	32	113	101	48	8	7	0	0	0	314
13:34	0	0	2	4	21	56	132	109	39	6	2	0	0	0	371
14:34	0	0	0	0	13	74	166	134	51	15	6	0	0	0	459
15:34	0	1	0	0	8	44	149	145	53	6	3	0	0	0	409
16:34	0	0	0	1	4	69	150	177	52	15	4	0	0	0	472
17:34	0	0	0	0	9	58	138	165	71	26	7	0	0	0	474
18:34	0	0	0	0	4	30	108	133	58	21	1	0	0	0	355
19:34	0	0	0	0	6	27	78	86	25	9	0	0	0	0	231
20:34	0	0	0	0	5	28	66	62	29	10	0	0	0	1	201
21:34	0	0	0	0	4	24	66	40	12	4	1	0	0	0	151
22:34	0	0	0	0	1	11	40	33	18	4	1	0	0	1	109
23:34	0	0	0	0	2	5	15	14	11	0	0	0	1	0	48
Day Total	0	9	11	15	128	646	1834	1955	740	212	49	3	1	2	5605
3/26/2016	0	0	0	0	0	3	8	8	8	1	1	0	0	0	29
01:34	0	0	0	0	1	0	9	6	4	3	0	0	0	0	23
02:34	0	0	0	0	0	0	7	4	0	1	0	0	0	0	12
03:34	0	0	0	0	0	1	2	2	0	0	0	0	0	0	5
04:34	0	1	0	0	0	2	2	1	1	0	1	0	0	0	8
05:34	0	0	0	0	2	1	2	6	3	2	1	0	0	0	17
06:34	0	5	1	0	2	4	17	14	6	5	0	0	0	0	54
07:34	0	4	1	0	2	12	49	43	17	9	2	0	0	0	139
08:34	0	3	0	0	0	9	80	77	27	9	3	1	0	0	209
09:34	0	4	1	0	6	37	98	92	58	14	2	1	0	0	313
10:34	1	0	0	0	6	27	94	127	41	15	5	0	0	0	316
11:34	0	0	0	0	5	46	124	128	53	13	4	0	0	0	373
12:34	0	0	0	1	9	47	130	110	41	16	3	0	0	0	357
13:34	0	2	0	0	2	24	125	130	48	16	4	1	0	0	352
14:34	0	2	1	4	13	31	101	126	48	13	1	0	0	0	340
15:34	0	2	0	0	5	35	100	89	55	4	6	0	0	0	296
16:34	0	0	2	2	2	26	100	145	50	9	4	0	0	0	340
17:34	0	1	0	0	5	27	82	105	53	16	5	0	0	0	294
18:34	0	0	0	1	2	18	69	83	45	15	3	0	0	0	236
19:34	0	0	0	0	2	30	92	46	16	7	1	3	0	0	197
20:34	0	0	0	0	3	20	64	29	29	6	2	1	1	0	155
21:34	0	0	0	0	2	25	36	41	19	6	3	0	0	0	132
22:34	0	0	0	0	1	13	28	31	15	7	1	0	0	0	96
23:34	0	0	0	0	2	4	22	17	7	3	1	1	0	0	57
Day Total	1	24	6	8	72	442	1441	1460	644	190	53	8	1	0	4350

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Lane2

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/27/2016	0	0	0	1	1	2	9	7	5	2	1	1	0	0	29
01:34	0	0	0	0	0	2	4	7	2	0	0	0	0	0	15
02:34	0	0	0	0	0	0	0	1	0	1	1	0	0	0	3
03:34	0	0	0	0	0	1	2	0	0	0	0	0	0	0	3
04:34	0	0	0	0	1	0	2	2	0	0	1	0	0	0	6
05:34	0	0	0	0	0	3	2	3	1	0	0	0	0	0	9
06:34	0	0	0	0	1	3	19	11	5	1	2	0	0	0	42
07:34	0	2	0	0	0	7	23	34	25	6	1	0	0	0	98
08:34	0	2	2	0	3	20	64	60	31	9	6	0	0	0	197
09:34	0	3	0	0	1	15	77	72	45	14	5	1	0	0	233
10:34	0	3	0	0	3	26	83	91	58	15	6	0	1	0	286
11:34	0	3	0	1	7	17	73	100	42	8	3	0	0	0	254
12:34	0	0	0	1	5	24	100	83	51	12	9	0	0	0	285
13:34	0	2	0	0	2	30	75	82	38	16	6	0	0	0	251
14:34	0	1	1	0	4	10	65	102	47	16	2	0	0	0	248
15:34	0	2	1	0	2	31	68	91	34	13	2	2	0	0	246
16:34	0	0	1	0	3	14	52	77	44	10	2	0	0	0	203
17:34	0	0	0	1	2	8	50	55	40	16	6	0	0	0	178
18:34	0	1	1	1	2	12	43	66	29	11	3	1	0	0	170
19:34	0	0	0	0	3	22	61	53	27	6	1	0	0	0	173
20:34	0	0	0	0	1	15	36	44	19	13	1	0	0	0	129
21:34	0	0	0	1	2	8	22	20	13	5	2	0	0	0	73
22:34	0	0	0	0	0	1	8	10	6	4	1	0	0	0	30
23:34	0	0	0	0	0	3	3	7	2	3	0	0	1	0	19
Day Total	0	19	6	6	43	274	941	1078	564	181	61	5	2	0	3180
3/28/2016	0	0	0	0	0	1	4	1	0	0	0	0	0	0	6
01:34	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3
02:34	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
03:34	0	0	0	0	0	1	1	0	0	1	0	0	0	0	3
04:34	0	0	0	0	0	3	3	6	2	2	0	0	0	0	16
05:34	0	0	0	0	0	4	5	7	4	5	1	1	0	0	27
06:34	0	0	1	1	2	18	58	51	29	3	1	0	1	0	165
07:34	0	2	2	1	7	35	179	132	53	16	5	0	0	0	432
08:34	0	0	4	2	5	27	99	119	46	13	1	0	0	0	316
09:34	0	0	2	0	9	33	86	85	39	14	2	0	0	0	270
10:34	0	1	0	0	0	14	31	23	11	0	1	0	0	0	81
Day Total	0	3	9	4	23	138	466	426	184	54	11	1	1	0	1320
Lane2 Total	1	61	42	60	407	2429	7485	7700	3197	945	254	33	7	3	22624

85 percentile = 46

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Combined

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/23/2016	0	0	4	3	86	325	255	151	44	14	1	1	1	0	885
16:34	0	0	3	3	86	365	275	181	69	16	5	0	0	0	1003
17:34	0	0	4	2	67	350	265	190	61	19	7	1	0	0	966
18:34	0	0	2	14	61	280	188	133	75	14	6	0	0	0	773
19:34	0	0	0	2	60	150	147	102	36	16	2	0	0	0	515
20:34	0	1	0	0	49	115	98	55	20	8	2	2	0	0	350
21:34	0	0	0	5	43	72	56	29	12	4	0	0	0	0	221
22:34	0	0	2	0	12	29	26	22	12	5	0	0	0	0	108
23:34	0	0	0	1	1	12	13	9	6	2	4	1	0	0	49
Day Total	0	1	15	30	465	1698	1323	872	335	98	27	5	1	0	4870
3/24/2016	0	0	0	0	2	13	6	9	5	3	0	0	0	0	38
01:34	0	0	0	0	0	3	1	3	1	1	0	0	0	0	9
02:34	0	0	0	0	1	2	2	3	1	0	0	0	0	0	9
03:34	0	0	0	0	1	4	2	1	0	0	0	0	0	0	8
04:34	0	0	0	0	0	16	15	1	0	2	1	0	0	0	35
05:34	0	1	1	0	13	39	42	12	7	3	0	0	0	0	118
06:34	0	1	0	3	49	169	106	65	28	12	1	0	0	0	434
07:34	0	1	1	7	116	408	289	187	54	19	5	0	0	0	1087
08:34	0	1	0	1	54	274	201	158	48	12	2	0	0	0	751
09:34	0	1	1	5	110	249	140	99	43	12	5	0	0	0	665
10:34	0	0	1	9	74	221	145	81	42	10	3	1	0	1	588
11:34	0	2	5	4	90	255	154	112	32	14	3	0	1	0	672
12:34	0	0	0	3	62	242	198	106	37	11	2	3	0	0	664
13:34	0	0	0	2	69	296	198	121	39	12	2	0	0	0	739
14:34	0	0	1	9	107	299	251	160	60	8	3	0	0	0	898
15:34	0	0	3	1	61	316	253	149	58	6	3	0	0	0	850
16:34	0	0	2	4	54	354	266	176	57	21	3	0	0	0	937
17:34	0	1	1	8	78	327	245	168	67	22	4	2	0	0	923
18:34	0	0	1	10	62	254	222	169	80	14	3	4	0	0	819
19:34	0	0	0	3	46	188	156	85	31	11	2	0	0	0	522
20:34	0	0	0	6	46	137	91	79	17	5	4	0	0	0	385
21:34	0	0	0	0	26	78	66	36	17	4	3	1	0	0	231
22:34	0	0	0	1	11	39	30	22	9	6	4	0	0	0	122
23:34	0	0	1	0	6	22	20	10	4	4	0	0	0	0	67
Day Total	0	8	18	76	1138	4205	3099	2012	737	212	53	11	1	1	11571

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Combined

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/25/2016	0	0	0	0	6	10	3	3	0	0	0	0	0	0	22
01:34	0	0	0	1	0	4	3	1	0	3	0	0	0	0	12
02:34	0	0	0	0	2	5	1	4	0	0	0	0	0	0	12
03:34	0	0	0	0	1	6	1	2	0	1	0	0	0	0	11
04:34	0	0	0	0	4	16	14	6	3	2	0	0	0	0	45
05:34	0	1	0	1	12	40	27	17	8	4	0	0	0	0	110
06:34	0	3	0	1	40	134	89	46	23	4	3	1	0	0	344
07:34	0	0	2	5	126	365	222	183	58	15	1	1	0	0	978
08:34	0	3	3	6	73	255	180	124	43	12	7	1	0	0	707
09:34	0	2	5	4	72	225	138	119	40	18	3	0	0	0	626
10:34	1	0	3	1	72	259	138	127	47	15	3	0	0	0	666
11:34	0	0	1	1	97	269	179	150	51	14	0	0	0	0	762
12:34	0	0	1	1	75	256	184	101	48	8	7	0	0	0	681
13:34	0	0	2	7	66	281	191	114	39	6	2	0	0	0	708
14:34	0	0	2	11	85	331	267	141	53	15	6	0	0	0	911
15:34	0	1	2	5	67	293	252	151	54	6	3	0	0	0	834
16:34	0	0	2	3	93	363	245	181	52	15	4	0	0	0	958
17:34	0	0	1	3	77	322	235	176	72	26	7	0	0	0	919
18:34	0	0	0	1	52	232	190	138	58	21	1	0	0	0	693
19:34	0	0	0	2	70	171	107	87	25	9	0	0	0	0	471
20:34	0	0	2	2	64	108	90	65	30	10	0	0	0	1	372
21:34	0	0	0	2	45	104	84	41	12	4	1	0	0	0	293
22:34	0	0	0	1	22	69	61	35	18	4	1	0	0	1	212
23:34	0	0	0	1	9	31	25	15	11	0	0	0	1	0	93
Day Total	1	10	26	59	1230	4149	2926	2027	745	212	49	3	1	2	11440
3/26/2016	0	1	1	0	4	12	13	8	9	1	1	0	0	0	50
01:34	0	0	0	0	3	9	15	8	4	3	0	0	0	0	42
02:34	0	0	0	1	2	4	10	4	0	1	0	0	0	0	22
03:34	0	0	0	0	2	2	4	3	0	0	0	0	0	0	11
04:34	0	1	0	0	1	6	6	1	1	0	1	0	0	0	17
05:34	0	0	0	1	8	15	9	7	3	2	1	0	0	0	46
06:34	0	5	1	1	10	49	32	19	6	5	0	0	0	0	128
07:34	0	4	1	1	33	115	85	48	17	9	2	0	0	0	315
08:34	0	3	1	3	39	195	142	81	29	9	3	1	0	0	506
09:34	0	4	5	4	83	268	159	94	58	14	2	1	0	0	692
10:34	1	0	3	7	70	226	151	133	41	15	5	0	0	0	652
11:34	0	0	2	8	67	265	188	132	54	13	4	0	0	0	733
12:34	0	0	1	4	63	275	201	113	41	16	4	0	0	0	718
13:34	0	2	1	6	47	242	202	137	48	16	4	1	0	0	706
14:34	1	2	5	9	81	216	159	129	50	13	1	0	0	0	666
15:34	0	2	0	6	39	242	181	95	56	4	6	0	0	0	631
16:34	0	0	3	6	42	233	170	151	50	9	4	0	0	0	668
17:34	0	1	1	3	35	189	146	109	54	16	5	0	0	0	559
18:34	1	0	0	2	47	171	121	86	45	15	3	0	0	0	491
19:34	0	0	1	0	33	133	123	48	16	7	1	3	0	0	365
20:34	0	0	0	0	32	100	94	29	29	6	2	1	1	0	294
21:34	0	0	0	2	36	101	50	43	19	6	3	0	0	0	260
22:34	0	0	0	0	24	66	37	33	15	7	1	0	0	0	183
23:34	0	0	1	2	18	34	25	17	7	3	1	1	0	0	109
Day Total	3	25	27	66	819	3168	2323	1528	652	190	54	8	1	0	8864

City of San Carlos

Alameda before Melendy
San Carlos, Ca 94070
Phone or Tag Line

Site Code: 00000054
Station ID:

Latitude: 0' 0.000 South

Combined

Date\Speed	1-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	>70	Total
3/27/2016	0	0	0	1	15	17	15	7	5	2	1	1	0	0	64
01:34	0	0	1	0	11	10	10	7	2	0	0	0	0	0	41
02:34	0	0	0	0	3	9	5	2	0	1	1	0	0	0	21
03:34	0	0	0	0	1	4	5	0	0	0	0	0	0	0	10
04:34	0	0	0	1	1	6	5	2	0	0	1	0	0	0	16
05:34	0	0	0	1	6	7	2	6	1	0	0	0	0	0	23
06:34	0	0	1	0	5	36	31	12	5	1	2	0	0	0	93
07:34	0	2	0	1	16	66	47	38	26	6	1	0	0	0	203
08:34	0	2	6	5	35	115	90	66	31	9	6	0	0	0	365
09:34	0	3	4	4	57	165	120	75	46	14	5	1	0	0	494
10:34	0	3	2	6	59	199	133	95	58	15	6	0	1	0	577
11:34	0	3	2	6	52	234	131	101	42	8	3	0	0	0	582
12:34	0	0	1	4	43	183	162	87	51	12	9	0	0	0	552
13:34	0	2	2	1	37	172	123	86	39	16	6	0	0	0	484
14:34	0	1	3	4	44	159	116	106	47	16	2	0	0	0	498
15:34	0	2	2	5	36	198	125	92	34	13	2	2	0	0	511
16:34	0	0	1	3	26	167	117	82	44	10	2	0	0	0	452
17:34	0	0	1	1	28	124	89	61	41	16	6	0	0	0	367
18:34	0	1	2	3	24	113	104	69	32	11	3	1	0	0	363
19:34	0	0	1	6	62	138	84	56	27	6	1	0	0	0	381
20:34	0	0	0	1	40	97	49	49	19	13	1	0	0	0	269
21:34	0	0	0	3	21	36	28	22	13	5	2	0	0	0	130
22:34	0	0	0	0	8	23	15	12	6	4	1	0	0	0	69
23:34	0	0	0	1	5	13	8	7	2	3	0	0	1	0	40
Day Total	0	19	29	57	635	2291	1614	1140	571	181	61	5	2	0	6605
3/28/2016	0	0	0	0	1	5	6	3	1	1	0	0	0	0	17
01:34	0	0	0	0	2	5	0	2	0	0	0	0	0	0	9
02:34	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2
03:34	0	0	0	0	0	6	4	0	0	1	0	0	0	0	11
04:34	0	0	0	0	4	19	9	6	2	2	0	0	0	0	42
05:34	0	0	2	1	4	36	22	8	5	5	1	1	0	0	85
06:34	0	0	2	1	40	143	123	51	29	3	1	0	1	0	394
07:34	0	2	3	3	77	359	299	138	53	16	5	0	0	0	955
08:34	0	0	7	3	75	263	176	123	46	13	1	0	0	0	707
09:34	0	1	3	2	69	207	138	90	39	14	2	0	0	0	565
10:34	0	1	0	0	23	75	48	26	11	0	1	0	0	0	185
Day Total	0	4	17	10	295	1119	826	447	186	55	11	1	1	0	2972
Combined Total	4	67	132	298	4582	16630	12111	8026	3226	948	255	33	7	3	46322

85 percentile = 43

Consulting Group

1617 Clay Street
Oakland, CA 94612
(510) 272-9597

170 Maiden Lane, 5th Floor
San Francisco, CA 94104
(415) 392-9688

801 South Grand Avenue, 11th Floor
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APPENDIX L2:
SIGHT DISTANCE ANALYSIS

1617 Clay Street
Oakland, CA 94612
(510) 272-9597
www.chsconsulting.net

Memorandum

Date: August 24, 2022

To: Steve Noack, Alexis, Mena, Placeworks

From: Magnus Barber and Siqing Yi, CHS Consulting Group

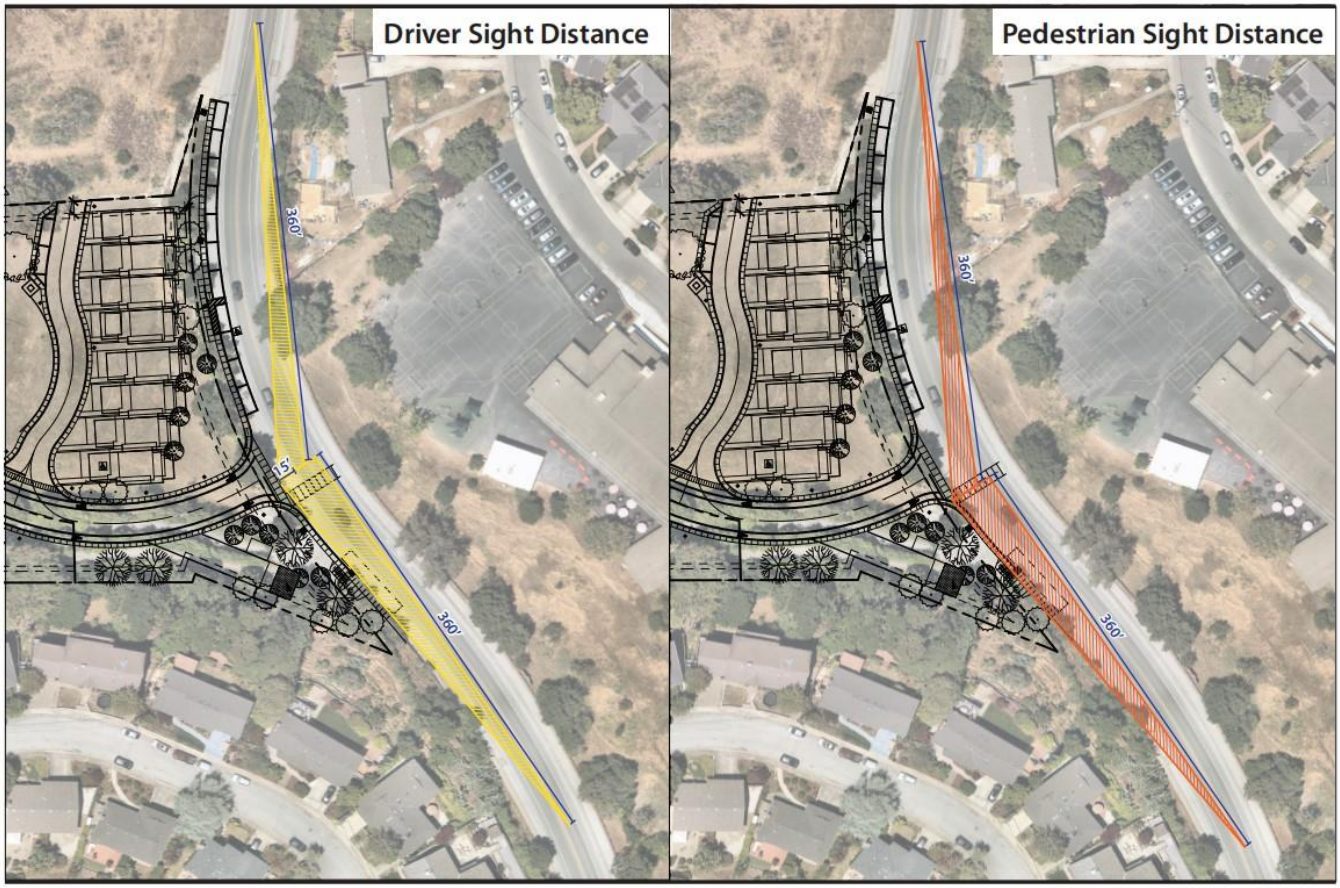
Re: Sight Distance Addendum to 808 Alameda de las Pulgas Transportation Impact Analysis

---

The purpose of this technical memorandum is to elaborate on the mitigation measure to ensure adequate sight distance at the private access road entrance to the Project, which may require removing trees along Alameda de Las Pulgas.

The current line of sight from the Project access road driveway, looking to the north is limited due to the vegetation 200 feet north of the project driveway on the east side of Alameda de las Pulgas. According to the sight distance figure in the Transportation Impact Analysis report (also attached here as **Figure 1**), there are overlaps between the sight triangle and the off-road part of the vegetation. A thorough site visit was conducted on August 20, 2022, to determine if removing the vegetation would be sufficient to address the sight distance issue.

Figure 1 Sight Distance



Figures 2 through 4 summarizes the vegetation conditions. Area A contains one large tree and a few bushes that are all well-trimmed and will not affect the sight distance (even though the crown of the large tree overlaps with the sight triangle from the aerial photo). Area B includes a group of dense bushes right off the roadway fence stretching approximately 60 feet long. This area overlaps with the sight triangle for up to five feet. Between Areas A and B, there are several dead/dried trees with no impact on sight distance.

Figure 2 Vegetation Affecting Sight Distance

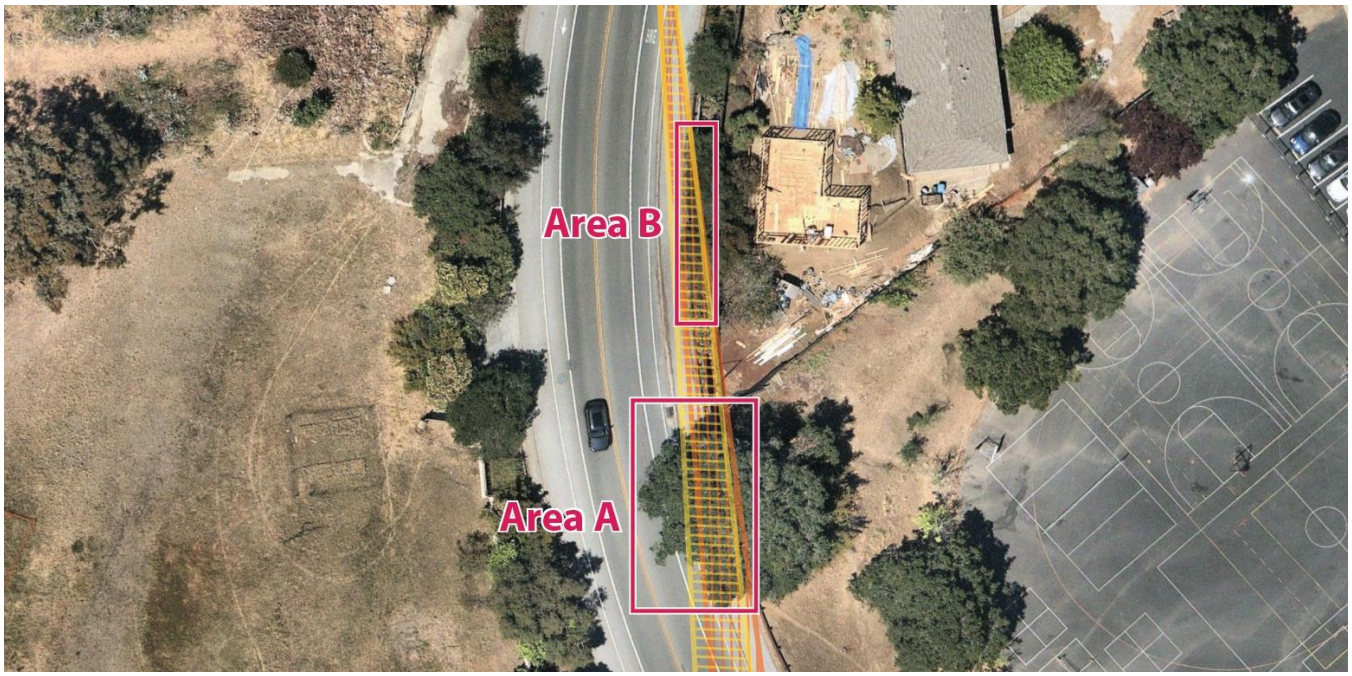
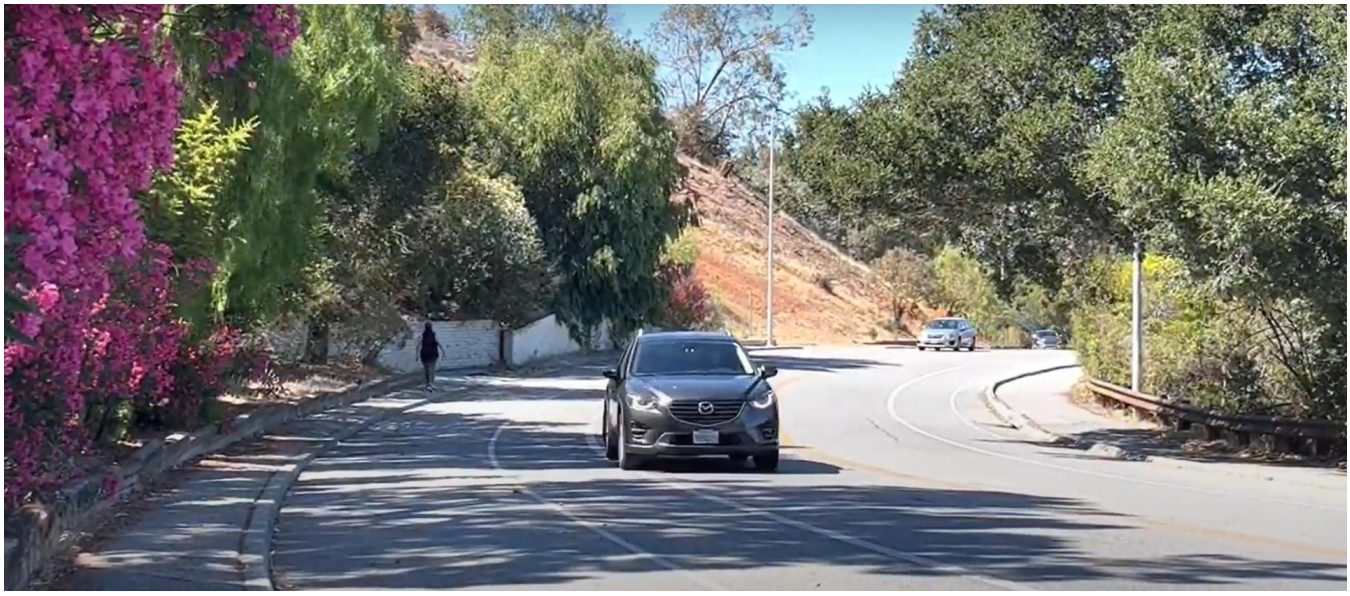


Figure 3 Vegetation in Area A

Figure 4 Vegetation in Area B

Observation of approaching vehicles was made at the starting points of both driver and pedestrian sight distance triangles. Please note that the start point of the driver sight distance triangle is the center point of the project exit lane 15 feet from the southbound travel lane outer boundary, and the start point of the pedestrian sight distance triangle is the center of the crosswalk at the curb. Looking south, sight distance for northbound traffic appears to be adequate. Looking north, southbound approaching vehicles can be seen from up to 700 feet (**Figure 5**), however, after about three to four seconds, a clear sight line is obstructed by the vegetation in Area B for about three seconds, and vehicles reappear in the sight line within the adequate sight distance (360 feet), which would potentially cause unsafe conditions.

Figure 5 Southbound Approaching Vehicles



Further research was performed to determine the feasibility of removing vegetation. **Figure 6** illustrates the boundaries of public right-of-way and private properties. The fence around the property is the parcel boundary of 806 Tamarack Avenue. Currently, Alameda de Las Pulgas is approximately 54 feet wide from the west edge of the sidewalk on the west side to the roadway fence on the east side. However, the public right-of-way is 70 feet according to the San Mateo County Assessor's Map (**Figure 7**), and the steep space that is approximately eight feet wide between the roadway fence and the property fence belongs to public right-of-way. And it is confirmed in the field that the vegetation in Area B that obstructs the sight line is within public right-of-way (**Figure 8**).

Figure 6 Public Right-of-way and Private Property Boundaries

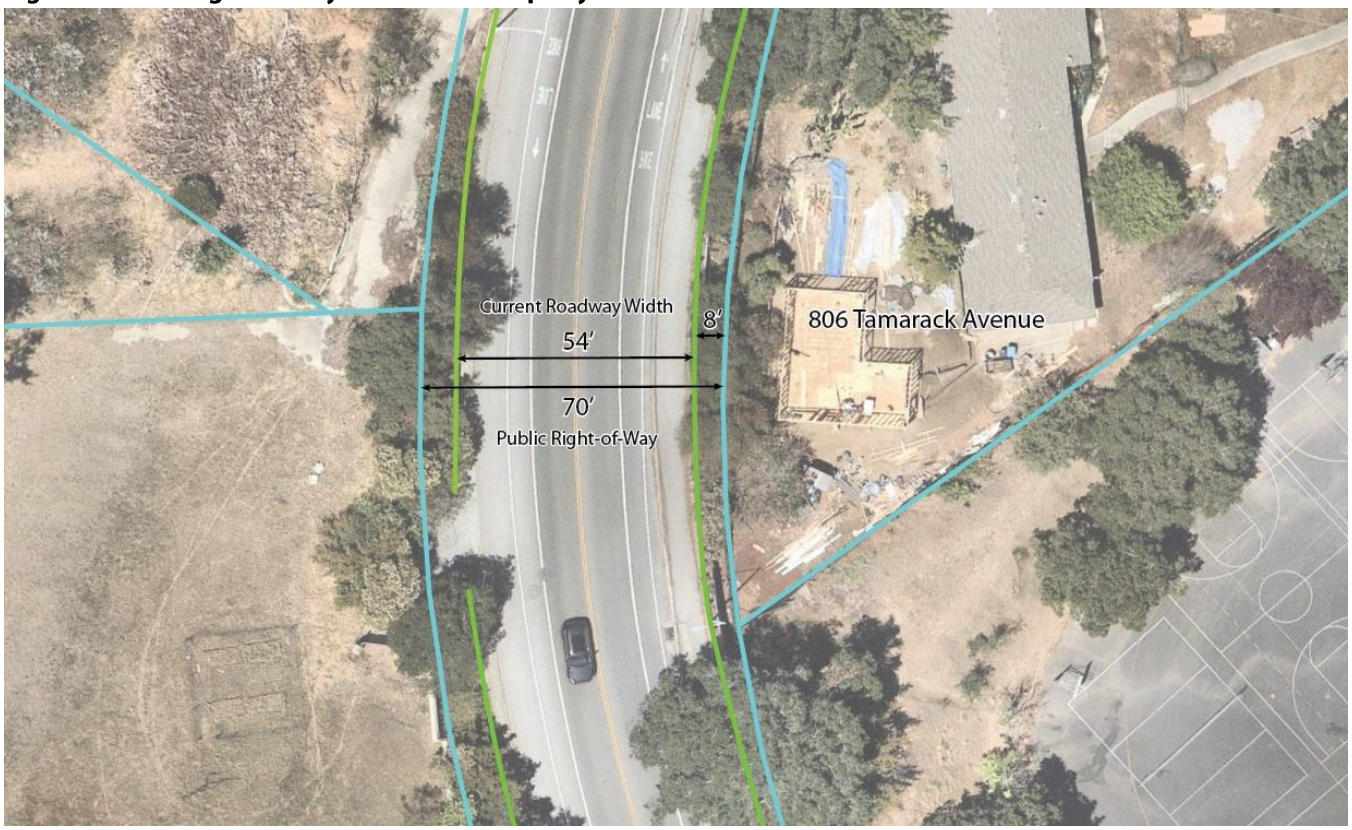


Figure 7 San Mateo County Assessor's Map

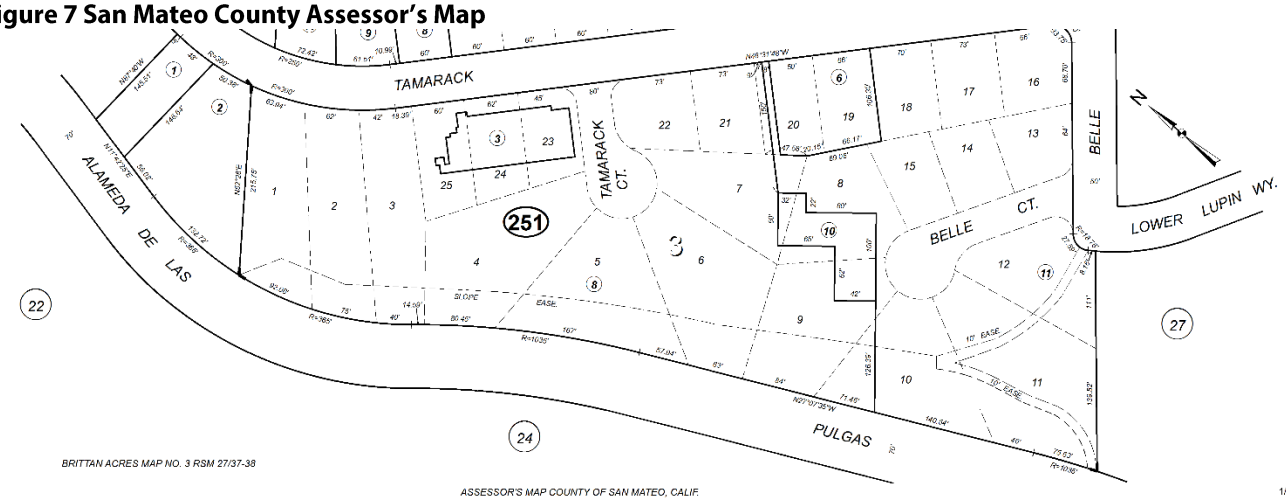


Figure 8 Vegetation within Public Right-of-Way

Therefore, it is recommended that the developer shall work with City of San Carlos to remove vegetation for approximately 60 feet long and five feet wide between Alameda de Las Pulgas and 806 Tamarack Avenue to establish adequate sight distance (**Figure 9**). CHS or other qualified engineers shall verify sight distance upon the removal.

Figure 9 Vegetation Removal Area

APPENDIX M

TRANSPORTATION DEMAND MANAGEMENT PLAN

January 17, 2018

Will Mollard
Workshop[1]
953 W MacArthur Boulevard
Oakland, CA 94608

Transportation Demand Management Plan for the Proposed Black Mountain Residential Development

Dear Mr. Mollard,

As requested, W-Trans has prepared a transportation demand management (TDM) plan for the proposed residential development to be located on Alameda de las Pulgas in the City of San Carlos. The purpose of this letter is to satisfy the requirements outlined by Chapter 18.25 Transportation Demand Management of the City of San Carlos Municipal Code (SCMC) for new multi-unit developments of ten or more units.

Project Description

The proposed project would redevelop four parcels on Alameda de las Pulgas in the City of San Carlos. These parcels are zoned RS-6, Single-Family Residential. The proposed development would include 58 three-bedroom and 10 four-bedroom townhomes. The City's requirement of 136 spaces would be satisfied by the 136 residential parking spaces located within the attached parking garages. An additional 34 on-street guest parking spaces would be located throughout the project site and the residential driveways can accommodate approximately 130 additional guest vehicles. Based on the total parking supply, including the parking garages, guest spaces, and driveway spaces, the proposed development would provide approximately 4.4 parking spaces per residential unit.

Alternative Modes

Pedestrian Facilities

Pedestrian facilities include sidewalks, crosswalks, pedestrian signal phases, curb ramps, curb extensions, and various streetscape amenities such as lighting, benches, etc. In general, a network of continuous sidewalks, crosswalks, and curb ramps provide access for pedestrians in the vicinity of the proposed Black Mountain Development. There is an eight foot wide sidewalk along the east side of Alameda de las Pulgas and a five foot wide sidewalk along the west side of Alameda de las Pulgas. The four-legged stop-controlled intersection of Alameda de las Pulgas and Melendy Drive, just south of the project site, includes marked crosswalks and curb ramps at all approaches. Additionally, Alameda de las Pulgas provides overhead lighting along the project frontage. Full sidewalk connectivity also exists north of the project site towards San Carlos Avenue with a Rectangular Rapid Flashing Beacon located on the northbound approach of the Alameda de las Pulgas/Alma Street intersection.

Bicycle Facilities

The *Highway Design Manual*, Caltrans, 2012, classifies bikeways into three categories:

- **Class I Multi-Use Path** – a completely separated right-of-way for the exclusive use of bicycles and pedestrians with cross flows of motorized traffic minimized.
- **Class II Bike Lane** – a striped and signed lane for one-way bike travel on a street or highway.
- **Class III Bike Route** – signing only for shared use with motor vehicles within the same travel lane on a street or highway.

In the project vicinity, Class II bike lanes exist on both sides of Alameda de las Pulgas. The Class II bike lanes end in the northbound direction at the intersection of Alameda de las Pulgas/Carmelita Drive, just south of San Carlos Avenue. This gap in the bicycle network along Alameda de las Pulgas approaching San Carlos Avenue was identified in the *2012 San Carlos Bicycle Transportation Plan* as an area of required improvement. This improvement along Alameda de las Pulgas could include updated roadway striping and signage to identify a clear path for bicyclists between Carmelita Drive and San Carlos Avenue.

Transit

SamTrans

San Mateo Transit District (SamTrans) provides fixed route bus service in San Mateo County and operates two routes in the vicinity of the project site. Route 61 runs between the San Carlos Caltrain Station and Carlmont High School on school days only. Given that it is a school route, route 61 operates northbound during the morning and southbound during the afternoon. Route 295 runs between the San Carlos Caltrain Station and San Mateo Caltrain Station with 30 minute to one-hour headways on weekdays, both northbound and southbound. This route operates northbound and southbound three times between 7:00 a.m. and 9:00 a.m. and 5:00 p.m. and 7:00 p.m. with stops on both sides of San Carlos Avenue at its intersection with Phelps Road.

Two bicycles can be carried on most SamTrans buses. Bike rack space is on a first come, first served basis. Up to two additional bicycles are allowed on SamTrans buses depending on passenger loads.

Paratransit

Paratransit is an on-demand service for persons with disabilities who cannot independently use regular fixed-route transit services. The San Mateo Transit District provides paratransit in San Carlos through its Redi-Wheels service. The Redi-Wheels service provides daily service, between the hours of 5:30 a.m. and midnight.

Caltrain

Caltrain is the commuter rail line serving the San Francisco Peninsula. It connects San Carlos with San Francisco to the north and San Jose and Gilroy to the south. On weekdays, there are 64 trains servicing the San Carlos Station in the northbound and southbound directions, 24 of which provide limited-stop, express service. On weekends, there are 16 trains that stop at the station in each direction on Saturdays, and 14 trains in each direction on Sundays. The San Carlos Caltrain Station is located just east of El Camino Real/San Carlos Avenue, approximately 1.4 miles from the project site. Both bicycle racks and lockers are provided at the San Carlos station. Bicycle racks are available on a first-come-first-served basis, while lockers must be reserved. Furthermore, paid vehicle parking is available at the station for riders.

Applicable Standards

SCMC Chapter 18.25 Transportation Demand Management was reviewed for project compliance. The applicable sections are listed below.

18.25.010 Purpose

The specific purposes of this chapter are to:

A. Reduce the amount of traffic generated by new development and the expansion of existing development;

B. Promote the more efficient utilization of existing transportation facilities and ensure that new developments are designed in ways to maximize the potential for alternative transportation usage; and

C. Establish an ongoing monitoring and enforcement program to ensure that the City's desired alternative mode use percentages are achieved. (Ord. 1438 § 4 (Exh. A (part)), 2011)

18.25.020 Applicability

The requirements of this chapter apply to:

A. New multi-unit developments of ten units or more.

18.25.030 Performance Requirements

All projects subject to the requirements of this chapter shall incorporate measures to meet vehicle trip generation rates that are twenty percent lower than the standard rates as published in the most recent edition of the Institute of Transportation Engineers (ITE) trip generation manual. (Ord. 1438 § 4 (Exh. A (part)), 2011).

18.25.050 Submittal Requirements

All projects subject to the requirements of this chapter shall submit a transportation demand management plan in conjunction with the development application. These plans must demonstrate that, upon implementation, they will achieve the required alternative mode use and shall include the following.

A. Checklist. A completed checklist of the trip reduction measures chosen by the applicant pursuant to Section 18.25.040, Trip reduction measures.

B. Trip Generation. Estimated daily trip generation for the proposed use based on the ITE trip generation rates.

C. Implementation Plan. A description of how the applicable minimum alternative mode use will be achieved and maintained over the life of the project, including, but not limited to, the transportation demand management goals targeted for the various measures.

D. Designated TDM Contact. Designation of an employee or resident as the official contact for the transportation demand management program. The City shall be provided with a current name and phone number of the designated TDM contact who administers carpool and vanpool ride-matching services and promotional programs, updates information on the information boards/kiosks, and is the official contact for the administration of the annual survey and triennial report.

E. Site Plan. A site plan that designates transportation demand management design elements including:

1. External: preferential parking areas, paid parking areas, bicycle connections, bicycle parking, location of on-site amenities, passenger loading areas, land dedicated for transit facilities and bus shelters, direct route to transit, and pedestrian connections.

2. Internal: showers/lockers, information boards/kiosks, ATM, dry cleaners, day care, convenience retail, post office, cafeteria, limited food service establishment, exercise facilities, on-site transit pass sales. (Ord. 1438 § 4 (Exh. A (part)), 2011)

Transportation Demand Management Plan

Checklist of Trip Reduction Measures

Per SCMC Section 18.25.030, the project is required to achieve a 20% trip reduction compared to the ITE standard rates. The required 20% reduction in trips would result in six fewer trips during the a.m. peak hour and eight fewer trips during the p.m. peak hour compared to the unmitigated peak hour trips.

Table 1 summarizes the trip reduction measures checklist, per SCMC Section 18.25.040 applicable to the proposed project.

Table 1 – TDM Checklist

TDM Measure	Zoning Code Description	Proposed TDM Measure for Black Mountain Residential Development	Implementation Lead
Direct Route to Transit (SCMC § 18.25.040 (B))	A well-lighted path or sidewalk utilizing the most direct route to the nearest transit or shuttle stop from the building.	Lit sidewalks along Alameda de las Pulgas connect to the nearest route 61 and 295 SamTrans bus stops located 0.15 and 0.50 miles from the site, respectively.	Applicant
Pedestrian Connections (SCMC § 18.25.040 (C))	Safe, convenient pedestrian connections provided from the project to surrounding public streets and, if applicable, trails. Under this requirement, lighting, landscaping and building orientation are designed to enhance pedestrian safety.	The site plan includes sidewalks and accessible paths that connect the residential entrances to the public sidewalk on Alameda de las Pulgas and should include pedestrian-scaled lightning and landscape elements. The site plan also includes a crosswalk across Alameda de las Pulgas to connect the project site to the existing trail network	Applicant
Bicycle Connections (SCMC § 18.25.040 (D))	If a site is abutting a bicycle path, lane or route, provision of a bicycle connection close to an entrance to the building on the site.	Given the site topography, the applicant is proposing a bicycle pavilion to securely store bicycles near the entrance on Alameda de las Pulgas	Applicant
Land Dedication for Transit/Bus Shelter (SCMC § 18.25.040 (E))	Where appropriate, land dedicated for transit or a bus shelter provided based on the proximity to a transit route.	The applicant should work with SamTrans to provide a new bus stop or to improve transit amenities at the existing bus stops within a quarter mile of the project site.	Applicant

Table 1 – TDM Checklist			
Long-Term Bicycle Parking (SCMC § 18.25.040 (F))	Covered and secure long-term bicycle parking located within seventy-five feet of a main entrance. Long-term bicycle parking must be in at least one of the following facilities: an enclosed bicycle locker; a fenced, covered, locked or guarded bicycle storage area; or a rack or stand inside a building that is within view of an attendant or security guard or visible from employee work areas.	Shared bicycle parking pavilion is to be located at the site's entrance at Alameda de las Pulgas.	Applicant
Transportation Management Association (SCMC § 18.25.040 (J))	Participation in or requirement for tenant to participate in a local TMA, the Peninsula Congestion Relief Alliance (Alliance) or similar organization approved by the Director, that provides ongoing support for alternative commuter programs.	The applicant should set up a Homeowners Association and a delegated member should participate in local transportation management agencies, pending approval of the Director.	Applicant / Homeowners Association
Information Boards/Kiosks (SCMC § 18.25.040 (N))	Display of the following information in a prominent location maintained by a designated TDM contact: transit routes and schedules; carpooling and vanpooling information; bicycle lanes, routes and paths and facility information; and alternative commute subsidy information.	The applicant should provide information boards located prominently throughout the project site and to be maintained by Homeowners Association.	Applicant / Homeowners Association
Promotional Programs (SCMC 18.25.040 (Q))	Promotion and organization of events for the following programs: new tenant and employee orientation packets on transportation alternatives; flyers, posters, brochures, and emails on commute alternatives, transportation fares; Spare the Air (June through October); Rideshare Week (October); trip planning assistance routes and maps.	New tenants to be provided with orientation packets on transportation alternatives including transit schedules, fares, Spare the Air, Rideshare Week, and trip planning assistance routes and maps. Updates on transportation alternatives to be offered by Homeowners Association via e-mail listserv.	Homeowners Association

Table 1 – TDM Checklist			
Other Measures (SCMC 18.25.040 (V))	Additional measures not listed in this chapter.	Applicant to provide parking spots throughout the site that can be used for an existing car share program. Applicant is considering providing residents with electric bike share to promote bicycling to and from downtown.	Applicant

Source: The City of San Carlos Municipal Code

Trip Generation

The anticipated trip generation for the proposed project was estimated using standard rates published by the Institute of Transportation Engineers (ITE) in *Trip Generation Manual*, 10th Edition, 2017 for "Multi-family Housing (Low-Rise)" (ITE LU #220). The proposed project is expected to generate an average of 498 trips per day, including 31 trips during the a.m. peak hour and 38 during the p.m. peak hour.

VMT Modeling

The project vehicle miles traveled (VMT) and the proximity to high-quality transit service, improved pedestrian network connectivity, and traffic calming features on internal roadways were evaluated using the California Emissions Estimator Model (CalEEMod, version 2016.3.1). CalEEMod is a statewide lane use emissions model used to quantify potential emissions impacts associated with a variety of land use projects. The model quantifies direction emissions, including vehicle use, and indirect emissions, including energy and water use. The model was developed for the California Air Pollution Officers Association (CAPCOA) and incorporates mitigation measures outlined in Quantifying Greenhouse Gas Mitigation Measures, CAPCOA 2010.

CalEEMod estimates vehicle travel as a function of land use and geographic location using ITE standard trip generation rates and trip length data collected from various jurisdictions around the State of California. Using this data, CalEEMod is able to determine the number of VMT for a given development. The model output includes both unmitigated and mitigated annual VMT calculated using the same average trip length. Since VMT is a function of the number of trips generated and average trip length, the change in VMT represents a proportional change in the number of trips generated by a development. Table 2 compares the proposed project unmitigated annual VMT and the mitigated annual VMT, which is based on a subset of TDM measures previously discussed. CalEEMod is able to quantify the TDM impacts of the proximity to high-quality transit service, improved pedestrian network connectivity, and traffic calming features on internal roadways for residential developments. CalEEMod is unable to quantify the trip reduction impacts of improved transit amenities, a transportation management association for a residential development, information boards/kiosks in residential developments, and promotional programs for residential developments to educate homeowners about trip reduction strategies. The modeled TDM measures would be expected to result in a 6.6% reduction in VMT, and proportionally a 6.6% reduction in vehicle trips.

Table 2 – Annual VMT and Percent Change with TDM Measures		
Unmitigated Annual VMT	**Mitigated Annual VMT**	**Percent Change**
1,144,694	1,068,959	-6.6%

A further limitation of the underlying CAPCOA methodology is that VMT reductions are limited based on the development's location. The proposed project is located in a suburban setting where the overall maximum reduction allowed by the CAPCOA methodology is 15% of all home and work based trips. Of that maximum

reduction, a total of 10% can be based on land use, project location, parking supply, and transit accessibility. These reductions are applicable to residential and office developments. The additional reductions can be accounted for from commute trip reduction strategies; however, since the project is strictly residential, it does not generate any work based trips only home based trips. The 6.6% reduction in trips, from CalEEMod, would result in approximately two fewer trips during the a.m. peak hour and three fewer trips during the p.m. peak hour compared to the unmitigated peak hour trips.

C/CAG Trip Credits

San Mateo City/County Association of Governments (C/CAG) developed a list of trip reduction measures and a corresponding standardized trip credit for each measure. These guidelines apply to projects that generated more than 100 net new peak hour trips. The proposed project does not generate 100 net new peak hour trips; however, SCMC Section 18.25.040 refers to the C/CAG list to determine the number of trips credited per TDM measure for required TDM plans.

Using the C/CAG standardized trip credit, the project would receive a trip credit of 20 a.m. peak hour vehicle trips and 20 p.m. peak hour vehicle trips, equivalent to 64.5% reduction of a.m. peak hour trips and 52.6% reduction of p.m. peak hour trips. Table 3 summarizes the TDM measures included in the trip reduction calculation and the number of trip credits per TDM measure.

Table 3 – Trip Reduction Credits

TDM Measure	C/CAG Number of Trips Credited	Proposed TDM Measure for Black Mountain Residential Development	Trips Credited
Install and maintain alternative transportation kiosks. (SCMC § 18.25.040 (N))	Five trips will be credited for each kiosk.	The applicant should provide information boards located prominently throughout the project site and to be maintained by Homeowners Association.	5
Participate in/create/sponsor a Transportation Management Association. (SCMC § 18.25.040 (J))	Five peak hour trips will be credited.	The applicant should set up a Homeowners Association and a delegated member should participate in local transportation management agencies, pending approval of the Director.	5
Make roads and streets more pedestrian and bicycle friendly	Five peak hour trips will be credited for each facility included.	At minimum, a Class III Bike Route should be provided on internal roadways and connect with the existing bicycle facilities on Alameda de las Pulgas.	5
Design streets/roads that encourage pedestrian and bicycle access and discourage automobile access	Five trips will be credited for each design element.	The applicant to incorporate complete street strategies on internal roadways to encourage pedestrian and bicycle access.	5
Subtotal of Trip Credits			20

TDM Implementation Plan

The project applicant will be responsible for ensuring that the TDM measures, from SCMC Section 18.25.040, and outlined in Table 1, are implemented. The project applicant will designate a TDM coordinator who will oversee implementation and maintain the TDM program.

Using the C/CAG standardized trip credit, the proposed project would be expected to achieve the target 20% reduction in trips. During the design phase the project applicant should consult with a transportation engineering and planning firm on how to incorporate complete street strategies to promote the use of alternative modes and to provide guidance on where to locate informational kiosks and boards. The project applicant should also work with SamTrans to identify bus stop improvements within one-quarter mile from the project entrance. The project applicant should work with the City to identify a transportation management association that is relevant for the nature and location of the proposed project. The project applicant should also prepare a package of promotional materials to provide to residents on the available modes of transportation and how to reduce their daily vehicle trips.

Monitoring

As outlined in Section 18.25.080, "a report, documenting the TDM activities undertaken and their results, shall be submitted to the Director annually at the responsibility of the applicant." In addition to the annual reports, "a five-year review shall evaluate the overall effectiveness of all of the TDM activities and may suggest new or modified activities or substitute activities to meet the program's objectives, per the Director's review and approval."

The number of vehicle trips generated by the project will be tracked annually using manual counts, conducted using pneumatic hose counters, or similar data collection technologies, placed at the entrances to the project site. The manual counts will be managed by the TDM coordinator and will be used to determine how many vehicles are entering and exiting the parking garages during the peak hour. The counts will be conducted for 24-hours on three consecutive weekdays, Tuesday through Thursday, while local schools are in session. The counts will not be conducted on national holidays. The a.m. and p.m. peak hours for all three days should be averaged to determine the number of peak hour trips generated by the site. The counts will be conducted during the fall each year and baseline data should be collected within a year of occupancy of the all residential units. The average peak hour should be compared to the expected number of peak hour trips generated by the site based on ITE standard rates. The target of 20% trip reduction, as required in Section 18.25.030, will be measured using a baseline of 498 daily vehicle trips, 31 a.m. peak hour trips and 38 p.m. peak hour trips. If the target reduction is not met, for any of these three periods (daily, a.m. peak hour, or p.m. peak hour) "the Director may impose reasonable changes (i.e. additional TDM measures) to assure the program's objectives will be met." (Section 18.25.080 Monitoring)

Site Plan

The proposed project site plan is enclosed.

Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,

Kevin Rangel, EIT
Assistant Traffic Engineer

Mark Spencer, PE
Principal

MJS/kr/SCA011-8.L1

Enclosures: Caleemod Output
Project Site Plan

Global Max Reduction (all VMT):
6.6%
or
75,735

Cross-Category Max Reduction (all VMT):
6.6%
or
75,735

Max Reduction (all VMT):
0.0%
or
0

Land Use/ Location	Neighborhood/ Site Enhancements	Parking Policy/ Pricing	Transit System Improvements	Commute Trip Reduction (CTR) Progams (assuming mixed-use development)
Category Reduction (all VMT): 3.7%	Category Reduction (all VMT): 3.0%	Category Reduction (all VMT): 0.0%	Category Reduction (all VMT): 0.0%	Category Reduction (work VMT): 0%
Density 0.0%	**Pedestrian Network** 2.0%	**Parking Supply Limits** 0.0%	**Network Expansion** 0.0%	**CTR Program - Required** (work VMT) 0.0%
Design 0.0%	**Traffic Calming** 1.0%	**Unbundled Parking Costs** 0.0%	**Service Frequency/Speed** 0.0%	**CTR Program - Voluntary** (work VMT) 0.0%
Diversity 0.0%	**NEV Network** 0.0%	**On-Street Market Pricing** 0.0%	**Bus Rapid Transit** 0.0%	**Transit Fare Subsidy** (work VMT) 0.0%
Destination Accessibility 0.0%	**Car Share Program** 0.0%			**Employee Parking Cash-Out** (work VMT) 0.0%
Transit Accessibility 3.7%				**Workplace Parking Pricing** (work VMT) 0.0%
BMR Housing 0.0%				**Alternative Work Schedules and Telecommute Program** (work VMT) 0.0%
				CTR Marketing (work VMT) 0.0%
				Employer-Sponsored Vanpool/Shuttle (work VMT) 0.0%
				Ride Share Program (work VMT) 0.0%
				School Pool (school VMT) 0.0%
				School Bus (school VMT) 0.0%

Black Mountain Residential Development

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Low Rise	68.00	Dwelling Unit	9.70	250,000.00	285

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2019
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 190 Bedrooms total. Assume 1.5 persons/bedroom, Pop = 285

Vehicle Trips - ITE 10th Ed Trip Gen

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblLandUse	LandUseSquareFeet	68,000.00	250,000.00
tblLandUse	LotAcreage	4.25	9.70
tblLandUse	Population	194.00	285.00
tblVehicleTrips	ST_TR	7.16	8.14
tblVehicleTrips	SU_TR	6.07	6.28
tblVehicleTrips	WD_TR	6.59	7.32

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0395	0.4065	0.2225	3.8000e-004	1.1200e-003	0.0209	0.0220	3.0000e-004	0.0194	0.0197	0.0000	34.8469	34.8469	9.2700e-003	0.0000	35.0788
2018	0.3840	3.3800	2.4940	4.2800e-003	0.2074	0.2030	0.4104	0.0972	0.1903	0.2874	0.0000	382.5414	382.5414	0.0842	0.0000	384.6471
2019	1.7778	0.1713	0.1704	2.8000e-004	1.9700e-003	9.5500e-003	0.0115	5.2000e-004	8.8900e-003	9.4100e-003	0.0000	24.7210	24.7210	6.7300e-003	0.0000	24.8893
Maximum	**1.7778**	**3.3800**	**2.4940**	**4.2800e-003**	**0.2074**	**0.2030**	**0.4104**	**0.0972**	**0.1903**	**0.2874**	**0.0000**	**382.5414**	**382.5414**	**0.0842**	**0.0000**	**384.6471**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0395	0.4065	0.2225	3.8000e-004	1.1200e-003	0.0209	0.0220	3.0000e-004	0.0194	0.0197	0.0000	34.8469	34.8469	9.2700e-003	0.0000	35.0787
2018	0.3840	3.3800	2.4940	4.2800e-003	0.2074	0.2030	0.4104	0.0972	0.1903	0.2874	0.0000	382.5410	382.5410	0.0842	0.0000	384.6467
2019	1.7778	0.1713	0.1704	2.8000e-004	1.9700e-003	9.5500e-003	0.0115	5.2000e-004	8.8900e-003	9.4100e-003	0.0000	24.7210	24.7210	6.7300e-003	0.0000	24.8892
Maximum	**1.7778**	**3.3800**	**2.4940**	**4.2800e-003**	**0.2074**	**0.2030**	**0.4104**	**0.0972**	**0.1903**	**0.2874**	**0.0000**	**382.5410**	**382.5410**	**0.0842**	**0.0000**	**384.6467**

	ROG	NOx	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**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**12-5-2017**	**3-4-2018**	1.2631	1.2631
2	**3-5-2018**	**6-4-2018**	0.8977	0.8977
3	**6-5-2018**	**9-4-2018**	0.8972	0.8972
4	**9-5-2018**	**12-4-2018**	0.8888	0.8888
5	**12-5-2018**	**3-4-2019**	2.2131	2.2131
		Highest	2.2131	2.2131

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3248	9.4900e-003	0.7235	4.6000e-004		0.0337	0.0337		0.0337	0.0337	3.1001	2.0981	5.1982	5.7900e-003	2.0000e-004	5.4036
Energy	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	157.2474	157.2474	5.1900e-003	2.1300e-003	158.0130
Mobile	0.1404	0.4561	1.5781	4.8700e-003	0.4243	6.1000e-003	0.4304	0.1140	5.7500e-003	0.1198	0.0000	444.6361	444.6361	0.0172	0.0000	445.0653
Waste						0.0000	0.0000		0.0000	0.0000	6.3496	0.0000	6.3496	0.3753	0.0000	15.7308
Water						0.0000	0.0000		0.0000	0.0000	1.4056	9.8180	11.2236	0.1448	3.5000e-003	15.8871
Total	**1.4727**	**0.5293**	**2.3287**	**5.7400e-003**	**0.4243**	**0.0449**	**0.4693**	**0.1140**	**0.0446**	**0.1586**	**10.8552**	**613.7996**	**624.6549**	**0.5482**	**5.8300e-003**	**640.0998**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	1.3248	9.4900e-003	0.7235	4.6000e-004		0.0337	0.0337		0.0337	0.0337	3.1001	2.0981	5.1982	5.7900e-003	2.0000e-004	5.4036
Energy	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	157.2474	157.2474	5.1900e-003	2.1300e-003	158.0130
Mobile	0.1404	0.4561	1.5781	4.8700e-003	0.4243	6.1000e-003	0.4304	0.1140	5.7500e-003	0.1198	0.0000	444.6361	444.6361	0.0172	0.0000	445.0653
Waste						0.0000	0.0000		0.0000	0.0000	6.3496	0.0000	6.3496	0.3753	0.0000	15.7308
Water						0.0000	0.0000		0.0000	0.0000	1.4056	9.8180	11.2236	0.1448	3.5000e-003	15.8871
Total	**1.4727**	**0.5293**	**2.3287**	**5.7400e-003**	**0.4243**	**0.0449**	**0.4693**	**0.1140**	**0.0446**	**0.1586**	**10.8552**	**613.7996**	**624.6549**	**0.5482**	**5.8300e-003**	**640.0998**

	ROG	NOx	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

Black Mountain Residential Development - San Mateo County, Annual

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	12/5/2017	1/1/2018	5	20	
2	Site Preparation	Site Preparation	1/2/2018	1/15/2018	5	10	
3	Grading	Grading	1/16/2018	2/12/2018	5	20	
4	Building Construction	Building Construction	2/13/2018	12/31/2018	5	230	
5	Paving	Paving	1/1/2019	1/28/2019	5	20	
6	Architectural Coating	Architectural Coating	1/29/2019	2/25/2019	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 10

Acres of Paving: 0

Residential Indoor: 506,250; Residential Outdoor: 168,750; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Black Mountain Residential Development - San Mateo County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Excavators	3	8.00	158	0.38
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Excavators	1	8.00	158	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	130	0.42
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Paving Equipment	2	8.00	132	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
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	49.00	7.00	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	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0390	0.4061	0.2186	3.7000e-004		0.0208	0.0208		0.0194	0.0194	0.0000	33.8205	33.8205	9.2500e-003	0.0000	34.0517
Total	**0.0390**	**0.4061**	**0.2186**	**3.7000e-004**		**0.0208**	**0.0208**		**0.0194**	**0.0194**	**0.0000**	**33.8205**	**33.8205**	**9.2500e-003**	**0.0000**	**34.0517**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.9000e-004	3.9100e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0265	1.0265	3.0000e-005	0.0000	1.0271
Total	**5.2000e-004**	**3.9000e-004**	**3.9100e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0265**	**1.0265**	**3.0000e-005**	**0.0000**	**1.0271**

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	0.0390	0.4061	0.2186	3.7000e-004		0.0208	0.0208		0.0194	0.0194	0.0000	33.8204	33.8204	9.2500e-003	0.0000	34.0516
Total	**0.0390**	**0.4061**	**0.2186**	**3.7000e-004**		**0.0208**	**0.0208**		**0.0194**	**0.0194**	**0.0000**	**33.8204**	**33.8204**	**9.2500e-003**	**0.0000**	**34.0516**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.2000e-004	3.9000e-004	3.9100e-003	1.0000e-005	1.1200e-003	1.0000e-005	1.1300e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.0265	1.0265	3.0000e-005	0.0000	1.0271
Total	**5.2000e-004**	**3.9000e-004**	**3.9100e-003**	**1.0000e-005**	**1.1200e-003**	**1.0000e-005**	**1.1300e-003**	**3.0000e-004**	**1.0000e-005**	**3.1000e-004**	**0.0000**	**1.0265**	**1.0265**	**3.0000e-005**	**0.0000**	**1.0271**

3.2 Demolition - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.8600e-003	0.0192	0.0112	2.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	1.7562	1.7562	4.8000e-004	0.0000	1.7683
Total	**1.8600e-003**	**0.0192**	**0.0112**	**2.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**1.7562**	**1.7562**	**4.8000e-004**	**0.0000**	**1.7683**

3.2 Demolition - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0524	0.0524	0.0000	0.0000	0.0524
Total	**2.0000e-005**	**2.0000e-005**	**1.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0524**	**0.0524**	**0.0000**	**0.0000**	**0.0524**

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	1.8600e-003	0.0192	0.0112	2.0000e-005		9.7000e-004	9.7000e-004		9.0000e-004	9.0000e-004	0.0000	1.7562	1.7562	4.8000e-004	0.0000	1.7683
Total	**1.8600e-003**	**0.0192**	**0.0112**	**2.0000e-005**		**9.7000e-004**	**9.7000e-004**		**9.0000e-004**	**9.0000e-004**	**0.0000**	**1.7562**	**1.7562**	**4.8000e-004**	**0.0000**	**1.7683**

3.2 Demolition - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0524	0.0524	0.0000	0.0000	0.0524
Total	**2.0000e-005**	**2.0000e-005**	**1.8000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0524**	**0.0524**	**0.0000**	**0.0000**	**0.0524**

3.3 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3800	17.3800	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3800**	**17.3800**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6289	0.6289	1.0000e-005	0.0000	0.6293
Total	**2.9000e-004**	**2.1000e-004**	**2.1600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6289**	**0.6289**	**1.0000e-005**	**0.0000**	**0.6293**

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	0.0228	0.2410	0.1124	1.9000e-004		0.0129	0.0129		0.0119	0.0119	0.0000	17.3799	17.3799	5.4100e-003	0.0000	17.5152
Total	**0.0228**	**0.2410**	**0.1124**	**1.9000e-004**	**0.0903**	**0.0129**	**0.1032**	**0.0497**	**0.0119**	**0.0615**	**0.0000**	**17.3799**	**17.3799**	**5.4100e-003**	**0.0000**	**17.5152**

3.3 Site Preparation - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.9000e-004	2.1000e-004	2.1600e-003	1.0000e-005	7.1000e-004	0.0000	7.1000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6289	0.6289	1.0000e-005	0.0000	0.6293
Total	**2.9000e-004**	**2.1000e-004**	**2.1600e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.1000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6289**	**0.6289**	**1.0000e-005**	**0.0000**	**0.6293**

3.4 Grading - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
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	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1069	27.1069	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0655**	**0.0155**	**0.0810**	**0.0337**	**0.0143**	**0.0479**	**0.0000**	**27.1069**	**27.1069**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.9000e-004**	**3.6000e-004**	**3.6000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0482**	**1.0482**	**2.0000e-005**	**0.0000**	**1.0488**

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	0.0277	0.3067	0.1658	3.0000e-004		0.0155	0.0155		0.0143	0.0143	0.0000	27.1068	27.1068	8.4400e-003	0.0000	27.3178
Total	**0.0277**	**0.3067**	**0.1658**	**3.0000e-004**	**0.0655**	**0.0155**	**0.0810**	**0.0337**	**0.0143**	**0.0479**	**0.0000**	**27.1068**	**27.1068**	**8.4400e-003**	**0.0000**	**27.3178**

3.4 Grading - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.9000e-004	3.6000e-004	3.6000e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0482	1.0482	2.0000e-005	0.0000	1.0488
Total	**4.9000e-004**	**3.6000e-004**	**3.6000e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0482**	**1.0482**	**2.0000e-005**	**0.0000**	**1.0488**

3.5 Building Construction - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3081	2.6899	2.0218	3.1000e-003		0.1725	0.1725		0.1621	0.1621	0.0000	273.4323	273.4323	0.0670	0.0000	275.1071
Total	**0.3081**	**2.6899**	**2.0218**	**3.1000e-003**		**0.1725**	**0.1725**		**0.1621**	**0.1621**	**0.0000**	**273.4323**	**273.4323**	**0.0670**	**0.0000**	**275.1071**

3.5 Building Construction - 2018

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2900e-003	0.1094	0.0417	2.2000e-004	5.2500e-003	8.4000e-004	6.0900e-003	1.5200e-003	8.0000e-004	2.3200e-003	0.0000	21.7599	21.7599	1.9400e-003	0.0000	21.8083
Worker	0.0184	0.0134	0.1353	4.4000e-004	0.0444	2.9000e-004	0.0447	0.0118	2.6000e-004	0.0121	0.0000	39.3766	39.3766	9.3000e-004	0.0000	39.3998
Total	**0.0227**	**0.1227**	**0.1770**	**6.6000e-004**	**0.0496**	**1.1300e-003**	**0.0507**	**0.0133**	**1.0600e-003**	**0.0144**	**0.0000**	**61.1365**	**61.1365**	**2.8700e-003**	**0.0000**	**61.2081**

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	0.3081	2.6899	2.0218	3.1000e-003		0.1725	0.1725		0.1621	0.1621	0.0000	273.4320	273.4320	0.0670	0.0000	275.1068
Total	**0.3081**	**2.6899**	**2.0218**	**3.1000e-003**		**0.1725**	**0.1725**		**0.1621**	**0.1621**	**0.0000**	**273.4320**	**273.4320**	**0.0670**	**0.0000**	**275.1068**

3.5 Building Construction - 2018

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.2900e-003	0.1094	0.0417	2.2000e-004	5.2500e-003	8.4000e-004	6.0900e-003	1.5200e-003	8.0000e-004	2.3200e-003	0.0000	21.7599	21.7599	1.9400e-003	0.0000	21.8083
Worker	0.0184	0.0134	0.1353	4.4000e-004	0.0444	2.9000e-004	0.0447	0.0118	2.6000e-004	0.0121	0.0000	39.3766	39.3766	9.3000e-004	0.0000	39.3998
Total	**0.0227**	**0.1227**	**0.1770**	**6.6000e-004**	**0.0496**	**1.1300e-003**	**0.0507**	**0.0133**	**1.0600e-003**	**0.0144**	**0.0000**	**61.1365**	**61.1365**	**2.8700e-003**	**0.0000**	**61.2081**

3.6 Paving - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0145**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.1000e-004	3.2200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0156	1.0156	2.0000e-005	0.0000	1.0161
Total	**4.4000e-004**	**3.1000e-004**	**3.2200e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0156**	**1.0156**	**2.0000e-005**	**0.0000**	**1.0161**

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	0.0145	0.1524	0.1467	2.3000e-004		8.2500e-003	8.2500e-003		7.5900e-003	7.5900e-003	0.0000	20.4752	20.4752	6.4800e-003	0.0000	20.6371
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0145**	**0.1524**	**0.1467**	**2.3000e-004**		**8.2500e-003**	**8.2500e-003**		**7.5900e-003**	**7.5900e-003**	**0.0000**	**20.4752**	**20.4752**	**6.4800e-003**	**0.0000**	**20.6371**

3.6 Paving - 2019

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.4000e-004	3.1000e-004	3.2200e-003	1.0000e-005	1.1800e-003	1.0000e-005	1.1900e-003	3.1000e-004	1.0000e-005	3.2000e-004	0.0000	1.0156	1.0156	2.0000e-005	0.0000	1.0161
Total	**4.4000e-004**	**3.1000e-004**	**3.2200e-003**	**1.0000e-005**	**1.1800e-003**	**1.0000e-005**	**1.1900e-003**	**3.1000e-004**	**1.0000e-005**	**3.2000e-004**	**0.0000**	**1.0156**	**1.0156**	**2.0000e-005**	**0.0000**	**1.0161**

3.7 Architectural Coating - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7599					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5587
Total	**1.7625**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5587**

3.7 Architectural Coating - 2019

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-004	2.1000e-004	2.1500e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6770	0.6770	1.0000e-005	0.0000	0.6774
Total	**3.0000e-004**	**2.1000e-004**	**2.1500e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6770**	**0.6770**	**1.0000e-005**	**0.0000**	**0.6774**

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	1.7599					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6600e-003	0.0184	0.0184	3.0000e-005		1.2900e-003	1.2900e-003		1.2900e-003	1.2900e-003	0.0000	2.5533	2.5533	2.2000e-004	0.0000	2.5586
Total	**1.7625**	**0.0184**	**0.0184**	**3.0000e-005**		**1.2900e-003**	**1.2900e-003**		**1.2900e-003**	**1.2900e-003**	**0.0000**	**2.5533**	**2.5533**	**2.2000e-004**	**0.0000**	**2.5586**

3.7 Architectural Coating - 2019

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-004	2.1000e-004	2.1500e-003	1.0000e-005	7.9000e-004	1.0000e-005	7.9000e-004	2.1000e-004	0.0000	2.1000e-004	0.0000	0.6770	0.6770	1.0000e-005	0.0000	0.6774
Total	**3.0000e-004**	**2.1000e-004**	**2.1500e-003**	**1.0000e-005**	**7.9000e-004**	**1.0000e-005**	**7.9000e-004**	**2.1000e-004**	**0.0000**	**2.1000e-004**	**0.0000**	**0.6770**	**0.6770**	**1.0000e-005**	**0.0000**	**0.6774**

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	0.1404	0.4561	1.5781	4.8700e-003	0.4243	6.1000e-003	0.4304	0.1140	5.7500e-003	0.1198	0.0000	444.6361	444.6361	0.0172	0.0000	445.0653
Unmitigated	0.1404	0.4561	1.5781	4.8700e-003	0.4243	6.1000e-003	0.4304	0.1140	5.7500e-003	0.1198	0.0000	444.6361	444.6361	0.0172	0.0000	445.0653

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Low Rise	497.76	553.52	427.04	1,144,694	1,144,694
Total	497.76	553.52	427.04	1,144,694	1,144,694

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
Apartments Low Rise	10.80	4.80	5.70	31.00	15.00	54.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Low Rise	0.498968	0.049513	0.248277	0.134909	0.018184	0.006326	0.020670	0.006254	0.003828	0.003354	0.008577	0.000418	0.000722

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	83.4044	83.4044	3.7700e-003	7.8000e-004	83.7312
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	83.4044	83.4044	3.7700e-003	7.8000e-004	83.7312
NaturalGas Mitigated	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	73.8430	73.8430	1.4200e-003	1.3500e-003	74.2818
NaturalGas Unmitigated	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	73.8430	73.8430	1.4200e-003	1.3500e-003	74.2818

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					
Apartments Low Rise	1.38377e+006	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	73.8430	73.8430	1.4200e-003	1.3500e-003	74.2818
Total		**7.4600e-003**	**0.0638**	**0.0271**	**4.1000e-004**		**5.1600e-003**	**5.1600e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**73.8430**	**73.8430**	**1.4200e-003**	**1.3500e-003**	**74.2818**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Low Rise	1.38377e+006	7.4600e-003	0.0638	0.0271	4.1000e-004		5.1600e-003	5.1600e-003		5.1600e-003	5.1600e-003	0.0000	73.8430	73.8430	1.4200e-003	1.3500e-003	74.2818
Total		**7.4600e-003**	**0.0638**	**0.0271**	**4.1000e-004**		**5.1600e-003**	**5.1600e-003**		**5.1600e-003**	**5.1600e-003**	**0.0000**	**73.8430**	**73.8430**	**1.4200e-003**	**1.3500e-003**	**74.2818**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	286700	83.4044	3.7700e-003	7.8000e-004	83.7312
Total		**83.4044**	**3.7700e-003**	**7.8000e-004**	**83.7312**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Low Rise	286700	83.4044	3.7700e-003	7.8000e-004	83.7312
Total		**83.4044**	**3.7700e-003**	**7.8000e-004**	**83.7312**

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	1.3248	9.4900e-003	0.7235	4.6000e-004		0.0337	0.0337		0.0337	0.0337	3.1001	2.0981	5.1982	5.7900e-003	2.0000e-004	5.4036
Unmitigated	1.3248	9.4900e-003	0.7235	4.6000e-004		0.0337	0.0337		0.0337	0.0337	3.1001	2.0981	5.1982	5.7900e-003	2.0000e-004	5.4036

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	0.1760					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1569	3.6100e-003	0.2161	4.3000e-004		0.0309	0.0309		0.0309	0.0309	3.1001	1.2734	4.3735	4.9800e-003	2.0000e-004	4.5586
Landscaping	0.0155	5.8800e-003	0.5074	3.0000e-005		2.7800e-003	2.7800e-003		2.7800e-003	2.7800e-003	0.0000	0.8248	0.8248	8.1000e-004	0.0000	0.8450
Total	**1.3248**	**9.4900e-003**	**0.7235**	**4.6000e-004**		**0.0337**	**0.0337**		**0.0337**	**0.0337**	**3.1001**	**2.0981**	**5.1982**	**5.7900e-003**	**2.0000e-004**	**5.4036**

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	0.1760					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.9764					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.1569	3.6100e-003	0.2161	4.3000e-004		0.0309	0.0309		0.0309	0.0309	3.1001	1.2734	4.3735	4.9800e-003	2.0000e-004	4.5586
Landscaping	0.0155	5.8800e-003	0.5074	3.0000e-005		2.7800e-003	2.7800e-003		2.7800e-003	2.7800e-003	0.0000	0.8248	0.8248	8.1000e-004	0.0000	0.8450
Total	**1.3248**	**9.4900e-003**	**0.7235**	**4.6000e-004**		**0.0337**	**0.0337**		**0.0337**	**0.0337**	**3.1001**	**2.0981**	**5.1982**	**5.7900e-003**	**2.0000e-004**	**5.4036**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	11.2236	0.1448	3.5000e-003	15.8871
Unmitigated	11.2236	0.1448	3.5000e-003	15.8871

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	4.43047 / 2.79312	11.2236	0.1448	3.5000e-003	15.8871
Total		**11.2236**	**0.1448**	**3.5000e-003**	**15.8871**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Low Rise	4.43047 / 2.79312	11.2236	0.1448	3.5000e-003	15.8871
Total		**11.2236**	**0.1448**	**3.5000e-003**	**15.8871**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	6.3496	0.3753	0.0000	15.7308
Unmitigated	6.3496	0.3753	0.0000	15.7308

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	31.28	6.3496	0.3753	0.0000	15.7308
Total		**6.3496**	**0.3753**	**0.0000**	**15.7308**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Low Rise	31.28	6.3496	0.3753	0.0000	15.7308
Total		**6.3496**	**0.3753**	**0.0000**	**15.7308**

9.0 Operational Offroad

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

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

UNIT TYPE AND PARKING MATRIX

UNIT TYPE	# OF BEDRMS PER UNIT	RESIDENT PARKING REQ'D PER UNIT	GUEST PARKING REQ'D PER UNIT	# OF UNITS	RESIDENT PARKING REQ'D	GUEST PARKING REQ'D	TOTAL PARKING REQ'D	RESIDENT PARKING PROVIDED	GUEST PARKING PROVIDED		TOTAL PARKING PROVIDED
									DRIVEWAY	STREET	
A1	2	1.5	.5	4	6	2	8	8	8	-	16
A2	3	2	.5	4	8	2	10	8	8	-	16
B1	2	1.5	.5	20	30	10	40	40	40	-	80
B2	3	2	.5	14	28	7	35	28	26	-	54
C1	3	2	.5	16	32	8	40	32	29	-	61
C2	4	2	.5	10	20	5	25	20	19	-	39
TOTAL COUNT	-	-	-	68	124 (68 COVERED)	34	158 (68 COVERED)	136 (ALL COVERED)	130	26	292 (136 COVERED)

DRAGON FLY - BLACK MOUNTAIN

SITE PLAN

OCTOBER 20, 2017 - SCALE: 1"=50'-0"

SWATT MIERS ARCHITECTS

0 50 100 200

DRAGON FLY - BLACK MOUNTAIN

Site Plan - Conceptual Landscape Enlarged

JANUARY 2, 2018

SWATT MIERS ARCHITECTS

APPENDIX N

UTILITIES

APPENDIX N1:
WATER SUPPLY MEMORANDUM

Redwood City
255 Shoreline Drive, Suite 200
Redwood City, CA 94065
Tel 650.482.6300
Fax 650.482.6399

WATER SUPPLY MEMORANDUM

808 Alameda de las Pulgas
San Carlos, CA 94070
BKF Job No: 20160150-10

December 2019

Revised January 2022

Table of Contents

1.0 INTRODUCTION

This Water Supply Memorandum has been prepared to describe the preferred water supply design and alternatives that have been discussed with California Water Service (Calwater) for the 808 Alameda de Las Pulgas project (herein referred to as Project).

1.1 Project Description

The Project is a 11.4 acre re-development of four (4) existing residential lots off of Alameda de las Pulgas in the City of San Carlos, California (see Figure 1: Vicinity Map). The proposed project will replace the existing residences with eighty-seven (87) residential units.

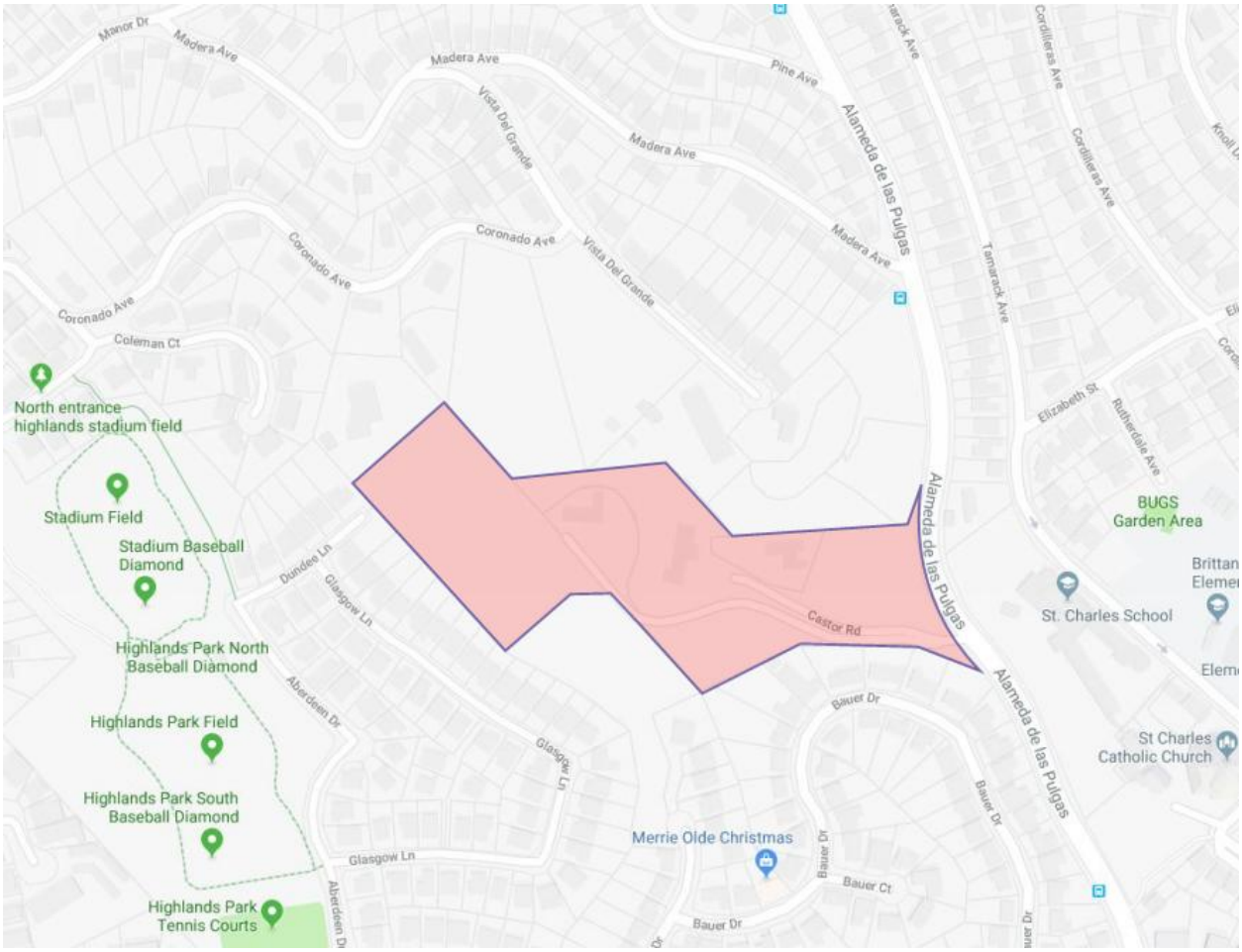


Figure 1: Vicinity Map

1.2 Existing Site Conditions

The Project site is currently occupied by three (3) single family residences, a private driveway, and vacant land with associated walkways and landscape areas where the surface cover is comprised of open grass areas, concrete, AC pavement, dirt and a large number of trees (including heritage trees). The existing lots are zoned RS-6, single family residential, which allows for densities of up to 6 units/acre. The existing topography at the Project site generally slopes eastward toward Alameda de las Pulgas with an average slope of approximately 28%. Elevations vary from about 400 feet (above the survey datum) in the western corner to a low of about 165 feet (above the survey datum) along the Alameda de las Pulgas frontage.

1.3 Proposed Project Land Use

The proposed Project is a residential subdivision that will include eighty-seven (87) residential units contained within seventeen (17) building clusters. The units are aligned along a new private street with the rest of the site to be designated as common area.

2.0 CALWATER

2.1 Calwater Overview

Calwater has determined that they are willing and able to serve the Project with adequate water supply, as indicated in their Will-Serve Letter, dated March 18, 2021 (see Attachment E).

Due to its proximity adjacent to three separate water supply networks, and the large grade change across the property, there are multiple potential methods for supplying the Project with the flow and pressure required for the planned development.

2.2 Calwater Pressure Zones

The existing Calwater pressure zones adjacent to the Project are listed below with their potential points of connection (POCs):

a. 345 Zone: POC at Alameda De Las Pulgas to serve the Lower Site

b. 550 Zone: POC at Dundee Lane to serve the Upper Site

c. 585 Zone: No connections proposed

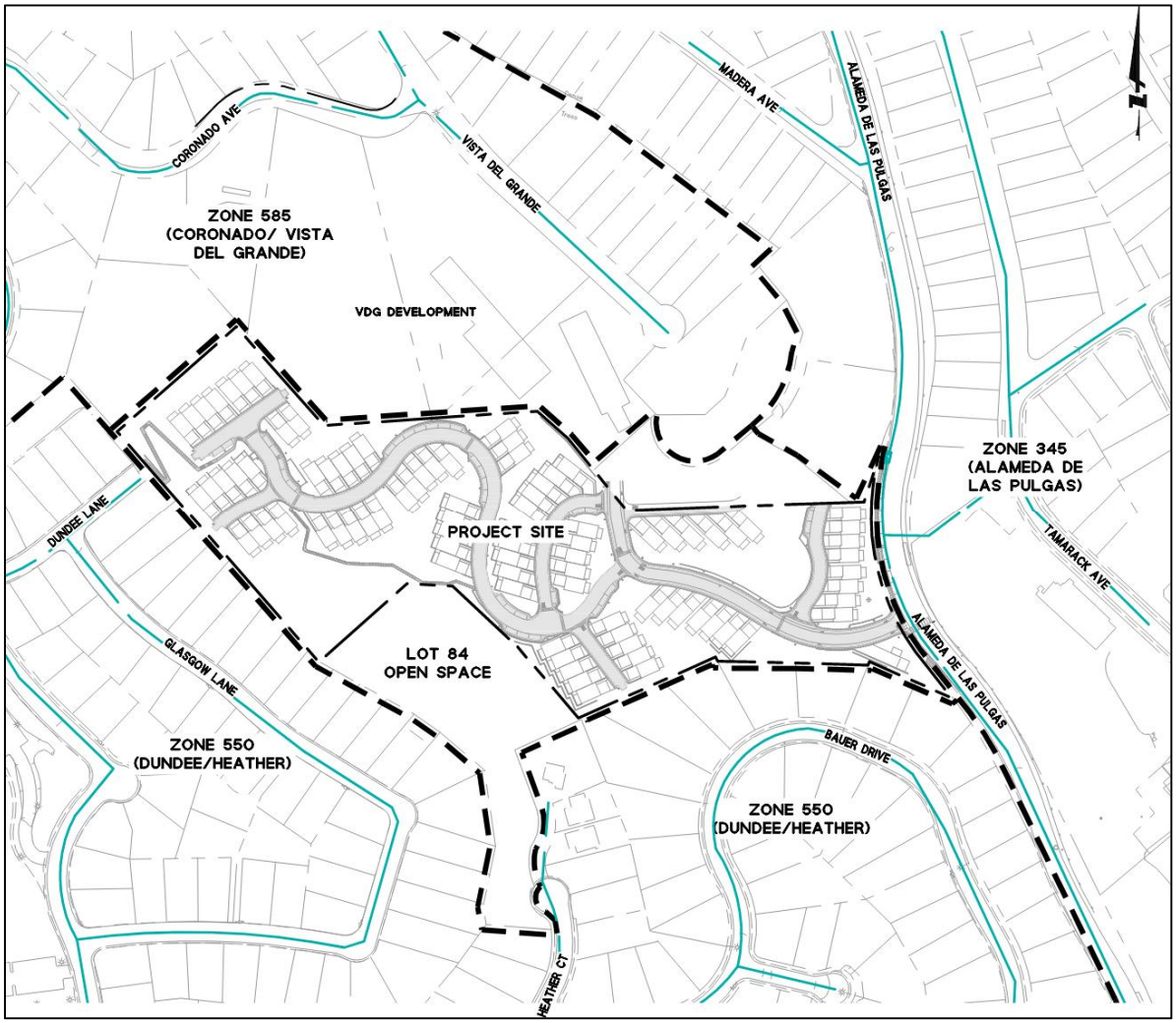


Figure 2: Calwater Pressure Zones

2.3 Supply Requirements

- Any proposed approach for providing water service to the site would require approval by Calwater, Redwood City Fire Department, and the City of San Carlos, and would need to satisfy minimum requirements by those agencies.
- Adequate water supply is based primarily on two requirements:
    1. Minimum Fire Flow for Hydrants – 20 psi at 1,500 gpm for 2-hours is the minimum flowrate, per San Carlos Fire Marshall.
    2. Domestic Flow for Building Fixtures – 20 psi static pressure (zero flow) at each water meter / building point of connection
- Calwater would propose the Project water system to be a public water main, installed in an easement serving both domestic and fire flows, with two separate points of connection offsite.
- Calwater would prefer this system has the ability to connect to the Vista del Grande development, which has similar challenges and supply requirements, and could potentially share the cost of the water system, as both projects would benefit from any offsite upgrades assuming they were connected to the same pressure zone.
- An onsite main serving both domestic and fire demands would likely be an 8” diameter pipe, with 6” stubs to each hydrant and smaller connections to serve each cluster’s domestic and sprinkler flows. Water meters would be installed at each unit’s domestic connection, and separate meters could be provided throughout the development for irrigation purposes. Hydrants would connect straight to the 8” main and be unmetered.
- Calwater would install or supervise installation of the water system at the developers cost. Calwater would then accept ownership and maintenance of the system, long term.

3.0 PREFERRED CONNECTION OPTIONS

The connection options preferred by the design team are as follows:

3. 1 Lower Site/Upper Site Split

The Lower Site served from the 345 Zone at Alameda de las Pulgas, would serve 46 units while the Upper Site served from the 550 Zone would serve 41 units. There will be no connection between the Lower and Upper Site systems.

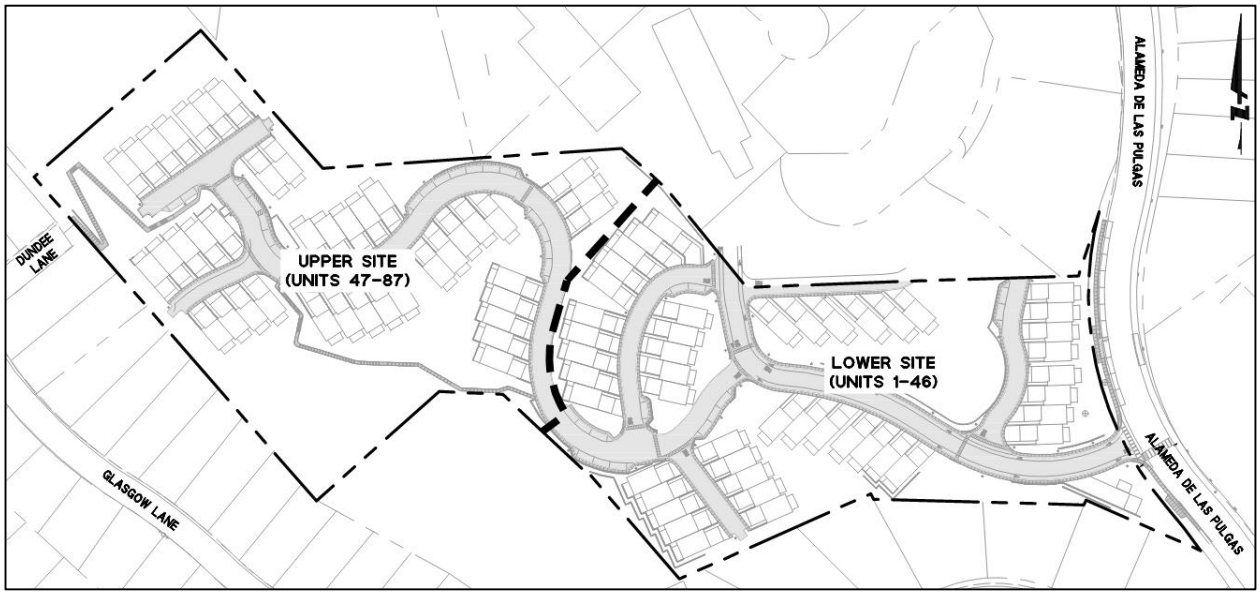


Figure 3: Lower Site/Upper Site Split

3. 2 Lower Site

Connecting to the 345 Zone provides the best access to the Project of the three zones being considered. Although the water main here is large, it is entirely downhill of the Project site, and does not have sufficient pressure to serve the entire Project. Therefore, it is proposed that this pressure zone serve roughly the lower half (Lower Site) of proposed townhomes' domestic and fire flow demands without pump augmentation. The limiting elevation is 270 for the Lower Site system.

- Physical improvements would include:
    - 8" main extension from Alameda de Las Pulgas – 25 LF

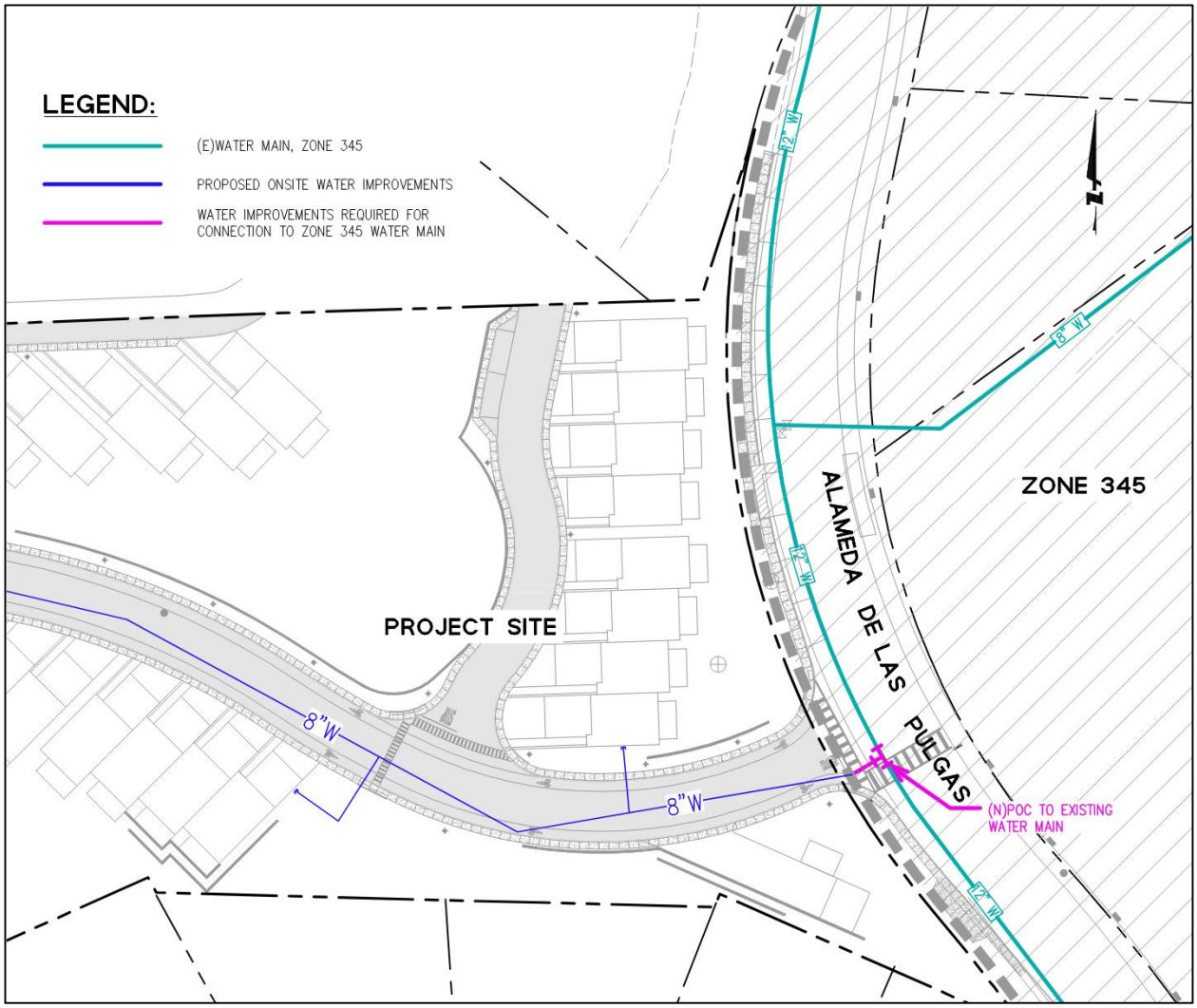


Figure 4: Lower Site Connection to 345 Zone

3. 3 Upper Site

The preferred option for supplying water to the Upper Site would be providing 8" connection to the 550 Zone via the Dundee and Glasgow Lane intersection. The 550 Zone is the most recently constructed and has excellent water flow/pressure; however, a new 20-ft easement would be required through the 120 Dundee Lane or 205 Glasgow Lane. Calwater does not have rights or ability to obtain access through private property to the 550 Zone. New easements will need to be obtained by the City in conjunction with the trail easement to Dundee Lane.

- Physical improvements would include:
    - 8" main extension from Dundee/Glasgow Lane intersection – 200 LF
    - 8" main extension onsite – 200 LF

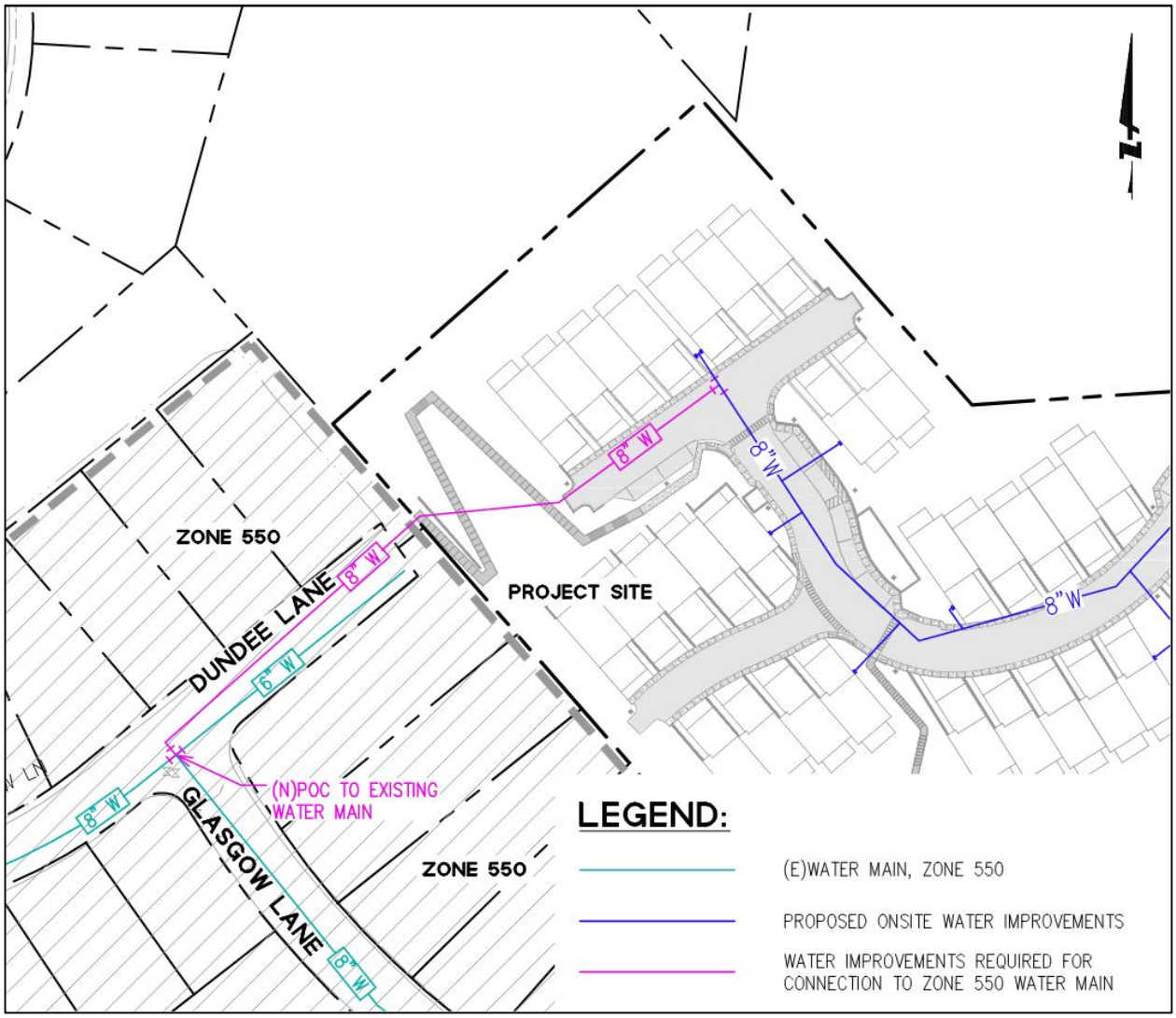


Figure 5: Upper Site – Dundee/Glasgow Lane

4.0 ALTERNATIVE CONNECTION OPTIONS

4.1 Full Site Alternative – 345 Zone

If there is difficulty in obtaining the easement to Dundee Lane, a pump station to feed the upper elevation of the site via the 345 Zone is a viable option per the Calwater Preliminary Supply letter dated April 5, 2019.

Alameda de Las Pulgas POC

- A full site connection on Alameda de Las Pulgas would require the following improvements:
  - 8" main extension from Alameda de Las Pulgas – 25 LF
  - Install two (2) 125-150 hp vertical turbine booster pumps (one primary electric pump and one backup diesel pump) in a pump house to provide adequate pressure for fire flow for the upper site. Pumps would be designed to NFPA 20 standards.
  - Install a 2,000-gallon high-pressure hydropneumatic tank for upper site domestic uses.
  - Potential locations for 15'x25' pump house and 12'x15' hydropneumatic tank are shown in Figure 6 below.

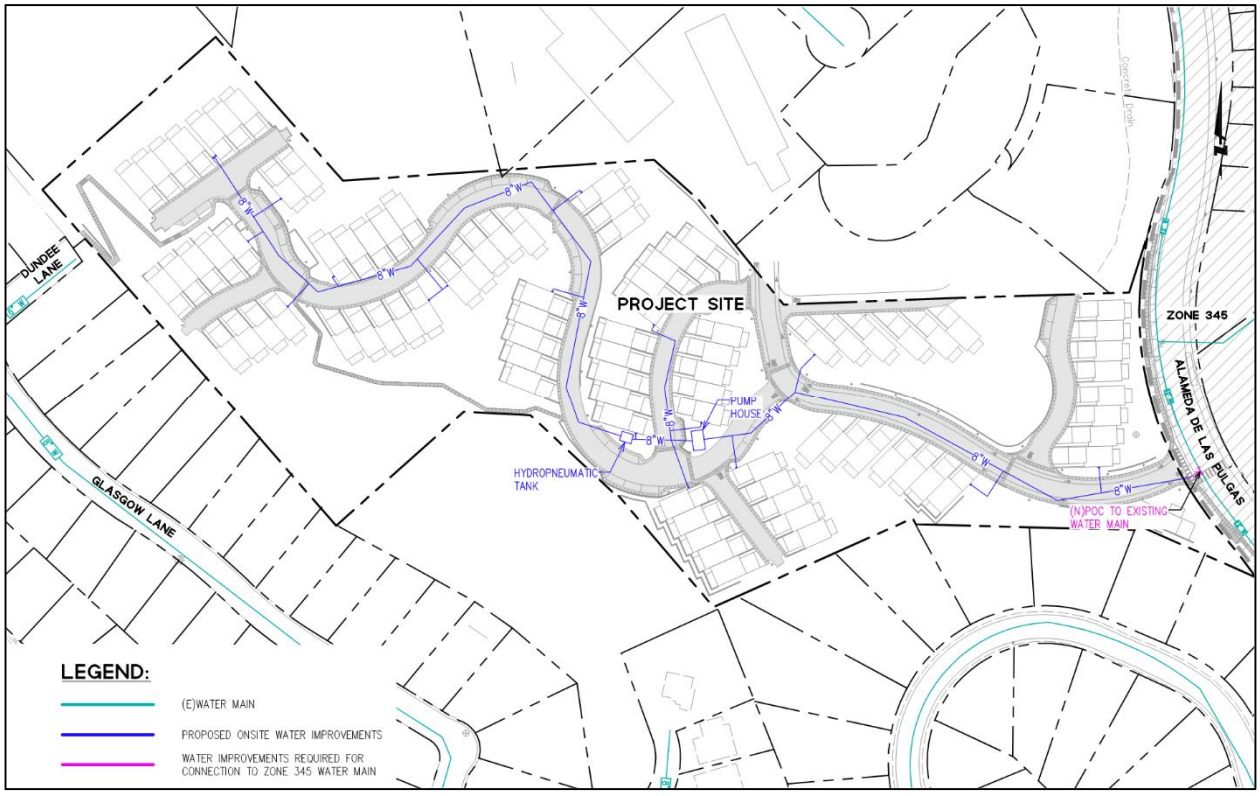


Figure 6: Full Site Connection to 345 Zone

4.2 Lower Site Alternative – 550 Zone

Heather Drive POC

- Connection to Heather Drive may also be feasible via the adjacent open space parcel (Lot 84), with similar easement requirements as the connection from Dundee Lane.
- Terrain is constrained and requires further review by Calwater on feasibility and best routing.
- Physical improvements would include:
    - 8" main from Heather Drive cul-de-sac, across Lot 84 - 625 LF
    - 8" main extension onsite – 35 LF

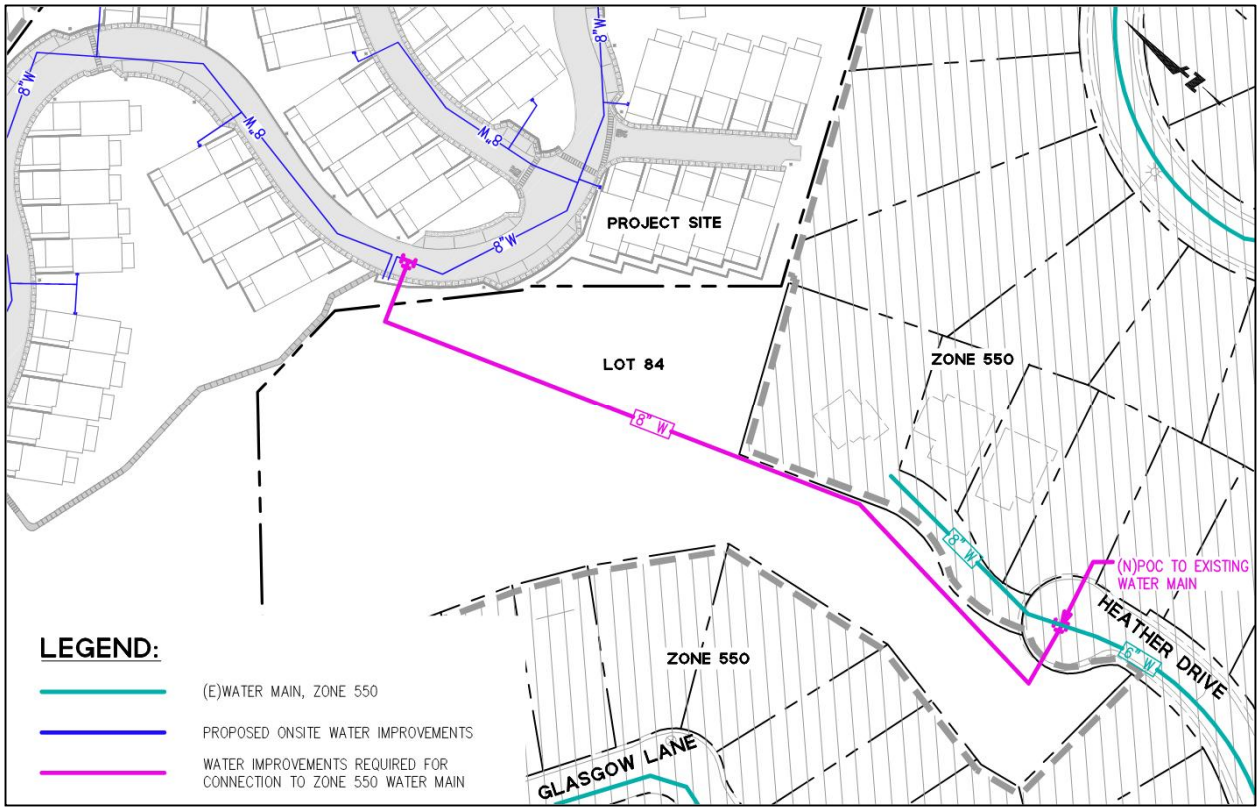


Figure 7: Upper Site Alternative - 550 Zone

4.3 Upper Site Alternative – 585 Zone

Coronado avenue POC via Easement

- A connection on Coronado Avenue would require the following improvements:
  - Replace existing 6” with 8” on Coronado Avenue from easement to Elston Court – 1,250 LF
  - 8” main via existing easement to Coronado Avenue - 450 LF
  - 8” main extension onsite – 450 LF

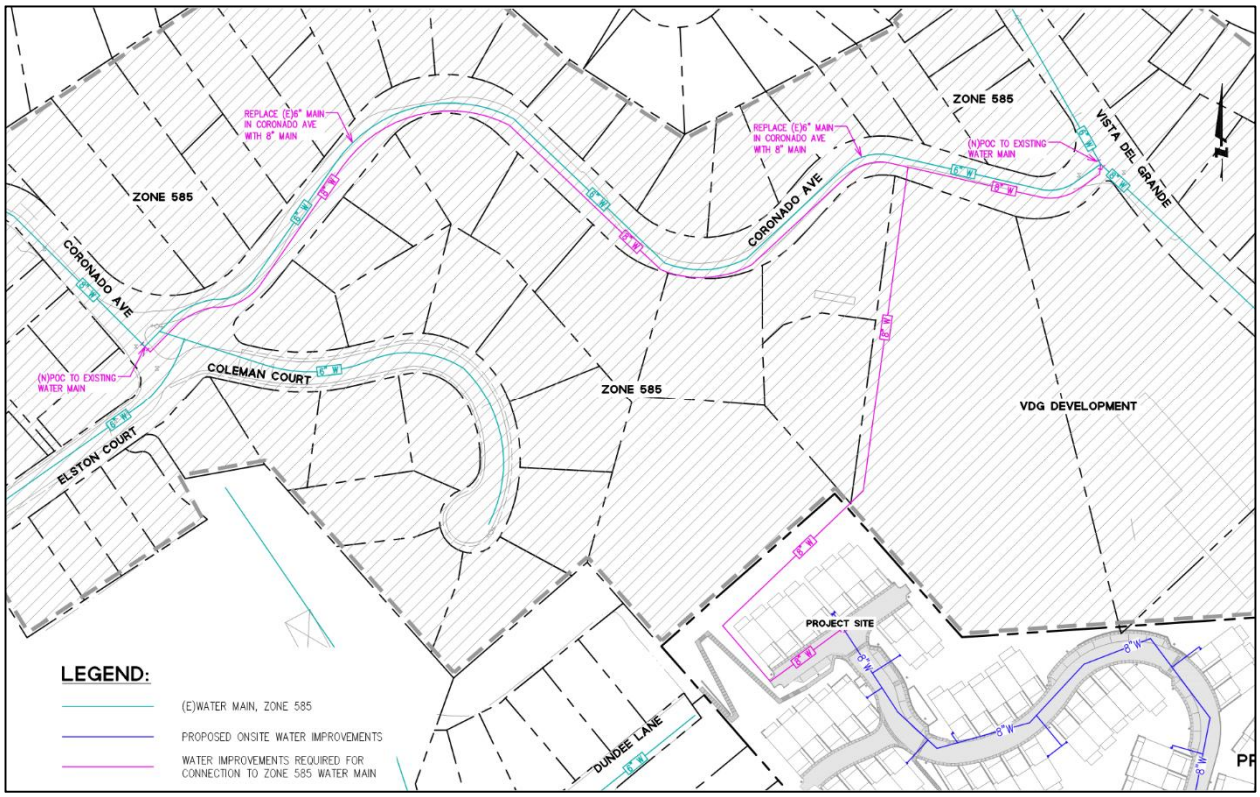


Figure 8: Upper Site Connection to 585 Zone

5.0 ATTACHMENTS

Attachment A Preferred Water Supply Connection/Improvements

Attachment B Calculations

Attachment C Fire Hydrant Flow Test Results

Attachment D Calwater Will Serve Letter

Attachment E Calwater Follow-up Letter

ATTACHMENT A

Preferred Water Supply Connection/Improvements

SANITARY SEWER NOTES:

1. ALL SEWER WORK SHALL BE IN CONFORMANCE WITH THE CITY OR APPROPRIATE SANITARY SEWER DISTRICT.
2. PRIVATE SANITARY SEWER SERVICE LINE 4-INCH THROUGH 8-INCH SHALL BE POLYVINYL CHLORIDE (PVC) SDR 26 GREEN SEWER PIPE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION D 3034-73 WITH GLUED JOINTS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, 22.5° ELBOWS or 45° ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED. PUBLIC SANITARY SEWER LINES AND MAINS SHALL BE PER CITY STANDARDS.
3. ALL LATERALS SHALL HAVE A CLEANOUT AT FACE OF BUILDING AND AS SHOWN ON PLANS PER THE CITY STANDARD OR APPROPRIATE SANITARY SEWER DISTRICT.
4. IF (E) SEWER LATERAL IS TO BE USED, CONTRACTOR SHALL PERFORM PRESSURE TEST ON (E) SEWER LATERAL, AND SHALL PERFORM ANY NEEDED REPAIRS. EXTEND (N) OR (E) SEWER LINE AS SHOWN ON THE PLANS SLOPED AT 2% MINIMUM. INSTALL CLEANOUT AT FACE OF BUILDING AND AT PROPERTY LINE.

WATER MAIN EXTENSION NOTES:

1. WATER MAIN TO SERVE UPPER SITE (34 UNITS) TO TIE INTO CALWATER PRESSURE ZONE 585 AT CORONADO AVENUE. REFER TO WATER SUPPLY MEMORANDUM FOR FULL EXTENT OF WORK AND DESIGN ALTERNATIVES.

STORM DRAIN NOTES:

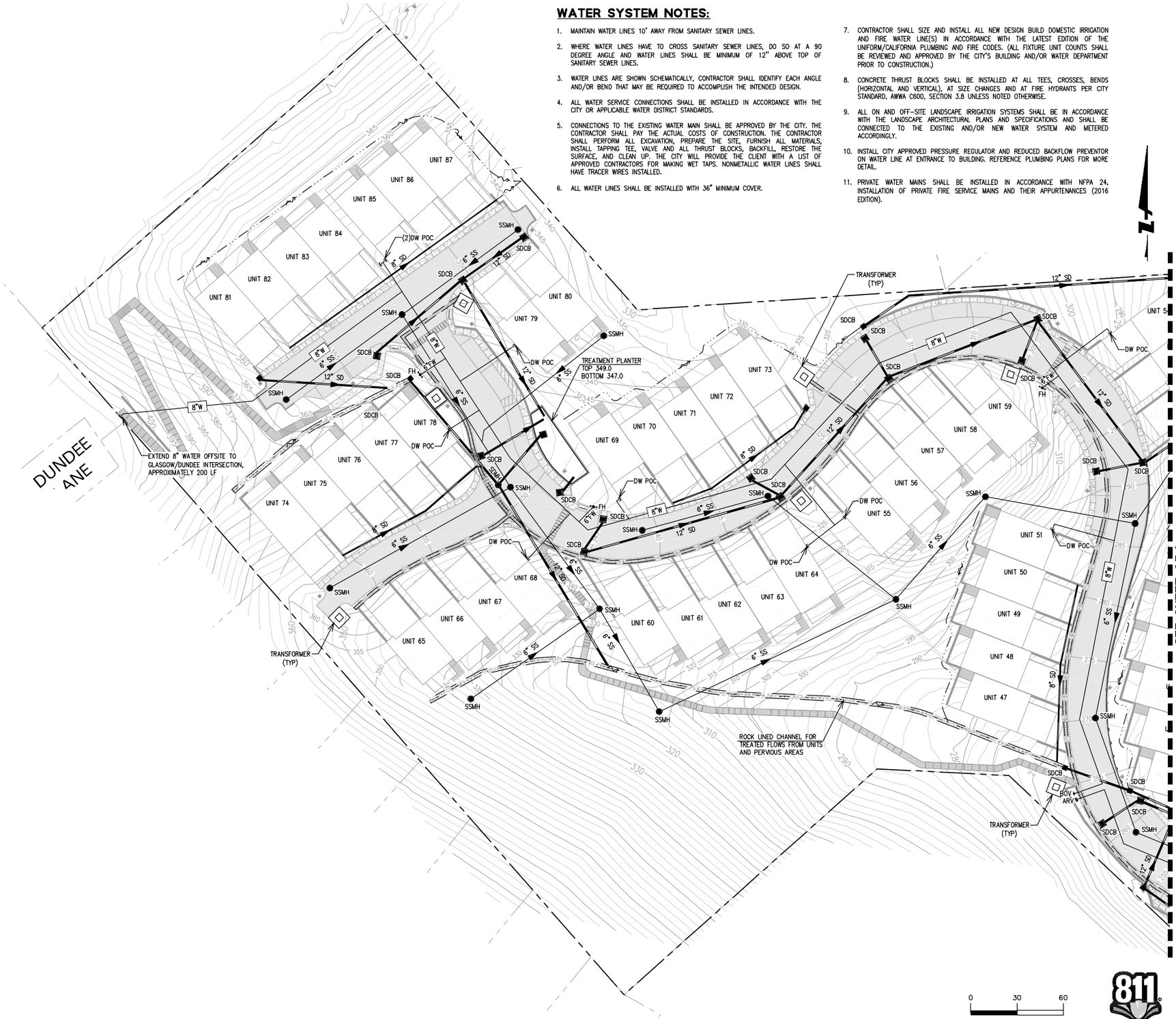
1. PRIVATE STORM DRAIN LINE 4-INCH THROUGH 12-INCH WITH A MINIMUM OF TWO (2) FEET OF COVER IN NON-TRAFFIC AREAS SHALL BE POLYVINYL CHLORIDE (PVC) SDR 35 WHITE PIPE AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION D 3034-73 WITH GLUED JOINTS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, 22.5° ELBOWS, 45° ELBOWS OR LONG SWEEP ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED.
2. PRIVATE STORM DRAIN LINE 6-INCH THROUGH 12-INCH WITH LESS THAN THREE (3) FEET OF COVER IN VEHICULAR TRAFFIC AREAS SHALL BE POLYVINYL CHLORIDE (PVC) C900, RATED FOR 150 PSI CLASS PIPE. PROVIDE AND INSTALL "STORM DRAIN" MARKER TAPE FOR THE ENTIRE LENGTH OF PIPE TRENCH IN ACCORDANCE WITH CITY STANDARDS. ALL DIRECTION CHANGES SHALL BE MADE WITH WYE CONNECTIONS, OBTUSE ELBOWS OR LONG SWEEP ELBOWS, 90° ELBOWS AND TEE's ARE PROHIBITED.
3. ALL AREA DRAINS AND CATCH BASINS GRATES WITHIN PEDESTRIAN ACCESSIBLE AREAS SHALL MEET ADA REQUIREMENTS.
4. ALL TRENCHES SHALL BE BACK FILLED PER THE SPECIFICATIONS WITH APPROPRIATE TESTS BY THE GEOTECHNICAL ENGINEER TO VERIFY COMPACTION VALUES.
5. FOR GRAVITY FLOW SYSTEMS CONTRACTOR SHALL VERIFY (POTHOLE IF NECESSARY) SIZE, MATERIAL, LOCATION AND DEPTH OF ALL SYSTEMS THAT ARE TO BE CONNECTED TO OR CROSSED PRIOR TO THE TRENCHING OR INSTALLATION OF ANY GRAVITY FLOW SYSTEM.
6. DRAINS SHOWN ON CIVIL PLANS ARE NOT INTENDED TO BE THE FINAL NUMBER AND LOCATION OF ALL DRAINS. PLACEMENT AND NUMBER OF LANDSCAPING DRAINS ARE HIGHLY DEPENDENT ON GROUND COVER TYPE AND PLANT MATERIAL. CONTRACTOR SHALL ADD ADDITIONAL AREA DRAINS AS NEEDED AND AS DIRECTED BY THE LANDSCAPE ARCHITECT OR CIVIL ENGINEER.

UTILITY LEGEND:

- X" SD — PRIVATE STORM DRAIN AND APPURTENANCES
- X" W — PRIVATE WATER AND APPURTENANCES, SEE NOTE 11
- X" SS — PRIVATE SANITARY SEWER AND APPURTENANCES
- X" SS (SS) — PUBLIC SANITARY SEWER AND APPURTENANCES
- JOINT TRENCH FOR PUBLIC UTILITIES

WATER SYSTEM NOTES:

1. MAINTAIN WATER LINES 10' AWAY FROM SANITARY SEWER LINES.
2. WHERE WATER LINES HAVE TO CROSS SANITARY SEWER LINES, DO SO AT A 90 DEGREE ANGLE AND WATER LINES SHALL BE MINIMUM OF 12" ABOVE TOP OF SANITARY SEWER LINES.
3. WATER LINES ARE SHOWN SCHEMATICALLY, CONTRACTOR SHALL IDENTIFY EACH ANGLE AND/OR BEND THAT MAY BE REQUIRED TO ACCOMPLISH THE INTENDED DESIGN.
4. ALL WATER SERVICE CONNECTIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OR APPLICABLE WATER DISTRICT STANDARDS.
5. CONNECTIONS TO THE EXISTING WATER MAIN SHALL BE APPROVED BY THE CITY. THE CONTRACTOR SHALL PAY THE ACTUAL COSTS OF CONSTRUCTION. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION, PREPARE THE SITE, FURNISH ALL MATERIALS, INSTALL TAPPING TEE, VALVE AND ALL THRUST BLOCKS, BACKFILL, RESTORE THE SURFACE, AND CLEAN UP. THE CITY WILL PROVIDE THE CLIENT WITH A LIST OF APPROVED CONTRACTORS FOR MAKING WET TAPS. NONMETALLIC WATER LINES SHALL HAVE TRACER WIRES INSTALLED.
6. ALL WATER LINES SHALL BE INSTALLED WITH 36" MINIMUM COVER.
7. CONTRACTOR SHALL SIZE AND INSTALL ALL NEW DESIGN BUILD DOMESTIC IRRIGATION AND FIRE WATER LINE(S) IN ACCORDANCE WITH THE LATEST EDITION OF THE UNIFORM/CALIFORNIA PLUMBING AND FIRE CODES. (ALL FIXTURE UNIT COUNTS SHALL BE REVIEWED AND APPROVED BY THE CITY'S BUILDING AND/OR WATER DEPARTMENT PRIOR TO CONSTRUCTION.)
8. CONCRETE THRUST BLOCKS SHALL BE INSTALLED AT ALL TEES, CROSSES, BENDS (HORIZONTAL AND VERTICAL), AT SIZE CHANGES AND AT FIRE HYDRANTS PER CITY STANDARD, AWWA C600, SECTION 3.8 UNLESS NOTED OTHERWISE.
9. ALL ON AND OFF-SITE LANDSCAPE IRRIGATION SYSTEMS SHALL BE IN ACCORDANCE WITH THE LANDSCAPE ARCHITECTURAL PLANS AND SPECIFICATIONS AND SHALL BE CONNECTED TO THE EXISTING AND/OR NEW WATER SYSTEM AND METERED ACCORDINGLY.
10. INSTALL CITY APPROVED PRESSURE REGULATOR AND REDUCED BACKFLOW PREVENTOR ON WATER LINE AT ENTRANCE TO BUILDING. REFERENCE PLUMBING PLANS FOR MORE DETAIL.
11. PRIVATE WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 24, INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES (2016 EDITION).



SEE SHEET C5.2

0 30 60
GRAPHIC SCALE

Know what's **below.** **Call before you dig.**

BKF
255 SHORELINE DRIVE
SUITE 200
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(650) 482-6300
www.bkf.com

UTILITY PLAN
808 ALAMEDA DE LAS PULGAS
ALAMEDA DE LAS PULGAS
SAN MATEO COUNTY CALIFORNIA

SAN CARLOS

REGISTERED PROFESSIONAL ENGINEER — BRIAN J. LEE — No. 76806 — CIVIL — STATE OF CALIFORNIA

REVIEW ONLY NOT FOR CONSTRUCTION

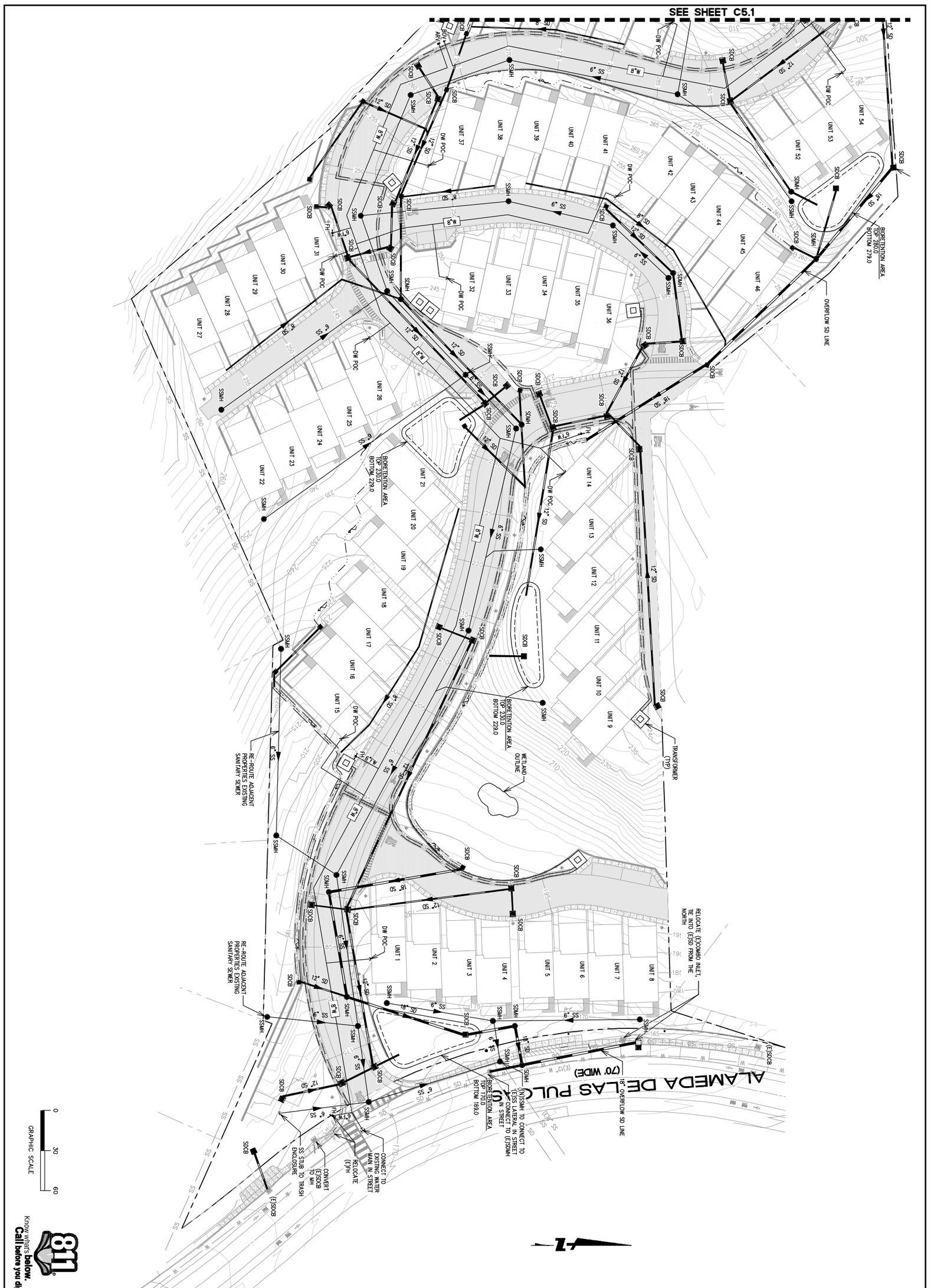
No.	Revisions	Date
1	PLANNING RESUBMITTAL	09/15/2020
2	COMMENT RESPONSE	03/05/2021
3	COMMENT RESPONSE	01/24/2022

Date: 12/05/2018
Scale: 1" = 30'
Design: DJP
Drawn: DLG
Approved: DJL
Job No: 20160150

Drawing Number:
C5.1
OF

DRAWING NAME: \\Bkf-rc\data\2016\160150_Black_Mountain_San_Carlos\ENG\tmsheets.dwg
PLOT DATE: 01-27-22 PLOTTED BY: gold

DRAWING NAME: \\Bkf-rc\data\2016\160150_Black_Mountain_San_Carlos\ENG\bmsheets.dwg
PLOT DATE: 01-27-22 PLOTTED BY: gald



Know what's below. Call before you dig. 811

Date: 12/05/2018	No.	Revisions	Date
Scale: 1" = 30'	1	PLANNING RESUBMITTAL	09/15/2020
Design: DJP	2	COMMENT RESPONSE	03/05/2021
Drawn: DLG	3	COMMENT RESPONSE	01/24/2022
Approved: DJL			
Job No: 20160150			

Drawing Number: C5.2 OF

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UTILITY PLAN
808 ALAMEDA DE LAS PULGAS
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ATTACHMENT B

Calculations

Redwood City Office
255 Shoreline Drive, Suite 200
Redwood City, CA, 94065
Tel 650.482.6300
Fax 650.482.6399

806 ALAMEDA DE LAS PULGAS
Residual Pressure Calculations for Lower Site Fire Flow

ELEVATION LOSSES

Pressure Test Elevation (E)FH #SC-340	171	ft	Located on Madera Ave & Alameda de las Pulgas
Proposed FH Elevation	270	ft	
Elevation Head Loss	99	ft	
Elevation Pressure Loss	43	psi	

OFF-SITE LOSSES

Subscript / Data Point	Q [Flow]	Residual Pressure (psi)	Pressure Loss [PL] (psi)
Static	0	82	0
Test Flow	3216	71	11

Q_{Pr}	=	1500	gpm	Proposed Fire Flow
$PL_{Pr} = PL_{Test}*(Q_{Pr}/Q_{Test})^{1.852}$	=	2.7	psi	Off-site Loss at Proposed Fire Flow (1500 GPM)

ON-SITE LOSSES

Source of Losses	I.D. (in)	C-Factor	Q, Flow (gpm)	Pipe Length (ft)	Headloss (psi/ft)	Headloss (psi)	Velocity (ft/s)	Description
8" New C900 PVC DR 14	7.7	140	1500	910	0.018	16	10.3	Proposed main from tee to backflow prevention assembly

Total On-site Losses 16 psi

RESIDUAL PRESSURE CALCULATIONS

Static Pressure	82	psi
Elevation Loss	43	psi
Offsite Losses	3	psi
On-site Losses	16	psi
Residual Pressure @ Proposed Hydrant	20	psi

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255 Shoreline Drive, Suite 200
Redwood City, CA, 94065
Tel 650.482.6300
Fax 650.482.6399

806 ALAMEDA DE LAS PULGAS
Residual Pressure Calculations for Upper Site Fire Flow - Existing 8" Main in Dundee Lane

ELEVATION LOSSES

Pressure Test Elevation (E)FH #SC-784)	406	ft	Located at 109 Dundee Lane
Proposed FH Elevation	352	ft	
Elevation Head Loss	-54	ft	
Elevation Pressure Loss	-23	psi	

OFF-SITE LOSSES

Subscript / Data Point	Q [Flow]	Residual Pressure (psi)	Pressure Loss [PL] (psi)
Static	0	60	0
Test Flow	1631	36	24

Q_{Pr}	=	1500	gpm	Proposed Fire Flow
$PL_{Pr} = PL_{Test}*(Q_{Pr}/Q_{Test})^{1.852}$	=	20.6	psi	Off-site Loss at Proposed Fire Flow (1500 GPM)

ON-SITE LOSSES

Source of Losses	I.D. (in)	C-Factor	Q, Flow (gpm)	Pipe Length (ft)	Headloss (psi/ft)	Headloss (psi)	Velocity (ft/s)	Description
8" New C900 PVC DR 14	7.7	140	1500	480	0.018	8	10.3	Proposed 8" main from tee in Dundee to hydrant tee at Unit 78

RESIDUAL PRESSURE CALCULATIONS

Static Pressure	60	psi
Elevation Loss	-23	psi
Offsite Losses	21	psi
On-site Losses	8	psi
Residual Pressure @ Proposed Hydrant	54	psi

ATTACHMENT C

Fire Hydrant Flow Test Results

California Water Service Company
Fire Flow Test

7/5/2018

Test Date: 09/06/2017 Time: 11:15

District SAN CARLOS Zone: 450 Plat: 25-24

Address: Coronado AVE

Cross Street:

Requested By: David Terhune,Ruggeri-Jensen-Azar

Conducted By: Mike Acker

Purpose Of Test: Fire flow for Coronado & Vista del Grande and Madera Ave & Alameda de las Pulgas,SC

Witnessed By: Calwater: Chris Ogden

Others:

Outlet No.	Outlet Size	PITOT	Observed	Static Pressure	Residual Pressure	Flow Observed	Flow Avail. @20
Location 1 Hydrant No.: SC-389			Address: Coronado Ave. SC				
1	2.50	11	557	106	27	1138	1191
2	2.50	12	581				
3							
4							
Location 2 Hydrant No.: -			Address:				
1							
2							
3							
4							
Location 3 Hydrant No.-			Address:				
1							
2							
3							
4							
			Total Flow Observed Available @20:			1138	1191

Remarks:

Static/Residual Location: 20 Coronado, SC

Note:

Regardless of the results of this test, California Water Service Company assumes no liability beyond that stated in the following excerpt from the P.U.C. Tarriff Schedule: "The utility (California Water Service Company) will supply only such water at such pressure as may be available from time to time as a result of its normal operation of the system."

California Water Service Company
Fire Flow Test

7/5/2018

Test Date: 09/06/2017 Time: 11:15

District SAN CARLOS Zone: 450 Plat: 25-24

Address: Madera AVE

Cross Street: Alameda de las Pulgas

Requested By: Davie Terhune,Ruggeri-Jensen-Azar

Conducted By: Mike Acker

Purpose Of Test: Fire flow for Madera Ave & Alameda de las Pulgas, SC

Witnessed By: Calwater: Chris Ogden

Others:

Outlet No.	Outlet Size	PITOT	Observed	Static Pressure	Residual Pressure	Flow Observed	Flow Avail. @20
Location 1 Hydrant No.: SC-340			Address: NW corner of Madera Ave & Alameda de las Pulgas				
1	4.50	35	3216	82	71	3216	8183
2							
3							
4							
Location 2 Hydrant No.:-			Address:				
1							
2							
3							
4							
Location 3 Hydrant No.-			Address:				
1							
2							
3							
4							
			Total Flow Observed Available @20:			3216	8183

Remarks:

Static/Residual Location: Hydarnt #341

Note:

Regardless of the results of this test, California Water Service Company assumes no liability beyond that stated in the following excerpt from the P.U.C. Tarriff Schedule: "The utility (California Water Service Company) will supply only such water at such pressure as may be available from time to time as a result of its normal operation of the system."

California Water Service Company
Fire Flow Test

10/19/2018

Test Date: 10/18/2018 Time: 14:30

District SAN CARLOS Zone: 585 Plat: 25-24

Address: 109 Dundee LN

Cross Street:

Requested By: Dragonfly Assets

Conducted By: Mike Acker

Purpose Of Test: Fire flow for Dundee Ln, SC

Witnessed By: Calwater: Chris Ogden

Others:

Outlet No.	Outlet Size	PITOT	Observed	Static Pressure	Residual Pressure	Flow Observed	Flow Avail. @20
Location 1 Hydrant No.: SC-784			Address: 109 Dundee Ln, SC				
1	4.50	9	1631	60	36	1631	2149
2							
3							
4							
Location 2 Hydrant No.:			Address:				
1							
2							
3							
4							
Location 3 Hydrant No.			Address:				
1							
2							
3							
4							
			Total Flow Observed Available @20:			1631	2149

Remarks:

Static/Residual Location: 176 Glasgow Ln

Note:

Regardless of the results of this test, California Water Service Company assumes no liability beyond that stated in the following excerpt from the P.U.C. Tarriff Schedule: "The utility (California Water Service Company) will supply only such water at such pressure as may be available from time to time as a result of its normal operation of the system."


6" AC
6" AC
Vista Del Grande
8" AC
SC 683
ELEV: 325
8" AC
SC-340
MADERA @ ALAMEDA
ELEV: 137
STATIC: 82
RES: 71 @ 3216 gpm
RES: 20 @ 8183 gpm
SC-389
CORONADO AVE
ELEV: 326
SC-439
35 CORONADO AVE
ELEV: 326
STATIC: 106
RES: 27 @ 1138 gpm
RES: 20 @ 1191 gpm
12"AC
SC-784
109 DUNDEE LN
ELEV: 406
STATIC: 60
RES: 36 @ 1631 gpm
RES: 20 @ 2149 gpm
NEW TIE-IN POINT
SC 341
ELEV: 171
8" AC
8" AC
8" AC
SC 804
ELEV: 332
6" CI
6" CI
8" AC
6" CI
Bauer Ct
© 2018 Google

ATTACHMENT D

Calwater Will Serve Letter

CALIFORNIA WATER SERVICE

Bayshore District 341 North Delaware Street
San Mateo, CA 94401 *Tel:* (650) 558-7800

March 18, 2021

Dragonfly Group
777 Bridgepointe Circle
San Mateo, CA 94404

RE; **Will Serve Letter – Black Mountain Project, 68 Unit Townhome Subdivision and Clubhouse**
APN 049-360-060 – 800 Alameda De Las Pulgas, San Carlos, CA 94070
APN 050-220-020 – 804 Alameda De Las Pulgas, San Carlos, CA 94070
APN 050-220-170 – 806 Alameda De Las Pulgas, San Carlos, CA 94070
APN 050-220-160 – 808 Alameda De Las Pulgas, San Carlos, CA 94070

Dear Dragonfly Group:

As a regulated utility, California Water Service Company Bayshore district ("Cal Water") has an obligation to provide water service in accordance with the rules and regulations of the California Public Utility Commission (CPUC). Assuming you receive all required permits from City of San Carlos, Cal Water will provide water service to the above referenced project. Cal Water agrees to operate the water system and provide service in accordance with the rules and regulations of the California Public Utilities Commission (CPUC) and the company's approved tariffs on file with the CPUC. This will serve letter shall remain valid for **two years** from the date of this letter. If construction of the project has not commenced within this **two year** time frame, Cal Water will be under no further obligation to serve the project unless the developer receives an updated letter from Cal Water reconfirming our commitment to serve the above mentioned project. Additionally, Cal Water reserves the right to rescind this letter at any time in the event its water supply is severely reduced by legislative, regulatory or environmental actions.

Cal Water will provide such potable water at such pressure as may be available from time to time as a result of its normal operations per the company's tariffs on file with the CPUC. Installation of facilities through developer funding shall be made in accordance with the current rules and regulations of the CPUC including, among others, Tariff Rules 15 and 16 and General Order 103-A. In order for us to provide adequate water for domestic use as well as fire service protection, it may be necessary for the developer to fund the cost of special facilities, such as, but not limited to, booster pumps, storage tanks and/or water wells, in addition to the cost of mains and services. Cal Water will provide more specific information regarding special facilities and fees after you provide us with your improvement plans, fire department requirements, and engineering fees for this project.

This letter shall at all times be subject to such changes or modifications by the CPUC as said Commission may, from time to time, require in the exercise of its jurisdiction.

If you have any questions regarding the above, please call me at *(650) 558-7862*.

Sincerely,

Leighton Low
Superintendent
California Water Service

ATTACHMENT E

Calwater Follow-up Letter

CALIFORNIA WATER SERVICE
1720 North First Street
San Jose, CA 95112-4598 *Tel:* (408) 367-8200

April 5, 2019

Dale Leda
BKF Engineers
255 Shoreline Drive Suite 200
Redwood City, CA 94065

Subject: Dragonfly – Black Mountain Property

Dear Mr. Leda,

We have reviewed the grading plan of the proposed development at the above mentioned property. The only way to serve this development reliably and per General Order 103 is to supply water to the houses at the upper elevation (270' and above) with our 550 pressure zone and houses at the lower elevation (below 270') with our 365 pressure zone. The connection to our 365 pressure zone can be installed at the entrance of the proposed development on Alameda De Las Pulgas. The connection to our 550 pressure zone can be installed either via Dundee Lane or Heather Court. This should be the primary supply to the upper elevation of the proposed development. We understand that there is a need to pursue easement through private properties to make a connection to either Dundee Lane or Heather Court. We need the easement to properly supply the proposed development.

We also understand that there is a likelihood in obtaining easement through private properties from Vista Del Grande. However, this can only be a secondary feed to the proposed development with pressure reducing valve to supplement fire flow need. The water supply from Vista Del Grande will provide pressure exceeding G.O. 103 to the upper elevation of the proposed development. Creating another pressure zone off a dead-end pipeline from Vista Del Grande will increase the risk of losing fire protection to the proposed development, not to mention that it may not provide sufficient flow to meet the fire flow requirement for the proposed development.

Should you have any difficulty in obtaining easement through Dundee Lane or Heather Court, we can work out other alternatives with you. This may include building of a pumping station within the proposed development to feed the upper elevation from our 365 pressure zone in addition to a feed from Vista Del Grande.

Since no fire flow requirement is provided at this time, our review does not include flow analysis. If the proposed connections to the upper and lower elevations do not provide

sufficient flow the meet the fire flow requirement of the proposed development, the developer is required to fund any distribution system upgrade and/or pump station to bring sufficient flow to the proposed development for fire protection.

Please feel free to contact me at (408) 367-8323 for further questions. We look forward to working with you further to provide service to the proposed development. Thank you.

Sincerely,

Ting He, P.E.
Manager of Distribution, Engineering

Appendix N2:
Sanitary Sewer Capacity Memorandum

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TECHNICAL MEMORANDUM

Date: June 25, 2021 **BKF Job Number:** 20160150
To: City of San Carlos Public Works Department

From: Dale Leda, PE
BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, CA 94065

Subject: **Black Mountain Property Sanitary Sewer Calculations**

Summary

At the request of the City, BKF performed an analysis on the capacity of the Tamarack/Alma sanitary sewer main (6-inch diameter) from the project site to tie-in to the City's trunk line system at Carmelita Drive (8-inch diameter). We studied the pre-development and post development wet weather peak flows through the system and compared them to the overall capacity of the main based on the most constrained stretch of pipe (i.e. flattest sloped section).

The attached calculations and exhibits indicate that the addition of 87 townhomes to the Black Mountain Property, in conjunction with reduction in infiltration/inflow (I/I flows) proposed by the development, will result in a post development peak wet weather flow of about 42% of the total main's capacity at the flattest section of pipe.

Our calculations also indicate that due to the large contribution of I/I flows which would be eliminated as part of the proposed development, the overall project would result in a net reduction in peak wet weather flows versus the existing condition.

Table 1- Wet Weather Flows for Tamarack / Alma 6 in. Sanitary Sewer Main

	Residential Peak Dry Weather Flow (cfs)	Rain Dependent I/I Flow (cfs)	Wet Weather Peak Flow (cfs)	6" SS Pipe Fullness (%)[1]
Pre-Development	0.051	0.143	0.193	49%
Post-Development	0.082	0.077	0.168	42%

1- Pipe Fullness based on 6"SS, S=0.5%, Capacity = 0.397 cfs

Table 1 above summarizes contributing flows for both pre-development and post-development conditions in the Tamarack/Alma main system, immediately upstream of its connection into the Carmelita Drive 8-inch trunk line.

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Assumptions

City block maps were used to determine the routing of sanitary sewer from the site to its point of connection at Carmelita Drive and the surrounding tributaries. Pipe sizes are indicated in block maps. Sewer pipe longitudinal slopes were assumed based on limited field evidence and GoogleEarth approximate street elevations and lengths, and conservatively adjusted to likely minimum slopes based on typical sewer mains (the flattest portion of street was determined approximately 0.9%, so we assumed a minimum underlying pipe slope of 0.5%).

Residential flows to the existing and proposed development were based on number of residential single family and multi-family units using City block maps, with flowrates (GPD/unit) pulled from the San Carlos 2013 Sewer Collection System Master Plan, which were then converted to peak dry weather flowrates using a peaking factor of 2.5.

I/I tributary areas were approximated using block maps and GoogleEarth. I/I wet weather flowrates (gpd/acre) were also pulled from the Master Plan and converted to standard units. No peaking factor was applied to the I/I anticipated flows.

ATTACHMENTS:

- Attachment 1 – Sanitary Sewer Plan & Tributary Area Exhibit
- Attachment 2 – Pre/Post Sewer Generation Calculations, SS Pipe Capacity Calculation
- Attachment 3 – Excerpts from 2013 San Carlos Sewer Master Plan

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Attachment 1

Sanitary Sewer Plan and Tributary Area Exhibit

BLACK MOUNTAIN TRIBUTARY
(11.43 ACRES)

BAUER DRIVE TRIBUTARY
(1.88 ACRES)

TAMARACK TRIBUTARY
(11.58 ACRES)

6" PE
6" VCP
6" SS MAN

GLASGOW LN
HEATHER DR.
BAUER DR.
VISTA DEL GRANDE
CENTERWOOD CT
MADERA AVE.
PINE AVE
ALAMEDA DE LAS PULGAS
ALMA ST.
TAMARACK AVE.
CARMELITA DR.
BEGINNING OF SSMP SEWER MODEL
CORDILLERAS AVE.
ELIZABETH ST
RUTHERDALE AVE.

LEGEND

- BOUNDARY
- SANITARY SEWER
- RAIN DEPENDENT I/I TRIBUTARY AREA

0 200 400

GRAPHIC SCALE

BKF
255 SHORELINE DR
SUITE 200
REDWOOD CITY, CA 94065
650-482-6300
650-482-6399 (FAX)

SANITARY SEWER PLAN & TRIBUTARY AREA
BLACK MOUNTAIN PROPERTY
ALAMEDA DE LAS PULGAS

SAN CARLOS, SAN MATEO COUNTY, CALIFORNIA

No.	Revisions

Date: 7/11/2018
Scale: 1"=200'
Design: CAM
Drawn: CAM
Approved: XX
Job No: 20160150

Drawing Number:
SS-1
OF

DRAWING NAME: K:\2016\160150_Black_Mountain_San_Carlos\DOCS\06-Design\3-Wastewater_System\Attachments\bmaasexhibits.dwg
PLOT TIME: 07-12-18
PLOTTED BY: MJRC

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Attachment 2

Pre-Development Sewer Generation Calcs

Post-Development Sewer Generation Calcs

Tamarack/Alma System Capacity Calcs

BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, CA 94065

BLACK MOUNTAIN PROPERTY
PRE-DEVELOPMENT SEWER GENERATION

TABLE 1. ESTIMATED PRE-DEVELOPMENT RESIDENTIAL SEWER GENERATION

UNIT TYPE	UNITS	FLOWRATE/UNIT (GPD)	AVERAGE FLOWRATE (GPD)	AVERAGE FLOWRATE (CFS)	PEAKING FACTOR	DRY WEATHER PEAK FLOWRATE (CFS)
Single Family	69	190	13,110	0.020	2.5	0.051
Multi Family	0	120	0	0.000	2.5	0.000
SUM						0.051

TABLE 2. ESTIMATED PRE-DEVELOPMENT RAIN DEPENDENT I/I GENERATION

SITE	TRIBUTARY AREA (ACRES)	I/I FLOWRATE (GPD/AC)	I/I FLOWRATE (GPD)	I/I FLOWRATE (CFS)
Black Mountain Trib.	11.43	3,700	42,291	0.065
Bauer Dr. Trib.	1.88	3,700	6,956	0.011
Tamarack Trib.	11.58	3,700	42,846	0.066
SUM	24.89			0.143

SEWER MAIN WET WEATHER PEAK FLOW (CFS)	0.193

NOTES

1. Residentual Unit Flowrates based on the 2013 Sewer Master Plan (p.2-10)
2. I/I flowrates are based on 2013 Sewer Maser Plan, Basin 4 contributing flow, Table 3-3 (p.3-11)

BKF Engineers
255 Shoreline Drive, Suite 200
Redwood City, CA 94065

BLACK MOUNTAIN PROPERTY
POST-DEVELOPMENT SEWER GENERATION

TABLE 1. ESTIMATED PRE-DEVELOPMENT RESIDENTIAL SEWER GENERATION

UNIT TYPE	UNITS	FLOWRATE/UNIT (GPD)	AVERAGE FLOWRATE (GPD)	AVERAGE FLOWRATE (CFS)	PEAKING FACTOR	DRY WEATHER PEAK FLOWRATE (CFS)
Single Family	69	190	13110	0.020	2.5	0.051
Multi Family	87	120	10440	0.016	2.5	0.040
SUM						0.091

TABLE 2. ESTIMATED PRE-DEVELOPMENT RAIN DEPENDENT I/I GENERATION

SITE	TRIBUTARY AREA (ACRES)	I/I FLOWRATE (GPD/AC)	I/I FLOWRATE (GPD)	I/I FLOWRATE (CFS)
Black Mountain Trib.	0	3,700	0	0.000
Bauer Dr. Trib.	1.88	3,700	6,956	0.011
Tamarack Trib.	11.58	3,700	42,846	0.066
SUM	13.46			0.077

SEWER MAIN WET WEATHER PEAK FLOW (CFS)	0.168

NOTES

1. The post development I/I tributary area for Black Mountain will be reduced to zero acres, due to all existing sewer mains and unauthorized connections within the property being replaced with a new system.

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Redwood City Office
255 Shoreline Drive, Suite 200
Redwood City, CA, 94065
Tel 650.482.6300
Fax 650.482.6399

Tamarack/Alma Pipe Capacity Upstream of Carmelita POC
6-inch PE @ 0.5% Slope

Project Address: Black Mountain Property
BKF Job No: 20160150-10
Date: 6/25/2021
Calcs By: DJL

Peak Hourly Flow Rates (Q_{Peak}):

Tamarack / Alma System	**Q_{Peak} [cfs] = 0.168**	* Flows from post-development wet weather flows to Tamarack/Alma system. See Tables 3 and 4 for contributing properties.

Pipe Capacity (Q_{PIPE}):

$Q_{PIPE} = A \times V$

$V = (k/n) \times R_h^{2/3} \times S^{1/2}$

k [] =	1.486	k is a conversion constant equal to 1.486 for U.S. units
n [] =	0.013	n is the Gaukler-Manning coefficent (0.013 for PE pipe)
R_h [ft] =	0.125	R_h is the hydraulic Radius (R_h = A/P)
A [ft^2] =	**0.196**	A is the cross-sectional area of flow (A = ¼ πD^2 for full pipe)
P [ft] =	1.571	P is wetted perimeter (P = πD for full pipe)
D [ft] =	0.50	D is diameter of the lateral (6" pipe)
S [] =	0.005	S is the slope of the pipe (0.5% slope))[1]
V [ft/sec] =	**2.021**	V is the cross-sectional average velocity
Q_{PIPE} [cfs] =	**0.397**	Q_{PIPE} is the flow capacity of the pipe

Check $Q_{PIPE} > Q_{Peak}$: **TRUE**

Check that the pipe has enough capacity to hold the sanitary flow rate from Carmelita Dr. System

Percent Full **0.424**

NOTES

1. Minimum Manhole Rim-Rim slopes determined via GoogleEarth are approximately 1%. Conservatively assumed pipe slope at 0.5%.

BkF 100+ YEARS
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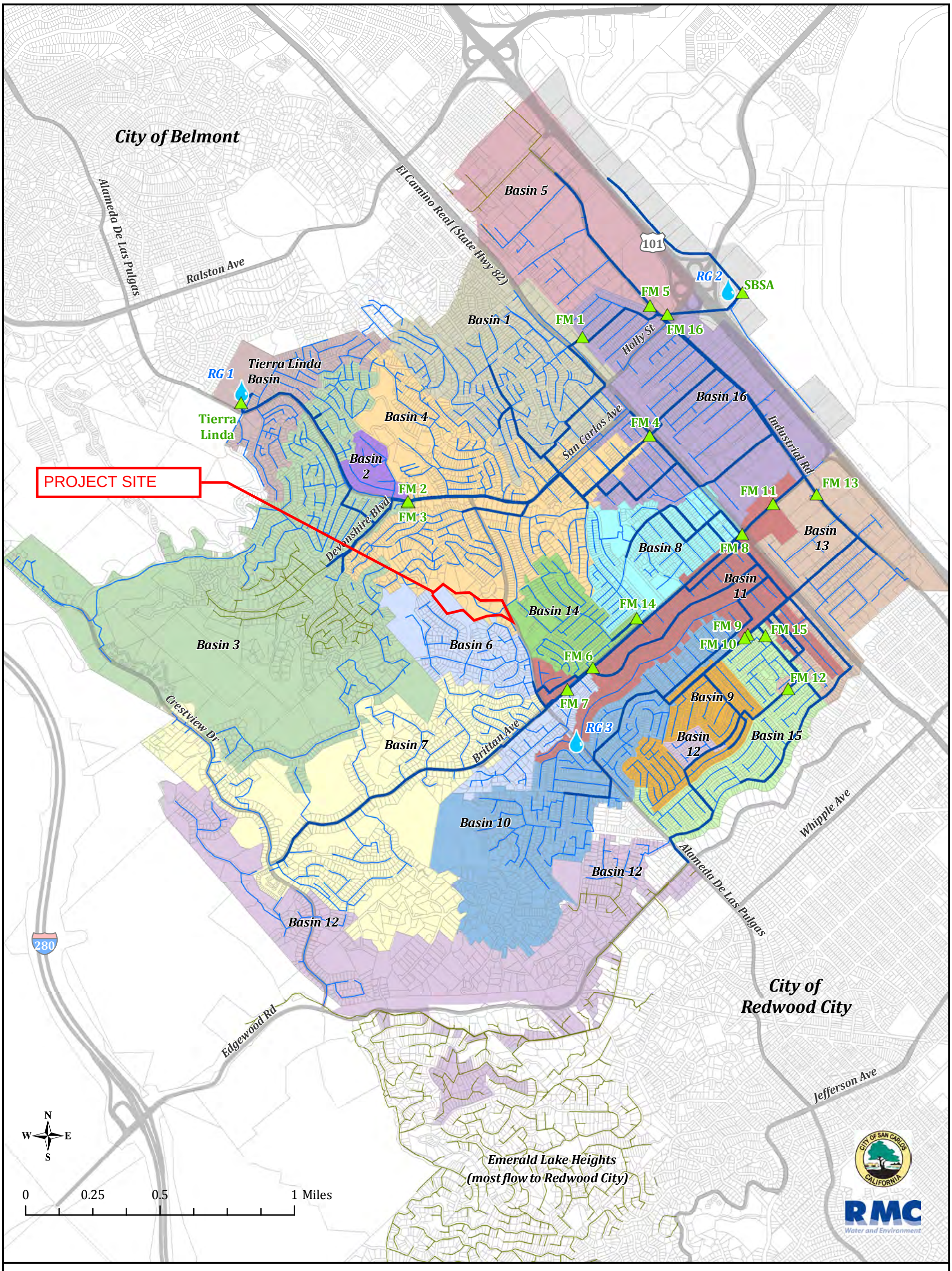
Attachment 3

Excerpts from 2013 San Carlos Sanitary Sewer Collection System Master Plan



City of San Carlos
Sewer Collection System Master Plan

Flow Monitoring Sites & Tributary Areas

Figure 2-2

0464-001 San Carlos Sewer Master Plan\G. GIS\MXDs\Figures for Report\2-2_Flow Monitoring Sites & Tributary Areas.mxd

Table 2-2 lists each of the planned development projects and the type and quantity of proposed land uses. In addition to these specific projects, the General Plan identifies the potential for 3.4 million square feet of additional commercial, office, and light industrial development in the downtown area, along El Camino Real and the Caltrain corridor, and in the area to the east; and City's Housing Element lists vacant and underutilized residential sites with potential for 1,476 new housing units.

Table 2-2 Planned Development Areas

Area	Planned Development
Wheeler Plaza	139 multi-family units 14,355 sq. ft. retail 4,000 sq. ft. office
700 Chestnut/1501 Cherry Street	34 multi-family units
301 Industrial Road (Palo Alto Medical Foundation)	224,223 sq. ft. medical office 97-bed hospital
144/150 Elm Street	8 multi-family units
500 Walnut Street	4 multi-family units
1580 Laurel Street	4 dwelling units 2,100 sq. ft. commercial
Transit Village	280 multi-family units 14,000 sq. ft. retail 16,000 sq. ft. office
285 Old County Road	26,840 sq. ft. light industrial
665 Prospect Street	7 clustered, detached units
501 Industrial Road	180-room hotel 220,565 sq. ft. office
1001 Laurel Street	90 multi-family units
657 Prospect Street	5 dwelling units
777 Walnut Street	28 dwelling units

In addition to this potential development within the City, the unincorporated area adjacent to the Devonshire County Sanitation District, which is tributary to the City's sewer system, has several single family home parcels that are currently vacant. These sites were assumed to be developed for the future scenario (84 new single family homes assumed).

The following flow factors were used to calculate BWF from future developments. These flow factors are based on an analysis of the City's water consumption data, as well as factors commonly used at the master planning level for similar communities.

- For residential properties:
  - Single family residential (SFR) = 190 gpd/unit
  - Multi-family residential (MFR) = 120 gpd/unit
- Hotels = 150 gpd/room

Table 3-3: Peak I/I by Sewer Basin

Sewer Basin[1]	Contributing Area (ac.)[6]	ADWF (mgd)[7]	Peak RDI/I (mgd)[8]	PWWF (mgd)[9]	Unit Peak RDI/I Rate (gpd/ac)	Wet Weather Peaking Factor[10]
Tierra Linda	97	0.06	0.39	0.49	4,000	8.3
1	232	0.34	3.53	4.05	15,200	11.8
2	23	0.02	0.28	0.31	12,100	13.3
3[2]	418	0.32	1.34	1.89	3,200	6.0
4	289	0.39	1.06	1.64	3,700	4.2
5[3]	232	0.13	3.51	3.62	15,100	28.7
6	109	0.08	0.52	0.66	4,800	8.4
7	246	0.19	0.90	1.24	3,600	6.5
8	106	0.11	1.33	1.51	12,600	13.7
9	79	0.07	0.64	0.77	8,100	11.0
10	190	0.17	1.67	1.95	8,800	11.6
11	159	0.17	0.44	0.73	2,800	4.2
12[4]	234	0.16	1.69	1.96	7,200	12.6
13	186	0.22	0.47	0.75	2,500	3.4
14	73	0.06	1.43	1.53	19,600	25.4
15	118	0.11	0.70	0.90	5,900	8.0
16	296	0.26	1.85	2.20	6,200	8.5
Total[5]	3,195	2.91	22.4	26.9[11]	7,000	9.3

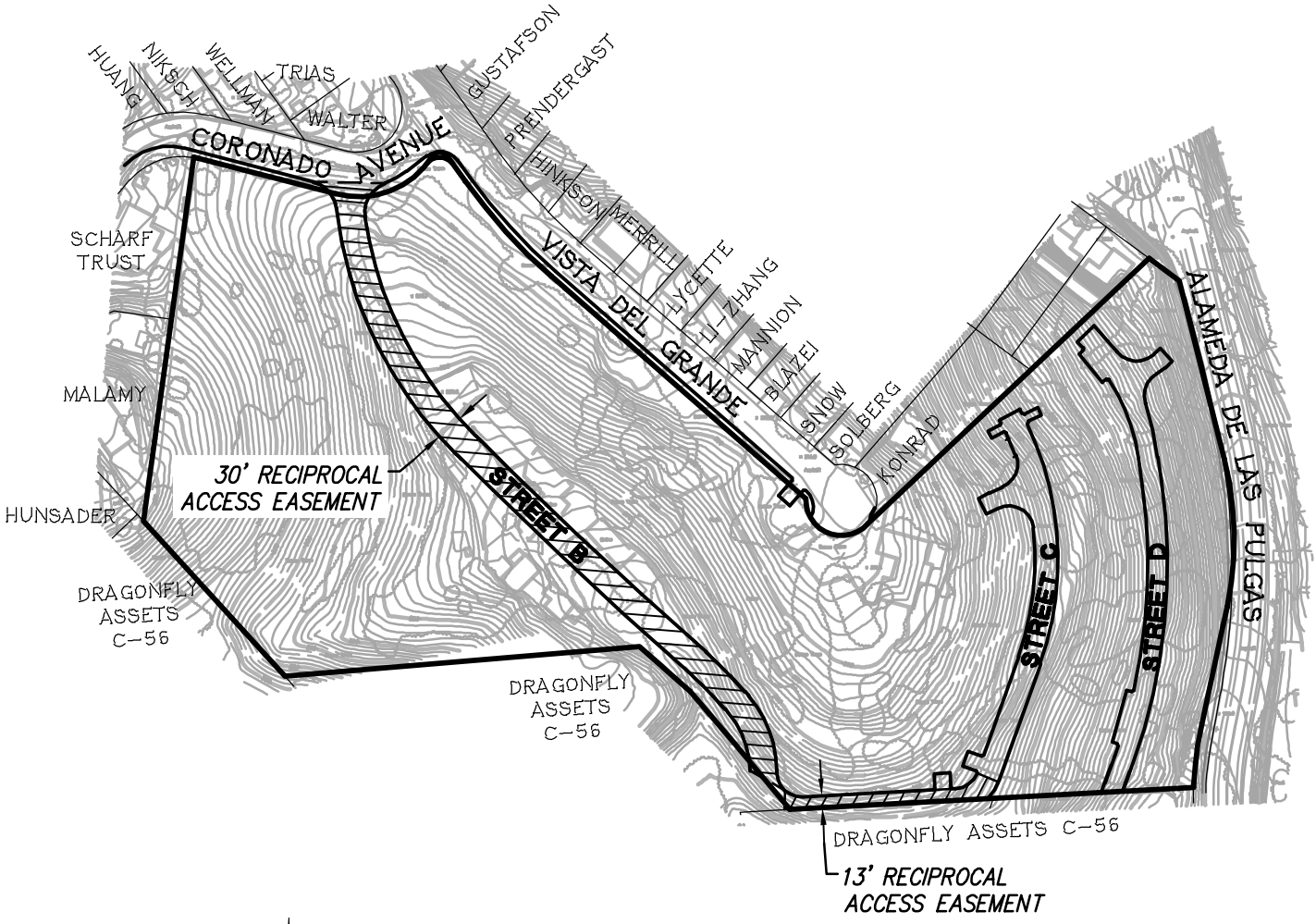
Note: Basin flows based on existing development (not including future growth).
mgd = million gallons per day.

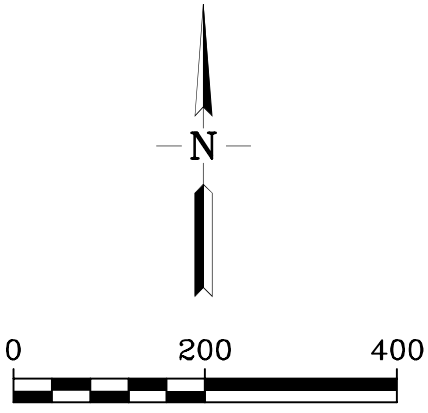
1. For meters with upstream basins, represents the incremental meter basin area, as shown on Figure 2-2.
2. Basin 3 includes the Devonshire County Sanitation District.
3. Basin 5 includes the Harbor Industrial Sewer Maintenance District. Flow data indicated sporadic "spikes", not all of which were associated with rainfall. It is also suspected that there may be a sewer connection from the City of Belmont collection system that is impacting the flows in this basin.
4. Basin 12 includes the Scenic Heights County Sanitation District and a portion of the Emerald Lakes Sewer Maintenance District.
5. Includes small unmetered area (approximately 100 acres).
6. Net area of developed parcels.
7. Average dry weather flow. Includes groundwater infiltration during non-rainfall periods, representing approximately 10 to 15 percent of ADWF.
8. Peak rainfall-dependent I/I flow for Design Storm. Represents sum of peak flows for individual subcatchments within each basin.
9. Peak wet weather flow for Design Storm. Represents sum of peak flows for individual subcatchments within each basin; does not reflect flow routing through the system (which would typically reduce the peak flows).
10. Ratio of PWWF to ADWF for Design Storm.
11. Sum of basin flows; does not reflect flow routing through system. Total estimated PWWF to San Carlos Pump Station without collection system capacity improvements is 23.1 mgd; with capacity improvements, estimated PWWF is 25.4 mgd under existing conditions and 26.6 mgd with future development included.

APPENDIX O

EMERGENCY ACCESS

Appendix O1:
Emergency Access Roadway Alignment





SHEET 1 OF 3

EXHIBIT A-1

RECIPROCAL ACCESS EASEMENT

CITY OF SAN CARLOS, SAN MATEO COUNTY, CALIFORNIA

G:\JOB2017\171041\MAPPING\PLATS\171041-SHARED ACCESS AGREEMENT.DWG 5/2/2022 3:14:46 PM AMANDA ZUCKER

RJA
RUGGERI-JENSEN-AZAR
ENGINEERS ▪ PLANNERS ▪ SURVEYORS
4690 CHABOT DRIVE, SUITE 200 PLEASANTON, CA 94588
PHONE: (925) 227-9100 FAX: (925) 227-9300

SCALE:	DATE:	JOB NO.:
1"=200'	05-02-2022	171041TM

Appendix 02:
Letter from Redwood City - San Carlos Fire Department Re: Fire Access

Fire Department
755 Marshall Street
Redwood City, CA 94063

Office of the Fire Marshal
Telephone (650) 780-7400
FAX (650) 780-7461
http://www.redwoodcity.org

August 18, 2022

Re: Fire Access for 808 Alameda de Las Pulgas

To Whom It May Concern:

Pursuant to California Fire Code (CFC) Section 503.1.2, the fire code official is authorized to require more than one fire access road based on the potential for a single access road to be impaired by congestion, condition of terrain, climatic conditions, or other factors that could limit access. The proposed development at 808 Alameda de las Pulgas includes 87 townhouse units on the 11.4-acre site with primary access from Alameda del las Pulgas. After review of the proposed development and the site characteristics, the Redwood City – San Carlos Fire Department (RC-SCFD) has determined that a secondary roadway for emergency vehicle access and emergency evacuation is required due to the terrain of the project site and the potential for wildland fires. Access from the project through to Coronado Avenue would be created in the future by the proposed Vista Del Grande development; however, given that the timing of the development of the Vista Del Grande project is unknown, it is possible that the proposed project could be constructed prior to the planned connection to Coronado Avenue.
The following factors compound the safety issues if the secondary means of access and egress is not provided prior to any combustible construction on the site:

- The site is largely vegetated and the site is hilly, with on-site slopes having an average grade of 28.5 percent. Due to the vegetated condition and terrain of the project site, the project's vegetation may have the potential to exacerbate wildfire risks.

- Although the project is currently not in a CalFire Very High Fire Severity Zone (FHSZ) or located in a High or Very High Threat to Development Wildland Urban Interface area, the site has a Moderate Threat to Development and has many characteristics where structures and other human developments meet or intermingle with wildland vegetative fuels, including the shrubs, trees and grasses. The site's vegetation directly abuts adjacent existing residential neighborhoods, upslope from the site, which would be at immediate risk in the event of a fire ignited on the project site.

- A Very High FHSZ is in close proximity to the project, with the closest areas of the zone about 900 feet south and 1,200 feet southwest of the project site. Due to the proximity

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of the project site to a Very High FHSZ, future residents on the project site, like all residents in proximity to FHSZs, are subject to risks associated with wildfire hazards, including exposure to pollutant concentrations and the potential for the spread of a wildfire.

- CAL FIRE maps the project site as being within the interface and influence zones. The interface zone is characterized by dense housing adjacent to vegetation that can burn in a wildfire. The influence zone is characterized by vegetation susceptible to wildfire up to 1.5 miles from the interface or intermix zones.

- CAL FIRE is currently updating the FHSZ maps, with the updated maps expected in 2022. It is highly likely that this site will be in a High or Very High FHSZ zone. Construction of the proposed project would be subject to the code requirements in place at the time of permit application; therefore, if updated fire hazard maps show the project within a High or Very High FHSZ, prior to permit issuance, the project would be subject to code requirements for development in FHSZs.

Due to these factors, a second access to Coronado Avenue for emergency vehicles and evacuation of residents is imperative in order for the RC-SCFD to provide basic fire protection to the residents of the project site. If the project is approved, a secondary means of access and egress shall be constructed to the satisfaction of the City Engineer prior to any combustible construction on site.

Sincerely,

Gareth Harris
Fire Marshal
Redwood City – San Carlos Fire Department

Appendix 03:
Letter from West Coast Code Consultants Re: Plan Review

October 10, 2022

Chris Valley, CBO Building Official
Redwood City & San Carlos Fire Department
600 Elm Street
San Carlos, CA 94070
Email: CValley@cityofsancarlos.org

City of San Carlos – SECOND FIRE REVIEW
City Permit Number: PLN2018-00209
WC[3] Job Number: 222-445-078

Re: Plan Review: New Townhouses - AMMR for Exceed Access Road Grade Limits (FLS)
Address: 808 Alameda De Las Pulgas, San Carlos, CA

Dear Mr. Valley:

West Coast Code Consultants, Inc. (WC[3]) has completed the final review of the following documents for the project referenced above on behalf of the City of San Carlos:

1. Request for AMMR Consideration: Dated 8/17/2022, by Ronnie Thomas, PE - Reax Engineering Inc.
2. Form 00.1 - Alternate Materials or Methods: Dated 8/17/2022, by Ronnie Thomas, PE - Reax Engineering Inc.
3. Alternate Means of Construction Request for 808 Alameda De Las Pulgas: Dated 8/17/2022, by James R. (Ronnie) Thomas, PE - Reax Engineering Inc.
4. Exhibit A-1 – Reciprocal Access Easement: Dated 5/2/2022, by Ruggeri-Jensen-Azar.
5. Exhibit A-2 and A-3 - Temporary Emergency Vehicle Access Easement: Dated 5/2/2022, by Ruggeri-Jensen-Azar.
6. Sheet A0.2 - Site Plan – Parking and Fire Access - Revision #3: Dated 1/28/2022, by Lowney Architects.
7. Revised Sheet A3.0 – Type A Elevations - Revision #3: Dated 1/28/2022, by Lowney Architects.
8. Revised Sheet A3.1– Type B Elevations - Revision #3: Dated 1/28/2022, by Lowney Architects.
9. Revised Sheet A3.2 – Type C Elevations - Revision #3: Dated 1/28/2022, by Lowney Architects.
10. Revised Civil Sheets C4.1 and C4.2 - Revision #3: Dated 9/27/2022, by BKF Engineers.

The 2019 California Building and Fire Codes (i.e., 2018 IBC and IFC as amended by the State of California and adopted by the City), as well as adopted NFPA Standards, were used as the basis of our review. **Our comments follow on the attached list.**

Please call if you have any questions or if we can be of further assistance.

Sincerely,

West Coast Code Consultants, Inc. (WC[3])

Fire Plan Review By:

Review By: Scott W. Adams, FPE – Fire Division Manager

Review By: Donald Zhao, PE, MCP, CBO - Regional Manager | SF Peninsula

cc: City of San Carlos Building Division Staff
Gareth Harris, Redwood City & San Carlos Fire Department (Gharris@redwoodcity.org)

Fire Plan Review Comments

OCCUPANCY & BUILDING SUMMARY:

Occupancy Groups:	R-3 / U
Type of Construction:	TBD
Sprinklers:	Yes (Required)
Stories:	3 (Varies)

GENERAL INFORMATION:

A. The 2019 California Building and Fire Codes (i.e., 2018 IBC and IFC as amended by the State of California and adopted by the City), as well as adopted NFPA Standards, were used as the basis of our review.

B. There may be other comments generated by the Building Division and/or other City departments that will also require your attention and response. This attached list of comments, then, is only a portion of the plan review. Contact the City for other items.

RESUBMITTAL INSTRUCTIONS:

A. Submit plans and supporting documents in electronic format as directed by the Planning Division.

B. Include response in writing to each comment by marking the attached comment list or creating a response letter. Indicate which details, specification, or calculation shows the required information. Your complete and clear responses will expedite the re-check and hopefully, approval of this project.

FIRE COMMENTS:

F1. The proposed AMMR indicates the fire access road exceeds the grade limits of 10% that is required by the California Fire Code Appendix D Section 103.2. Address the following:

a) Submit a civil plan showing the fire access roads and the locations of the road(s) that exceed 10% grade.

i) ***Resolved:*** *Sheet A0.2 – Site Plan and Fire Access*

b) Provide a plan showing where the fire apparatus access road is not available to provide access to all portions of the proposed building(s) per CFC 503.1.1.

i) ***Provided:*** *Sheet A0.2 – Site Plan and Fire Access*

ii) ***Outstanding Issue:*** *Show on plans how the fire access (hose pull) around all buildings will not exceed 150 feet.*

c) Provide a section view showing the relationship between the various slopes along the road to ensure the fire engines do not bottom out or effectively navigate the road. The angles of approach and departure for fire department access roads shall be based on the fire department apparatus specifications per CFC 503.2.8.

i) ***Resolved:*** *Revised Sheets C4.1 and C4.2, and Sheets C6.1, and C6.2.*

d) The plans submitted in the previous review show the second fire apparatus access is contingent upon a road being provided on the neighboring property. California Fire Code Section 503.1.2

i) ***Provided:***

(1) *Exhibit A-1 (Reciprocal Access Easement), Exhibit A-2 (Temporary Emergency Vehicle Access Easement), and Exhibit A-3 (Temporary Emergency Vehicle Access Easement).*

(2) *REAX Engineering – Request for AMMR, dated 8/17/22, Analysis, Bullet Point 1 (page 2) indicates providing an additional connection to a through road to Coronado Avenue via neighboring development, and this secondary road will be completed prior to issuance of Certificate of Occupancy for the project.*

ii) ***Outstanding Issues:***

(1) *No documentation has been provided between the parties that shows this agreement*.

(2) *No documentation has been provided that shows this easement has been and/or will be recorded with the City*.

(3) *Connection to Coronado Avenue via neighboring development will not be completed prior to issuance of Certificate of Occupancy*.

e) Show the location of the building(s) that require aerial apparatus access. California Fire Code Appendix D Section 105.1. Be advised, that the fire department ladder trucks are not designed to operate at slopes exceeding 8%.

i) ***Resolved:***

(1) *REAX Engineering – Request for AMMR, dated 8/17/22, Analysis, Bullet Point 4 (page 2) indicates building heights lowered below 30 feet.*

(2) *Revised C4.1 (Average Grade Plane Exhibit), Revised C4.2 (Average Grade Plane Exhibit), Revised Sheet A3.0 (Type A Elevations), Revised Sheet A3.1 (Type B Elevations), and Revised Sheet A3.2 (Type C Elevations).*

f) The AMMR further references San Carlos Municipal Code Section 17.16.090 which limits the street to a grade of 12% unless the City Engineer and Director of Planning determine that grades exceeding 12% are necessary. Provide documentation showing City Engineer and Director of Planning approval and include any conditions that were required. Be advised, that the fire code limits the slope of the road for firefighting and rescue operations.

i) ***Not Resolved:*** REAX Engineering – Request for AMMR, dated 8/17/22, Response and Justification for AMMR (page 1) indicates pending City Engineer and Director of Planning approval. No documentation has been provided between the parties that shows this agreement.

ii) ***Outstanding Issue****: Approval by City Engineer and Director of Planning.*

F2. The proposed justification for the AMMR list the following:

a) Increased construction type from Type V-B to Type II-A or III-A.

i) ***Not Resolved:*** REAX Engineering – Request for AMMR, dated 8/17/22, Analysis, Bullet Point 2 (page 2) indicates increasing the construction type from Type V-B (nonrated combustible construction) to either Type II-A or III-A (1-hour noncombustible construction), to be designated during building permit.

ii) ***Outstanding Issue:*** *Applicant to revise AMMR and indicate that either Type II-A or Type III-A construction is proposed for all structures*.

b) Increased fire sprinklers from NFPA 13D to NFPA 13.

i) ***Outstanding Issue:*** *Applicant to revise AMMR and indicate that the fire sprinkler system with be an NFPA 13 design in all proposed structures.*

c) Use Class A exterior siding.

i) ***Outstanding Issue:*** *Applicant to revise AMMR and indicate that Class A exterior siding is proposed for all structures.*

d) Fire-hardened landscaping.

i) ***Outstanding Issue:*** *Applicant to revise AMMR and indicate that fire-hardened landscaping is proposed for all structures.*

e) Very High Fire Hazard Zone (VHFSZ) or a Wildland Urban Interface (WUI).

i) Applicant has indicated that the property is not currently located in a Very High Fire Hazard Zone (VHFSZ) or a Wildland Urban Interface (WUI), and does not currently require Chapter 7A measures, it is likely to be at the time of permitting.

ii) ***Outstanding Issue:*** *Applicant to revise AMMR and indicate that all proposed structures will be required to comply with Chapter 7A requirements, and indicate that the following will be provided as addressed in the REAX Engineering – Request for AMMR, dated 8/17/22, Analysis, paragraph 2 (page 2):*

(1) *All electric development (no gas lines or appliances will be present in the units).*

(2) *All utilities will be underground.*

(3) *Developed area will have significantly fewer natural fuel sources.*

Amend the AMMR application to show how each of the above mitigation measures demonstrates equivalency to fire department access (e.g., navigating the roads, firefighting operations, rescue operations, etc.) as required by CFC 104.9.

If you have any questions regarding the above comments, please contact Scott W. Adams (scotta@wc-3.com) for fire plan review comments via email or telephone at (650) 754-6353.

When emailing, please cc the following individuals:

- The planner assigned to the project.
- Chris Valley, Chief Building Official, cvalley@cityofsancarlos.org
- Gareth Harris, Fire Marshal, gharris@redwoodcity.org
- Scott Adams, WC-3 project manager, scotta@wc-3.com

[End]