

This chapter of the EIR presents the environmental noise and vibration assessment for the proposed Project. This chapter presents background information on community noise and vibration, applicable regulatory standards, and a description of the existing site conditions. The assessment of noise and vibration impacts identifies potentially significant impacts and measures necessary to avoid or reduce these impacts to less than significant levels.

- Technical analysis for this chapter of the EIR was conducted by noise consultants Illingworth & Rodkin, Inc. (see **Appendix B**)

## Environmental Setting

### Fundamental Concepts of Environmental Acoustics

For the purpose of this analysis, noise may be defined as unwanted sound. Noise is generally considered objectionable when it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A decibel (dB) is a unit of measurement which indicates the relative amplitude of a sound. The zero on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in dBs are calculated on a logarithmic basis. An increase of 10 dBs represents a 10-fold increase in acoustic energy, while 20 dBs is 100 times more intense, 30 dBs is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Generally, a 3 dB increase in sound levels or less is not detected or perceived. Technical terms are defined in **Table 10.1**.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in **Table 10.2**. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be used. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called  $L_{eq}$ . The most common averaging period is hourly, but  $L_{eq}$  can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

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**Table 10.1: Definitions of Acoustical Terms**

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Term	Definitions
Decibel	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hertz (Hz) and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level	The average A-weighted noise level during the measurement period.
$L_{max}$ , $L_{min}$	The maximum and minimum A-weighted noise level during the measurement period.
Day/Night Noise Level	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 dBs to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m. to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.

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Source: *Handbook of Acoustical Measurements and Noise Control*, Harris, 1998.

<b>Common Outdoor Activities</b>	<b>Noise Level (dBA)</b>	<b>Common Indoor Activities</b>
	<b>110 dBA</b>	Rock band
Jet fly-over at 1,000 feet		
	<b>100 dBA</b>	
Gas lawn mower at 3 feet		
	<b>90 dBA</b>	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	<b>80 dBA</b>	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet		Vacuum cleaner at 10 feet
Commercial area	<b>70 dBA</b>	Normal speech at 3 feet
Heavy traffic at 300 feet		
	<b>60 dBA</b>	
Quiet urban daytime		Large business office
	<b>50 dBA</b>	Dishwasher in next room
Quiet urban nighttime		
Quiet suburban nighttime	<b>40 dBA</b>	Theater, large conference room
	<b>30 dBA</b>	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	<b>20 dBA</b>	
		Broadcast/recording studio
	<b>10 dBA</b>	
	<b>0 dBA</b>	

Source: *Technical Noise Supplement, California Department of Transportation, September 2013.*

Since the sensitivity to noise increases during the evening and at night—because excessive noise interferes with the ability to sleep—24-hour descriptors have been developed that incorporate artificial noise "penalties" (or adjustments) added to quiet-time noise events. The Community Noise Equivalent Level (CNEL) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. – 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. – 7:00 a.m.) noise levels. In effect, a 55 dBA level of noise occurring at 3:00 a.m. is deemed to have the same level of 'community' impact as a 65 dBA level occurring at 3:00 p.m. The day/night average sound level ( $L_{dn}$ ) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

### **Fundamental Concepts of Ground-borne Vibration**

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of

the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. **Table 10.3** displays the reactions of people and the effects on buildings that continuous vibration levels produce.

**Table 10.3: Reactions of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels**

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Virtually no risk of damage to normal buildings
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential dwellings such as plastered walls or ceilings
0.5	Severe – Vibrations considered unpleasant	Threshold at which there is a risk of damage to newer residential structures

Source: *Transportation and Construction Vibration Guidance Manual, California Department of Transportation, September 2013*. Note: PPV - Peak Particle Velocity.

The annoyance levels shown in **Table 10.3** should be interpreted with care since vibration may be found to be annoying at much lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related ground-borne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess ground-borne vibration and almost exclusively to assess the potential of vibration to induce structural damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Studies have shown that the threshold of perception for average persons is in the range of 0.008 to 0.012 in/sec PPV. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as minor cracking of building elements, or may threaten the integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher and there is no general consensus as to what amount of vibration may pose a threat for structural damage to the building. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

## Local Physical Setting

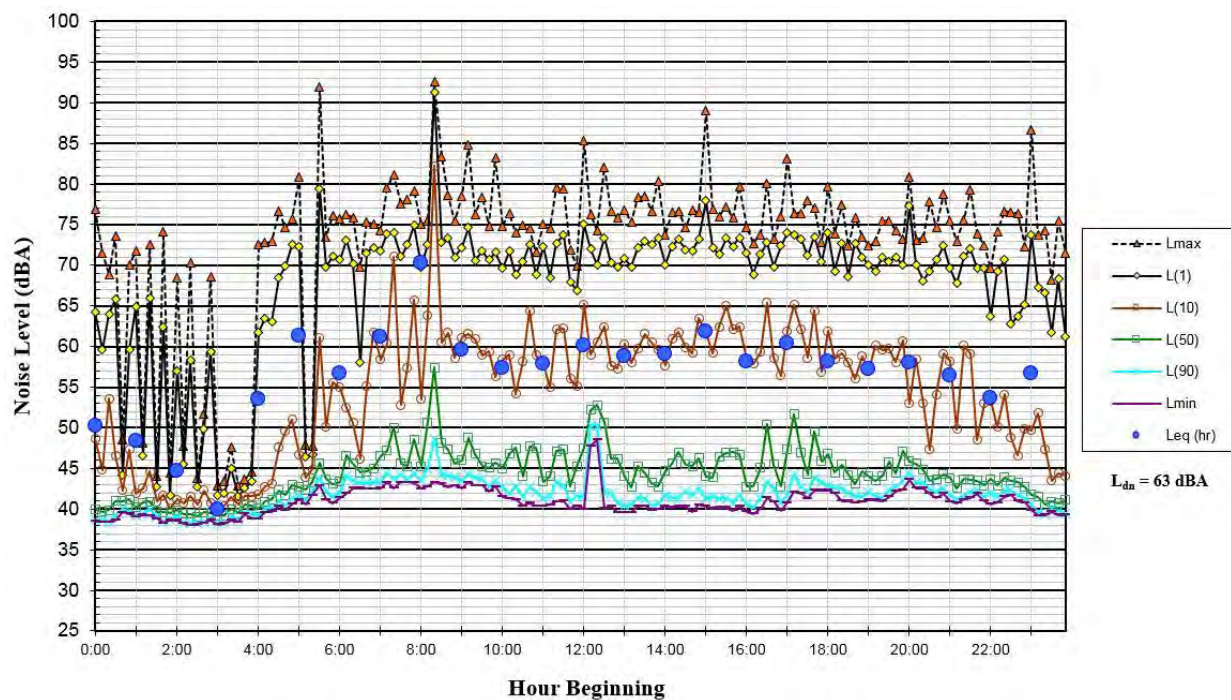
### Existing Site

The Project site is located in the unincorporated Fairview area of Alameda County. Residential land uses bound the two Project sites on all sides, though at varying density. The Hilltop Care Convalescent and Medical Home is located between the two Project parcels. Vacant lots approved for residential uses are located directly to the south. The residential uses and the Care Facility are considered sensitive receptors for the purpose of this chapter of the EIR. The existing noise environment in the Project vicinity results primarily from local traffic along D Street and the other surrounding neighborhood roadways. Intermittent noise from aircraft overhead also contributes to the noise environment.

A noise monitoring survey was conducted to document existing noise conditions at the Project site between Thursday, February 4, 2016 and Tuesday, February 9, 2016. Long-term noise measurement LT-1 was positioned on a utility pole near 3231 D Street, along the northern boundary of the western parcel. LT-1 was approximately 20 feet from the centerline of D Street and about 10 feet above the ground.<sup>1</sup> Noise levels measured at this site were primarily the result of traffic on D Street. Hourly average noise levels typically ranged from 54 to 70 dBA  $L_{eq}$  during the day and 40 to 65 dBA  $L_{eq}$  at night. The calculated  $L_{dn}$  at this location ranged from 60 to 64 dBA  $L_{dn}$ . **Table 10.4** shows a representative example of the daily trend in noise levels at LT-1. Generally, the spikes shown in the graph of noise levels under the  $L_{max}$  condition represent aircraft fly-overs.

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<sup>1</sup> Illingworth & Rodkin 2016.

**Table 10.4: Noise Levels Recorded at LT-I on Friday, February 5, 2016 (D Street)**

## Regulatory Setting

### County of Alameda General Plan Noise Element

The County of Alameda Countywide General Plan Noise Element contains goals, objectives, and implementation programs for the entire county to provide residents with an environment free from excessive noise. It promotes compatibility of land uses with respect to noise. The Countywide Noise Element does not explicitly state what the acceptable noise levels are for residential outdoor use areas or indoor use areas; however, the Noise Element recognizes the EPA noise level standards, which indicate that exterior noise is limited to 55 dBA  $L_{dn}$  for residential land uses, and interior noise is limited to 45 dBA  $L_{dn}$ . The Noise Element also recognizes noise and land use compatibility standards developed by an ABAG sponsored study, the *Regional Airport Systems Study*. The adopted noise standards from this study are shown in **Table 10.5**. Acceptable exterior noise levels would be at or below 65 dBA CNEL. Moderate impacts would occur with exterior noise levels between 65 and 70 dBA CNEL, and noise levels exceeding 70 dBA CNEL would cause a significant impact.

**Table 10.5: Simplified Land Use Interpretations of Community Equivalent Level Noise Exposure, Approximate CNEL Value (dBA)**

	55	60	65	70	75	80	85
Residential / Education	Little Impact		Mod. Impact		Significant Impact		
Commercial	Little Impact			Mod. Impact		Significant Impact	
Industrial	Little Impact				Mod. Impact		Significant Impact
Agriculture / Open Space	Little Impact				Mod. Impact		

Little Impact    
 Mod. Impact    
 Significant Impact

Source: Adopted from Regional Airport Systems Study, Final Plan, June 1972, by Alameda County Planning Department, July 1975.

### County of Alameda General Code

The County of Alameda General Code Chapter 6.60 establishes the Countywide Noise Ordinance. This chapter contains policies to control unnecessary, excessive, and annoying noise in the County. The following sections are applicable to the proposed Project:

**Chapter 6.60.040: Exterior noise level standards.** (A) It is unlawful for any person at any location within the unincorporated area of the County to create any noise or to allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person which causes the exterior noise level when measured at any single- or multiple-family residential, school, hospital, church, or public library situated in either the incorporated or unincorporated area to exceed the noise level standards as set forth in **Table 10.6** (Table 6.60.040A of the General Code). (B) In the event the measured ambient noise level exceeds the applicable noise level standard in any category above, the applicable standard shall be adjusted so as to equal said ambient noise level. (C) Each of the noise level standards specified in Table 6.60.040A shall be reduced by 5 dBA for simple tone noises, noises consisting primarily of speech or music or for recurring impulsive noises.

**Table 10.6: Receiving Land Use – Single- or Multiple-Family Residential, School, Hospital, Church, or Public Library properties: Noise Level Standards, dBA**

Cumulative Number of Minutes in any one-hour time period	Daytime	Nighttime
	(7:00 a.m. to 10:00 p.m.)	(10:00 p.m. to 7:00 a.m.)
30 minutes	50 dBA	45 dBA
15 minutes	55 dBA	50 dBA
5 minutes	60 dBA	55 dBA
1 minutes	65 dBA	60 dBA
0 minutes	70 dBA	65 dBA

**Chapter 6.60.050: Prohibited noise disturbances.** (B) Notwithstanding any of the provisions of this chapter, the following acts are prohibited within the unincorporated area of the county of Alameda, subject only to the exceptions of Section 6.60.070:

- 1) **Radio, Television Sets, Musical Instruments and Similar Devices.** Operating, playing or permitting the operation or playing of any radio, stereo, television set, audio equipment, electronic equipment, drum, musical instrument, or device which produces or reproduces sound at any time of day plainly audible at a distance of fifty (50) feet from such device. This section does not apply to places of public entertainment or to events for which a lawful permit has been obtained, provided that the activities producing sound are being conducted in compliance with the permit. This section does not apply to the operation of sound amplification systems in vehicles to the extent those systems are subject to California Vehicle Code Section 27007.
- 7) **Loading and Unloading.** Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 9:00 p.m. and 6:00 a.m. in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of Section 6.60.040.
- 8) **Vibration.** Operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property or at 150 feet (46 meters) from the source if on a public space or public right-of-way.

**Chapter 6.60.070: Special provisions or exceptions.** (E) **Construction.** The provisions of this chapter shall not apply to noise sources associated with construction, provided said activities do not take place before 7:00 a.m. or after 7:00 p.m. on any day except Saturday or Sunday, or before 8:00 a.m. or after 5:00 p.m. on Saturday or Sunday.

## Impacts and Mitigation Measures

The following section describes potentially significant Project impacts related to noise exposure. Mitigation recommendations are made to avoid, minimize, or mitigate such impacts where feasible.

### Significance Criteria

The Project would have a significant environmental impact if it were to result in:

1. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
3. A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project.
4. A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project.

Significant impacts could also result if the Project were located within an airport land use plan area (or within two miles of a public airport or public use airport if the County had no land use plan such airport for such an airport), and if the Project would as a result expose people residing or working on the Project site to excessive noise levels. Lastly, if the Project was within the close vicinity of a private airstrip, and



would as a result expose people residing or working in the Project area to excessive noise levels, a significant impact could occur. Although the Project site is not in an airport land use area, or near any other public use airport or private airstrip, a discussion of potential aircraft effects is included below.

### Construction-Period Noise

**Noise-1: Construction Noise.** Construction activities associated with the Project would not expose persons to, or generate noise levels in excess of standards established in the County General Plan or County General Code, but would substantially increase temporary and periodic ambient noise levels in the Project vicinity above levels existing without the Project. **(Less than Significant with Mitigation)**

Construction noise associated with the Project would temporarily elevate existing ambient noise levels. One of the thresholds used to determine whether a significant noise impact would occur is, if the Project would generate noise levels that would exceed local criteria established in the General Plan or General Code. According to Chapter 6.60.070 of the County's General Code, established noise standards do not apply to temporary noise sources associated with construction, provided that all construction activities occur between 7:00 a.m. and 7:00 p.m. on weekdays and between 8:00 a.m. and 5:00 p.m. on weekends.

The second applicable threshold is whether the Project would substantially increase temporary and/or periodic ambient noise levels in the Project vicinity above levels existing without the Project. Construction activities are considered to be temporarily or periodically significant if they would increase ambient noise levels by sensitive receptors (typically existing building walls, not at property lines) by an hourly average noise level exceeding 60 dBA  $L_{eq}$ , and/or increase the ambient noise levels by a least 5 dBA  $L_{eq}$  for a period of more than 1 year. A detailed construction equipment list and expected constructed timeframe was not provided, but construction activities are expected to include demolition, site preparation (clearing trees and vegetation), excavation and grading work, building construction, paving, and architectural coating, each of which will result in increased noise levels in the surrounding area. The construction period for all of these activities combined could take up to 24 months to complete. Therefore, construction noise is considered to be potentially significant.

#### *Estimated Construction Noise Levels*

Construction noise levels will vary on a day-to-day basis, depending on the type and amount of equipment operating on site and the specific task that is being completed on a particular day. Certain construction activities generate considerable amounts of noise, especially during earth-moving activities when heavy equipment is used. The highest maximum noise levels generated by Project construction would typically range from about 80 to 91 dBA  $L_{max}$  at a distance of 50 feet from the noise source. For the proposed Project, pile driving, which generates high noise levels, would not be expected.

Typical range of hourly average noise levels generated by different phases of construction for new residential development, measured at a distance of 50 feet, are indicated below.<sup>2</sup>

- During busy early phases of construction, typical hourly average construction-generated noise levels range from about 81 to 88 dBA  $L_{eq}$  measured at a distance of 50 feet (e.g., ground clearing activity averages 83 dBA  $L_{eq}$  at 50 feet, excavation activity ranges from 88 to 75 dBA  $L_{eq}$  at 50 feet, and foundation construction and pouring averages approximately 81 dBA  $L_{eq}$  at 50 feet).

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<sup>2</sup> Source: U.S. Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

- Hourly average construction noise levels associated with the erection of the residential buildings, such as hammer and drilling related noise, typically range from approximately 65 to 71 dBA Leq at a distance of 50 feet, but can reach as high as 81 dBA Leq for large projects with multiple pieces of equipment. The noise levels associated with construction of the residential units is typically substantially less than noise levels associated with grading and pavement activities during Project site preparation.
- Once construction moves indoors, minimal noise (typically in the range of 72 dBA at 50 feet) would be generated at off-site locations.

Construction-generated noise levels drop off at a rate of about 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

Adjacent land uses are located within 10 feet of the shared property lines of the Project site. From the center of the Project site, the adjacent Care Facility would be approximately 170 feet from Tract No. 8297 and approximately 160 feet from Tract No. 8296. At these distances, typical hourly average noise levels would range from 70 to 78 dBA Leq, with maximum instantaneous noise levels ranging from 69 to 81 dBA Lmax. The existing adjacent residences to the east and west of the Project site are approximately 160 to 210 feet from the center of the Project site. At these distances, typical hourly average noise levels would range from 69 to 78 dBA Leq, with maximum instantaneous noise levels ranging from 68 to 81 dBA Lmax. Noise generated by construction activities would temporarily elevate noise levels at adjacent noise-sensitive receptors to levels exceeding ambient levels by more than 5 dBA.

#### Mitigation Measures

Regulation of the hours of construction, as well as regulation of the arrival and operation of heavy equipment and the delivery of construction material, is necessary to address this temporary construction noise threshold and to protect the health and safety of persons, promote the general welfare of the community, and maintain quality of life.

**Mitigation Measure Noise-1: Best Management Practices to Reduce Construction Noise Levels.** The following mitigation shall be implemented to reduce construction noise emanating from the Project site to the surrounding sensitive land uses:

- Comply with construction hours established within the Noise Ordinance to limit hours of exposure. The County's General Code limits construction activities to the hours of 7:00 a.m. to 7:00 p.m. on weekdays and between the hours of 8:00 a.m. and 5:00 p.m. on weekends.
- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Unnecessary idling of internal combustion engines should be strictly prohibited.
- Locate stationary noise-generating equipment, such as air compressors or portable power generators, as far as possible from sensitive receptors. Construct temporary noise barriers or partial enclosures to acoustically shield such equipment where feasible.
- Construct solid plywood fences around construction sites adjacent to operational business, residences or other noise-sensitive land uses where the noise control plan analysis determines that a barrier would be effective at reducing noise.

- Erect temporary noise control blanket barriers, if necessary, along building façades facing construction sites. Noise control blanket barriers can be rented and quickly erected.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the Project site.
- Route construction-related traffic along major roadways and away from sensitive receptors where feasible.
- The contractor shall prepare a detailed construction plan identifying the schedule for major noise-generating construction activities. The construction plan shall identify a procedure for coordination with adjacent residential land uses so that construction activities can be scheduled to minimize noise disturbance.
- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler) and will require that reasonable measures be implemented to correct the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include in it the notice sent to neighbors regarding the construction schedule.

#### Resulting Level of Significance

With implementation of Mitigation Measure Noise-1, construction-period noise levels would be reduced to a less-than-significant level through implementation of noise-reducing best management practices during construction activities.

### **Construction Vibration**

**Noise-2: Construction Vibration.** The proposed Project could expose sensitive residential receptors to excessive groundborne vibration or groundborne noise levels during construction. **(Less than Significant with Mitigation)**

During construction of the Project, there is a potential to expose persons to excessive vibration levels. Ground-borne vibration levels exceeding 0.3 in/sec PPV would have the potential to result in cosmetic damage to normal buildings and would be considered excessive. Construction activities associated with the Project may generate perceptible vibration when heavy equipment or impact tools (e.g. jackhammers, hoe rams) are used. Construction activities generating such vibrations may include site preparation work, major excavation and grading work, foundation work, and new building framing and finishing. The proposed Project is not expected to require pile driving, which can cause excessive vibration, but does anticipate the need for cast-in-place concrete piers relying on drilling. The proposed construction activities would result in potentially significant vibration impacts.

According to the County's General Code, the operation of any device that creates a vibration which exceeds the vibration perception threshold of an individual at or beyond the property boundary of the source would be prohibited on any private property. For structural damage, the California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings that are structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.08

in/sec PPV for very old (“ancient”) buildings or buildings that are documented to be structurally weakened. No ancient buildings or buildings that are documented to be structurally weakened adjoin the Project site. Vibration levels of greater than 0.1 in/sec PPV would be perceptible according to **Table 10.3**, and perceptibility would increase to strong or severe at greater than 0.3 in/sec PPV. Ground-borne vibration levels exceeding 0.3 in/sec PPV are considered to be a significant vibration impact at the Project site.

**Table 10.7** presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet. Project construction activities such as excavators, drilling, the use of jackhammers, rock drills and other high-power or vibratory tools, and rolling stock equipment (tracked vehicles, compactors, etc.), will generate vibration in the immediate vicinity. Jackhammers typically generate vibration levels of 0.035 in/sec PPV, and drilling typically generates vibration levels of 0.09 in/sec PPV at a distance of 25 feet.

**Table 10.7: Vibration Source Levels for Construction Equipment**

Equipment		PPV at 25 feet, in/sec	Approximate L <sub>v</sub> at 25 feet, VdB
Pile Driver (Impact)	upper range	1.158	112
	typical	0.644	104
Pile Driver (Sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large Bulldozer		0.089	87
Caisson Drilling		0.089	87
Loaded Trucks		0.076	86
Jackhammer		0.035	79
Small Bulldozer		0.003	58

Source: *Transit Noise and Vibration Impact Assessment, U.S. Department of Transportation, Office of Planning and Environment, Federal Transit Administration, May 2006.*

Vibration levels would vary depending on soil conditions, construction methods, and equipment used. Specific vibration effects and calculated PPV levels for adjacent land uses would include the following:

- The Hilltop Convalescent and Medical Care Facility, located on the wedge-shaped property between proposed Tract 8297 and 8296 is within 10 feet of the shared property lines of both development parcels. Assuming a credible worst-case scenario which would consist of the operation of vibratory tools at the shared property line, the care facility structure would be exposed to vibration levels up to 0.55 in/sec PPV as a result of clam shovel drops, and up to 0.58

in/sec PPV with the operation of a vibratory roller. The operation of other vibratory tools at a distance of 10 feet would result in vibration levels at or below 0.24 in/sec PPV.

- The nearest residential land uses to the north of Tract 8297 are located along the south side of D Street, and would also be within 10 feet of the shared property line of the Project site. Vibration levels could be up to 0.58 in/sec PPV at these residences as well.
- To the east of Tract 8297, the nearest residences are located 15 to 130 feet from the shared property line. Vibration levels at these residences would be up to 0.37 in/sec PPV.
- There is also a residence located approximately 40 feet to the southeast of the Tract 8297 site, and at this distance, vibration levels would be at or below 0.13 in/sec PPV.
- The single-family residences located adjacent to the western boundary of Tract 8296 would be approximately 10 to 20 feet from the shared property line. At these distances, vibration levels would be at or below 0.58 in/sec PPV.
- Opposite D Street, the nearest residences are located approximately 60 to 70 feet from the boundary of the Project site. At these distances, vibration levels would be expected to be at or below 0.08 in/sec PPV.

Since vibration levels expected at many of the adjacent land uses would exceed 0.3 in/sec PPV at many of the adjacent properties, this is considered a significant impact.

#### Mitigation Measures

**Mitigation Measure Noise-2: Best Management Practices to Assure Acceptable Vibration Levels.** The following mitigation shall be implemented by Project construction crews to avoid structural damage due to construction vibration and to reduce the perceptibility of vibration levels at nearby sensitive land uses:

- Minimize or avoid using clam shovel drops, vibratory rollers, and tampers near the shared property lines of the adjacent land uses.
- When vibration-sensitive structures are within 25 feet of the site, survey condition of existing structures and, when necessary, perform site-specific vibration measurements to direct construction activities. Contractors shall continue to monitor effects of construction activities on surveyed sensitive structures and offer repair or compensation for damage.
- Construction management plans shall include predefined vibration reduction measures, notification of scheduled construction activities requirements for properties adjoining the site, and contact information for on-site coordination and complaints.

#### Resulting Level of Significance

Implementation of Mitigation Measure Noise 10-2 would reduce the Project's potential impact related to construction vibration to a less than-significant level by minimizing the use of vibrating types of equipment and performing vibration measurements to direct construction activities when working close to existing structures.

## Vehicle Traffic Noise

**Noise-3: Vehicular Traffic Noise Increase.** Traffic generated by the Project would not result in a substantial temporary, periodic or permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project. **(Less than Significant)**

### *Existing plus Project*

A significant traffic noise impact would occur if traffic generated by the Project would substantially increase noise levels at existing sensitive receptors. A substantial increase would occur if the L<sub>dn</sub> at noise sensitive receptors were to increase by 5 dBA L<sub>dn</sub> or greater where the existing-plus-Project ambient noise level would be less than 60 dBA L<sub>dn</sub>, or if the noise level increased by 3 dBA L<sub>dn</sub> or greater where the existing-plus-Project ambient noise level would be 60 dBA L<sub>dn</sub> or greater.

Traffic data provided for the Project were reviewed by the EIR noise consultant to calculate potential Project-related traffic noise level increases along roadways serving the Project site. These data included peak-hour turning movement volumes at study intersections for existing conditions and existing plus Project conditions. Roadway link volumes under existing plus Project conditions were calculated based on the turning movement data, and compared to existing conditions in order to calculate the noise level increase anticipated with the development of the Project. Based on this comparison, traffic noise levels along roadways serving the Project site are calculated to increase by less than 1 dBA L<sub>dn</sub> as a result of the Project on all studied roadways.

### *Cumulative*

A significant cumulative noise impact would occur if the cumulative traffic noise level increase is 3 dBA L<sub>dn</sub> or greater where future noise levels are projected to exceed 60 dBA L<sub>dn</sub>, or is 5 dBA L<sub>dn</sub> or greater where future noise levels are projected to be below 60 dBA L<sub>dn</sub>; and if the Project would make a “cumulatively considerable” contribution to this overall cumulative noise. A cumulatively considerable contribution is defined as an increase of 1 dBA L<sub>dn</sub> or more attributable solely to the proposed Project.

Cumulative traffic noise level increases were calculated by comparing the future traffic volumes and the Cumulative plus Project volumes to existing traffic volumes. The traffic noise increases calculated under both future scenarios were approximately 1 dBA L<sub>dn</sub> in the Project site vicinity. Since the traffic noise level increase under both future scenarios is less than 3 dBA L<sub>dn</sub>, no cumulative traffic noise impacts are identified. Furthermore, the Project would not make a cumulatively considerable contribution (i.e., more than 1 dBA L<sub>dn</sub> or more attributable solely to the proposed Project).

### Mitigation Measures

None needed.

## Aircraft-Related Noise

Hayward Executive Airport is a city-owned public airport located approximately 3.8 miles southwest of the Project site. Oakland International Airport is a public airport located approximately 9 miles northwest of the Project site. The Project site does not fall within the airport influence areas of either airport, although the area is generally beneath a common flight path for freight and passenger aircraft approaching Oakland International Airport.

The Project would not generate any discernable increase in air traffic, and no change in noise from aircraft would occur that would substantially increase ambient noise levels at the Project site. Interior noise levels resulting from aircraft would be compatible with the proposed Project uses. **(No Impact)**

## Noise and Land Use Compatibility

The effect of the environment on a project (as opposed to the effect of the project on the environment) is not normally considered an environmental impact under CEQA, based on a state Supreme Court ruling in 2015. Therefore, consideration of the noise environment potentially affecting future Project residents is not considered a significant impact in this EIR, but is nevertheless presented herein for informational purposes.

The County of Alameda General Plan Noise Element contains goals, objectives, and implementation programs for the entire County to provide residents with an environment free from excessive noise. It promotes compatibility of land uses with respect to noise. According to the General Plan, the following would be identified as an acceptable noise environment for the proposed Project:

- When exterior noise levels are at or below 65 dBA L<sub>dn</sub>, the County considers there to be “little impact” at single-family residential land uses.
- The County recognizes that interior noise levels must be maintained at or below 45 dBA L<sub>dn</sub>.

### *Exterior Noise Environment*

The noise environment at the Project site is a result primarily from vehicular traffic along D Street and occasional aircraft flyovers. Transportation-related noise levels at the Project site were calculated based on adjustments made to existing noise level data, assuming increased traffic volumes along area roadways. Based on the traffic information provided at the time of this study, the plus-Project traffic conditions would result in a traffic noise increase from existing conditions of approximately 1 dBA L<sub>dn</sub>. Therefore, noise levels at LT-1, which was set back from the centerline of D Street by 20 feet, would range from 61 to 65 dBA L<sub>dn</sub> under plus-Project traffic conditions.

While no common outdoor use areas are included in the Project, each of the residences would have private backyards. On the eastern section of the Project (Tract 8297), the nearest residences would be set back from the centerline of D Street by at least 180 feet. These residences would also receive partial shielding from existing single-family residences located along D Street. The exterior noise levels at the residences on Tract 8297 would be at or below 55 dBA L<sub>dn</sub>.

Two proposed residences on the western parcel of the Project (Tract 8296) would have setbacks of approximately 20 feet from the centerline of D Street, and with direct exposure to the noise. The residences adjacent to and nearest D Street, with setbacks of more than 20 feet from the centerline, would have exterior noise levels ranging from 61 to 65 dBA L<sub>dn</sub>, which meets the allowable exterior noise standard for single-family residences. The backyards located further south of D Street would have exterior noise levels below 65 dBA L<sub>dn</sub>. Therefore, the exterior noise environment at the Project site meets the County's standards. This noise level is considered compatible with the proposed land use.

### *Interior Noise Environment*

Interior noise levels within the residential units are required by the County to be maintained at or below 45 dBA L<sub>dn</sub>. The exterior façades of the proposed residences located within 70 feet of the centerline of D Street would be exposed to exterior noise levels greater than 60 dBA L<sub>dn</sub>, with the highest noise exposures occurring at unshielded residential façades nearest D Street. Noise levels at these unshielded façades are calculated to reach 65 dBA L<sub>dn</sub>.

Interior noise levels will vary depending on the design of the building (primarily window area relative to wall area) and construction materials and methods. Standard construction provides approximately 15 dBA of exterior to interior noise reduction, assuming the windows are partially open for ventilation. Standard construction with the windows closed provides approximately 20 to 25 dBA of noise reduction

to interior spaces. In exterior noise environments ranging from 60 to 65 dBA  $L_{dn}$ , interior noise levels can typically be maintained below County standards with the incorporation of an adequate forced air mechanical ventilation system allowing the windows to be closed.

Residences located adjacent to D Street on Tract No. 8296 will require some form of forced-air mechanical ventilation to achieve this interior noise goal. The remaining residences on the site would achieve interior noise levels of 45 dBA  $L_{dn}$  assuming standard California construction methods only.

*Measures to Consider to Ensure General Plan Consistency*

The following measure should be included in the Project's design to maintain interior noise levels at or below 45 dBA  $L_{dn}$ , consistent with General Plan policies:

- Residential units located adjacent to D Street on Tract No. 8296 should be provided with forced-air mechanical ventilation, so that windows can be kept closed at the occupant's discretion to control noise.

As noted above, the effect of the existing noise environment on the Project would not be considered a significant environmental impact under CEQA. The above measure is not required under CEQA, but is recommended to be incorporated into the Project and/or its conditions of approval to ensure that interior noise levels at the proposed residences can be kept to 45 dBA  $L_{dn}$  or less, consistent with policies of the General Plan.



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# Transportation and Circulation

This chapter of the Draft EIR analyzes the potential impacts of the Project related to transportation and circulation. Transportation related issues of concern that are addressed include local motor vehicle traffic on roadways, bicycle and pedestrian circulation, and transit. Transportation impacts are assessed for the Project during weekday A.M. and P.M. peak-hour commute periods.

- Technical traffic and circulation analysis for this chapter of the EIR was conducted by TJKM, Inc., October 2016

## Setting

### Roadway Network

The majority of the unincorporated Fairview area is characterized by a mixture of many small older subdivisions, interspersed with new subdivisions, remaining large lots ranging from one to ten acres in active or passive agricultural use, and a few large institutional properties (churches, schools, various parks and open spaces, and the Lone Tree Cemetery). The easternmost area is dominated by the large Five Canyons subdivision, built in the 1980s. The roadway network in the area is dominated by a few east-west aligned major collector roads and relatively few north-south roads, all of which connect the predominately residential subdivisions in the area.

The primary roadways that provide access to the Project site and a large proportion of the Fairview area overall include D Street, Maud Avenue and Fairview Avenue. The posted speed limit on these roads is 30 mph.

#### D Street

D Street is an east-west arterial street that extends eastward from Winton Avenue through Hayward, where it passes close to the Hayward BART Station and intersects with both Mission and Foothill Boulevards, and into the unincorporated Fairview area to the east. West of Fairview Avenue and through all of the unincorporated Fairview area, D Street is a two-lane, two-way street also with a center double-yellow line with centerline reflectors. D Street extends east of its intersection with Fairview Avenue for about a quarter mile to serve adjacent properties including the Project site, but has no through connections except to other cul-de-sacs and Old Quarry Road, and an emergency gate between Thurston Court and Lori Way. Lori Way and other streets north of Thurston Court connect to the easternmost segment of Kelly Street.

#### Fairview Avenue

Fairview Avenue is a major collector street that extends south from D Street until it terminates at Hayward Boulevard inside the eastern Hayward hills, adjacent to the Stonebrae development in the Hayward city limits. Fairview Avenue is a two-lane, two-way roadway striped to prohibit passing in both

directions (i.e., double-yellow lines). Fairview Avenue is also highly unique among the vast majority of roads anywhere in the County in having three ‘roundabouts’ at its intersections with Hansen Road (also serving Vista Lane, a cul-de-sac), Five Canyons Parkway (which also serves Star Ridge Road), and at Hayward Boulevard (serving the Stonebrae development).

#### Maud Avenue

Maud Avenue is a two-lane, two-way collector street that extends from D Street north to Kelly Street about 200 feet west of the D Street/Fairview Avenue intersection. It provides a key route between D Street and Kelly Street, which in turn connects to Center Street and the Interstate 580 (I-580) freeway. The intersection of Maud and Kelly is signalized and is the nearest such intersection to the Project site.

#### Kelly Street

Kelly Street is a two-lane collector street extending roughly one mile from its three-way intersection with B/Center Streets, eastward towards its terminus bordering the Five Canyons Open Space Area, parallel and north of D Street. Its Maud Avenue intersection is roughly 1/2 mile from Center/B Street.

#### Center Street

Center Street is a two-lane collector street for a modest distance (about a sixth of a mile) north of its intersection with B and Kelly Streets, and for its principle length north of East Castro Valley Boulevard, within Castro Valley. However, it widens to up to five lanes for a variety of left and right turn lanes at its intersections with East Castro Valley Boulevard and Grove Way, and provides two left-turn pockets for the southbound approach to the B and Kelly Street intersection. It provides mostly indirect access to and from both east- and west-bound I-580.

#### Hansen Road

Hansen Road is a two-lane collector street that connects between Fairview Avenue to East Avenue just west of the Lone Tree Cemetery, about a tenth of a mile east of D Street.

#### Carlson Court

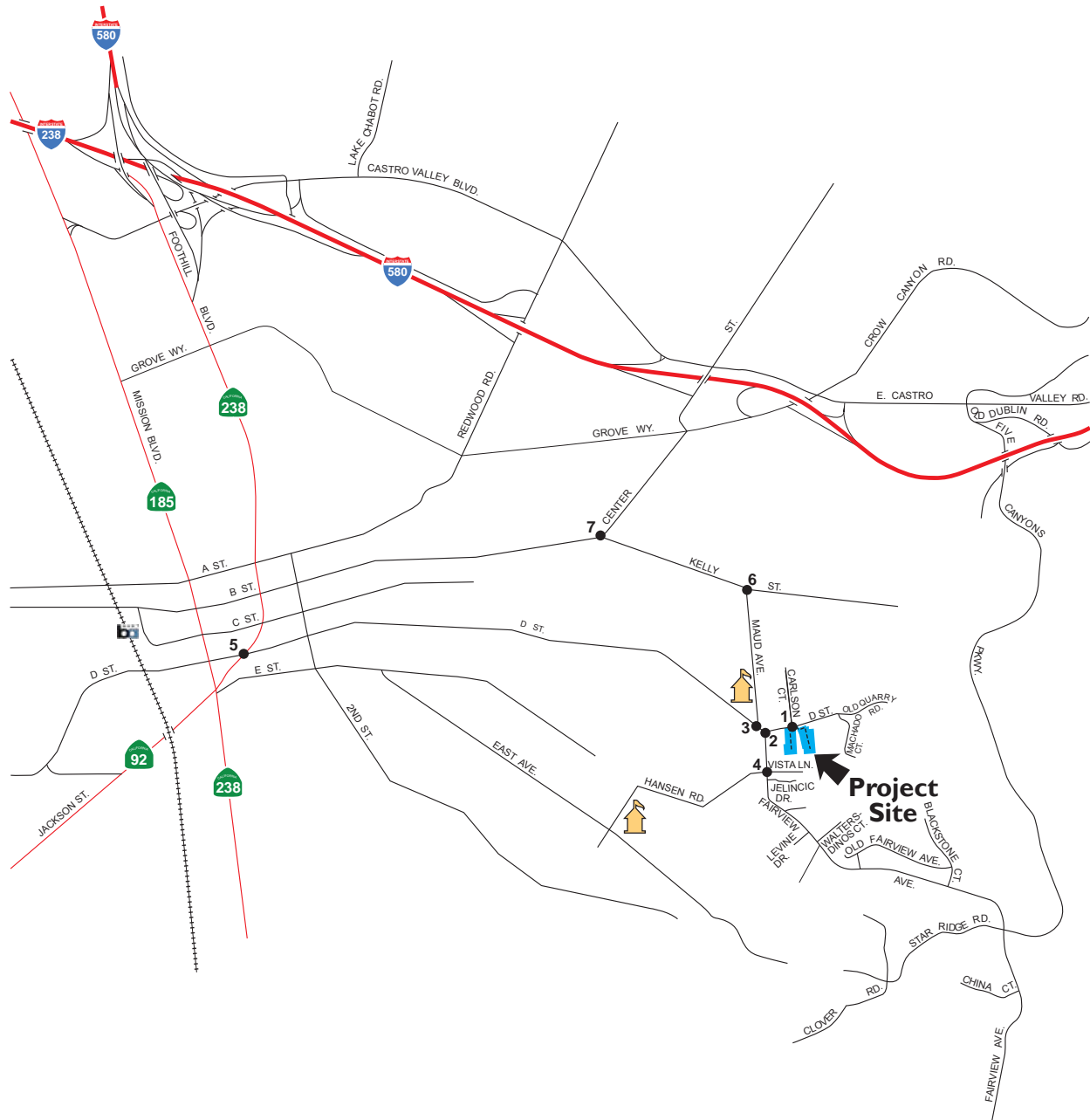
Carlson Court is a local residential cul-de-sac that intersects D Street adjacent to the Project site.

### **Study Area Intersections**

The transportation impact study conducted for this EIR includes analysis of the following seven study intersections:

1. D Street & Carlson Court
2. D Street & Fairview Avenue
3. D Street & Maud Avenue
4. Fairview Avenue & Hansen Road & Vista Lane
5. D Street & Foothill Boulevard
6. Kelly Street & Maud Avenue
7. Kelly Street & Center Street & B Street

**Figure 11.1** provides a vicinity map showing the key roadways and study intersection locations.



- LEGEND**
- Study Intersection
  - 🚇 BART Station
  - 🏠 School



**Figure 11-1**  
**Roadway Network & Study Intersections**



Source: TJKM

### Intersection Level of Service

Transportation engineers and planners commonly use a grading system called level of service (LOS) to measure and describe the operational status of the local roadway network. LOS is a description of the quality of a roadway facility's operation, ranging from LOS A (indicating free-flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions where traffic flows exceed design capacity, resulting in long queues and delays). At signalized and all-way stop controlled intersections, LOS is based average vehicle delay for the intersection as a whole and then given an LOS grade. Basing the LOS on average delay means that some individual movements, such as a left turn, may have longer delays than other movements, but provides a way to focus on the overall performance of each intersection. However, the volume and average peak hour delay of each movement is quantified, so traffic analyses can also focus on individual movements and identify concerns where a delay is unusual and can be mitigated without adversely affecting the overall LOS of the intersection. At side-street stop-controlled intersections (i.e., where one street is not stop-controlled), LOS is based on average vehicle delay for the worst approach (i.e., with the longest delay). Intersections, rather than roadway segments between intersections, are generally the capacity controlling locations for motor vehicle circulation networks.

**Table 11.1** describes intersection LOS criteria for signalized intersections based on Highway Capacity Manual (HCM) 2010 methodology.

**Table 11.1: Signalized Intersection LOS Criteria**

Level of Service	Description
A	Very low control delay, up to 10 seconds per vehicle. Progression is extremely favorable, and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	Control delay greater than 10 and up to 20 seconds per vehicle. There is good progression or short cycle lengths or both. More vehicles stop causing higher levels of delay.
C	Control delay greater than 20 and up to 35 seconds per vehicle. Higher delays are caused by fair progression or longer cycle lengths or both. Individual cycle failures may begin to appear. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflow occurs. The number of vehicles stopping is significant, though many still pass through the intersection without stopping.
D	Control delay greater than 35 and up to 55 seconds per vehicle. The influence of congestions becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volumes. Many vehicles stop, the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Control delay greater than 55 and up to 80 seconds per vehicle. The limit of acceptable delay. High delays usually indicate poor progression, long cycle lengths, and high volumes. Individual cycle failures are frequent.
F	Control delay in excess of 80 seconds per vehicle. Unacceptable to most drivers. Oversaturation, arrival flow rates exceed the capacity of the intersection. Many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to higher delay.

Source: Highway Capacity Manual

### Unsignalized Intersection Methodology

Operations for unsignalized intersections, which include conventional all-way stop-controlled intersections and all-way yield-controlled roundabouts, are also graded using the LOS A through F scale. LOS ratings for all-way stop-controlled intersections and all-way yield-controlled roundabouts are determined using the HCM2010 methodology. Under this methodology, operations are based on average control delay for the entire intersection. Side-street stop-controlled intersections are also evaluated using average control delay scales and LOS; however, unlike all-way stop-controlled intersections or roundabouts, side-street stop- or yield-controlled intersection delay is determined based on the worst operating controlled turning or through movement. **Table 11.2** presents the correlation between LOS and average control delay for unsignalized intersections.

Standards used for this analysis are discussed in more detail under the Significance Criteria subsection later in this chapter. LOS D or better is considered acceptable for purposes of this analysis.

**Table 11.2: Unsignalized Intersection LOS Criteria**

Level of Service	Description
A	Very low control delay less than 10 seconds per vehicle for each movement subject to delay.
B	Low control delay greater than 10 and up to 15 seconds per vehicle for each movement subject to delay.
C	Acceptable control delay greater than 15 and up to 25 seconds per vehicle for each movement subject to delay.
D	Tolerable control delay greater than 25 and up to 35 seconds per vehicle for each movement subject to delay.
E	Limit of tolerable control delay greater than 35 and up to 50 seconds per vehicle for each movement subject to delay.
F	Unacceptable control delay in excess of 50 seconds per vehicle for each movement subject to delay.

Source: HCM

## Baseline (Existing) Conditions

### Existing Intersection Lane Geometry and Traffic Control

The intersection of D Street and Carlson Court (Study Intersection #1) is the nearest intersection to the Project site, and is an unsignalized intersection with three approaches. The side-street approach from Carlson Lane is stop-sign controlled.

The intersection of D Street and Fairview Avenue (Study Intersection #2) is an unsignalized intersection with three approaches. The minor street approach, which is the westbound approach on D Street, is stop controlled. A left-turn pocket and a continuing through lane are provided for eastbound traffic on D Street, while one lane in each direction is provided on the other approaches.

The intersection of D Street and Maud Avenue (Study Intersection #3) is an unsignalized intersection with three approaches. All of the intersection movements are stop controlled except for the westbound right-turn movement from D Street, which is controlled by a yield sign. The westbound approach on D Street and the southbound approach on Maud Avenue have two lanes entering the intersection, while the eastbound approach on D Street has one lane entering the intersection.

The intersection of Fairview Avenue and Hansen Road (Study Intersection #4) is a roundabout with one-lane approaches under yield control in all directions.

The intersection of D Street and Foothill Boulevard (Study Intersection #5) is a signalized four-leg intersection. This is the highest volume intersection among the study intersections, and is the location most likely to be impacted based on existing level of service (LOS).

The intersection of Maud and Kelly Streets (Study Intersection #6) is a signalized four-leg intersection with one through lane per approach. The northbound approach has a left-turn lane and a recently installed right-turn lane, while the eastbound approach also has a right-turn lane.

The intersection of Kelly, Center and B Streets (Study Intersection #7) is a signalized three-leg intersection.

### Existing Traffic Volumes

Existing vehicle, bicycle, and pedestrian counts were collected at study intersections #1 to #5 on February 3, 2016, and at study intersections #6 and #7 on September 8, 2016, when local public schools were in session. The turning movement volumes for the study intersections were taken during the typical A.M. peak period, between 7:00 A.M. and 9:00 A.M., and during the typical P.M. peak period, between 4:00 P.M. and 6:00 P.M. In addition, afternoon school peak period counts were conducted at the intersection of Maud and Kelly Streets (Study Intersection #6) between 2:00 P.M. and 4:00 P.M. Existing traffic volumes, lane geometry, and traffic controls for each study intersection are shown in **Figure 11.2**.

### Existing Intersection Levels of Service

**Table 11.3** presents a summary of the peak hour level of service analysis for each of the study intersections under Existing Conditions. The study intersections near the Project site operate at acceptable service levels of LOS D or better during both peak hours, except the intersection of D Street and Foothill Boulevard, which operates at LOS E during the p.m. peak hour.

**Table 11.3: Peak Hour Intersection Levels of Service – Existing Conditions**

ID	Intersection	Control	A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS
1	D Street / Carlson Court	Minor Street Approach Stop	8.7	A	-	-	8.6	A
2	Fairview Avenue / D Street	Minor Street Approach Stop	11.3	B	-	-	10.3	B
3	D Street / Maud Avenue	All-Way Stop	13.9	B	-	-	12.6	B
4	Fairview Avenue / Vista Lane / Hansen Road	Roundabout	6.0	A	-	-	5.8	A
5	D Street / Foothill Boulevard	Signalized	49.1	D	-	-	<b>60.5</b>	<b>E</b>
6	Kelly Street/ Maud Avenue	Signalized	22.4	C	11.6	B	10.5	B
7	Kelly Street / Center Street – B Street	Signalized	28.5	C	-	-	23.3	C

Notes: Delay = Average Delay in seconds per vehicle

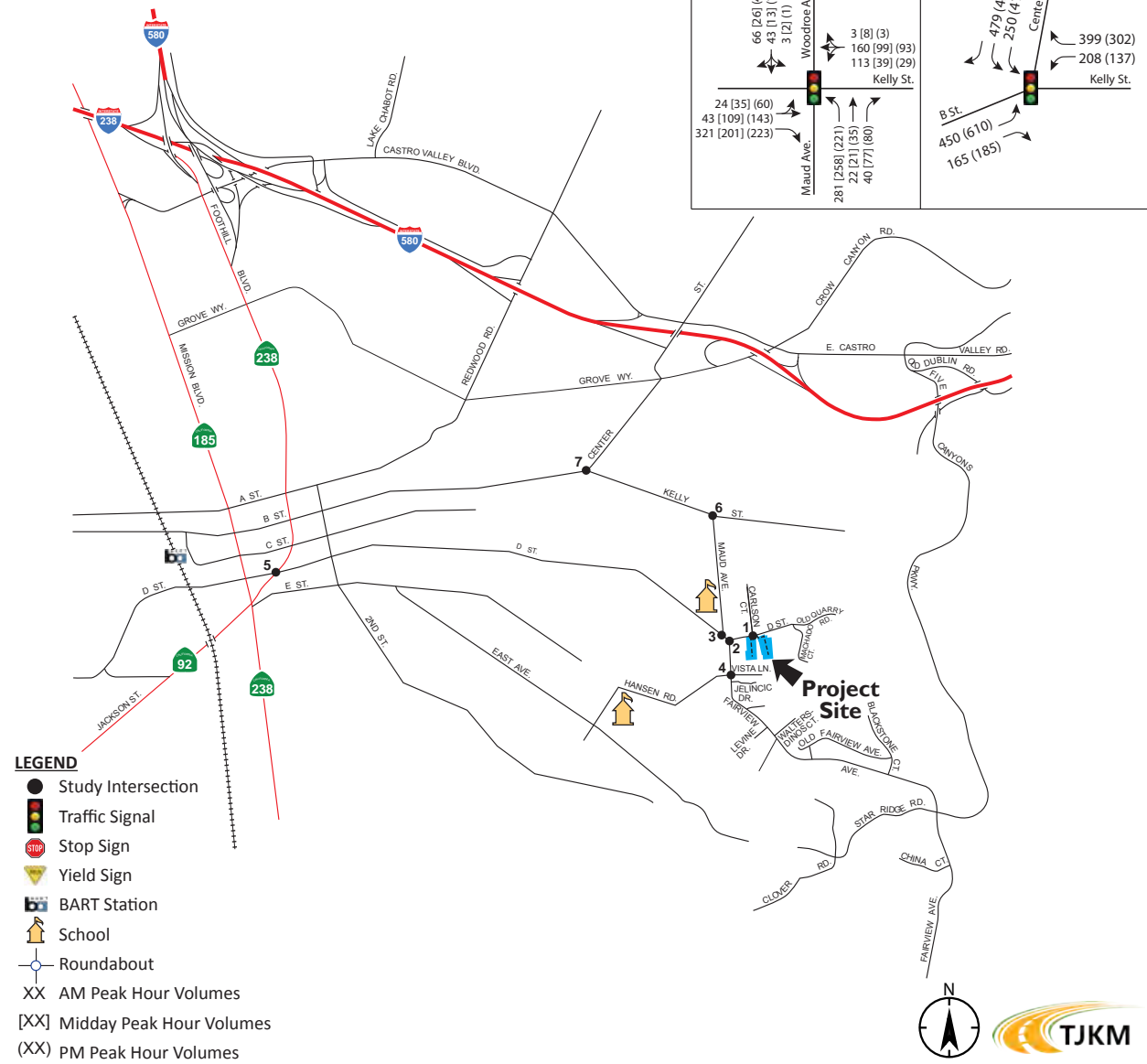
LOS = Level of Service

The delay and LOS at the all-way stop controlled intersection are for the overall intersection performance.

The delay and LOS at intersections with stop or yield control on the minor approach are for the worst-case minor approach.

The delay and LOS at the signalized intersections and roundabout are for the overall intersection performance.

Intersection #1 D St./ Carlson Ct.	Intersection #2 D St./ Fairview Ave.	Intersection #3 D St./ Maud Ave.	Intersection #4 Fairview Ave./ Hansen Rd./Vista Ln.	Intersection #5 D St./ Foothill Blvd.
<p>           D St. → 2 (5) / 11 (30)            Carlson Ct. ← 0 (1) / 38 (23)            D St. ← 5 (6) / 2 (0)         </p>	<p>           D St. → 14 (29) / 235 (229)            Fairview Ave. ← 1 (5) / 265 (179)            D St. ← 47 (34) / 13 (5)         </p>	<p>           D St. → 158 (157) / 79 (123)            Maud Ave. ← 159 (144) / 142 (75)            D St. ← 198 (110) / 168 (159)         </p>	<p>           Fairview Ave. → 36 (40) / 138 (80) / 2 (1)            Hansen Rd. → 122 (107) / 0 (0) / 30 (29)            Vista Ln. → 11 (4) / 1 (1) / 0 (0)            Fairview Ave. ← 150 (110) / 85 (123) / 7 (11)         </p>	<p>           D St. → 254 (603) / 341 (441)            Foothill Blvd. ← 93 (65) / 1,004 (584)            D St. ← 2,285 (2,983) / 99 (119)         </p>
		<p>           Maud Ave. → 24 [35] (60) / 43 [109] (143) / 321 [201] (223)            Kelly St. → 3 [8] (3) / 160 [99] (93) / 113 [39] (29)            Maud Ave. ← 66 [26] (45) / 43 [13] (11) / 3 [2] (1)            Kelly St. ← 281 [258] (221) / 22 [21] (35) / 40 [77] (80)         </p>		<p>           Center St. → 399 (302) / 208 (137)            Kelly St. → 450 (610) / 165 (185)            Center St. ← 479 (431) / 250 (413)         </p>



**Figure 11-2**  
**Existing Traffic Volumes, Lane Geometry, and Traffic Controls**  
 Source: TJKM



### Existing Freeway Operations

I-580 is located approximately 1.8 miles from the Project site and is the central east-west corridor in the regional freeway network through Alameda County, between the Bay Bridge and the Central Valley. Based on the most published Caltrans traffic data, peak hour traffic on Interstate 580 at Redwood Road in the Project vicinity averages more than 15,500 peak-hour vehicles. The Fairview area has access to and from I-580 at one main point, about 500 feet east of Grove Way (where it continues north as Crow Canyon Road) for west-bound on- and off-ramps. I-580 is often congested during peak hours, and periodically also congested during non-peak hours.

### Pedestrian Conditions

Current pedestrian activity as counted at the study intersections amounts to less than seven pedestrians per peak hour. No sidewalks are provided on D Street east of Fairview Avenue. Existing sidewalks are provided along random, isolated segments of streets within vicinity of the Project, somewhat more concentrated west of the Fairview/Hansen roundabout and segments of D Street west of Fairview Avenue.

Pedestrian activity in the vicinity is constrained by the fragmented sidewalk network and lack of other walking pathways. The existing low-density development pattern in the study area makes it necessary for a vast majority of trips, or nearly every general purpose trip, to be made by car. It is possible that the little evidence of pedestrian usage along Fairview Avenue is an indication that walkers in the area stay on their local streets and small courts away from the comparatively busy Fairview Avenue, or may be more active during non-peak hours (i.e., leisure time or weekends). As infill development occurs and the area matures, the need and expectations for safe pedestrian routes along more of the area roadways can be anticipated, and walking is strongly encouraged by public health policies.

### Bicycle Conditions

There are four classification of bicycle facilities in California:

- Class I – Multi-Use Trails (off-street),
- Class II – Bike Lanes (on-street, striped lanes),
- Class III – Bike Routes (on-street, signed only) and
- Class IV- Separated Bikeways (generally on-street but with physical separations from adjacent travel lanes).

In the Project study area, there are no classified Class I, II, III, or IV facilities, although Fairview Avenue is identified in the *Alameda County Bicycle Master Plan for Unincorporated Areas* as one of the roadways designated to become a Class III bike route, between D Street and the Hayward city limits.

TJKM collected A.M. and P.M. peak hour bicycle counts at all study intersections on February 3 and September 8, 2016. Current bicycle volumes were counted at less than five bicycles per hour at the study intersections. Bicycle volumes are relatively low within the study area. The evident low number of bicycle trips is also most likely due to the hilly terrain of the vicinity, limited and variable shoulders on Fairview Avenue, limited sight distance related to its various turns and curves, and speeds often above the posted speed limit, as noted above.

### Transit Conditions

The proposed Project is located approximately 1/5-mile from the nearest existing bus stops at Maud and D Streets, served by AC Transit Route 95 with service to Hayward BART Station. AC Transit Route 95 operates at a peak load factor below 1.0, indicating available capacity for additional riders during peak hours. The Project site is roughly 2.4 miles from the Hayward BART station.

### **Future (Cumulative) Baseline Conditions**

#### Future Baseline Development Scenario

The Future Baseline development scenario, also referred to as cumulative conditions, is based on a 20-year horizon to assess potential impacts from the proposed Project. For conservative traffic analysis purposes, the Future Baseline traffic analysis is based on the worst-case development potential for sites near the Project site. The gross development potential for other sites in the area was previously identified in the *Traffic Impact Study for the Fairview Tract #8057 Residential Development* (TJKM Transportation Consultants 2012).

The gross development potential is based on a tabulation of specific sites or small areas in the Project vicinity, roughly between Fairview Elementary School on the west to Five Canyons Parkway on the east, Lone Tree Cemetery and Star Ridge Road on the south and the Five Canyons Open Space on the north and east. These sites are currently undeveloped or under-developed and have a total estimated hypothetical capacity for 195 additional single-family residential dwelling units. This estimate of future residential development over a possible 20-year period is considered an extreme “worst case” scenario because it is a result of a mathematical calculation of lot sizes and allowable residential densities based on zoning without consideration of constraining access requirements, slope, environmental or other factors. County Planning staff, which prepared the estimate, consider such development to be physically impossible, because an average of 30% of every site must be subtracted to provide access and because it is almost impossible to create lots that are exactly the minimum lot size (e.g., 5,000 square feet where that lot size is the minimum required). However, it may serve to represent development trends not presently anticipated, such as more development in unforeseen locations, greater traffic loads from the Stonebrae development in the Hayward city limits, or possible changes to zoning that would allow secondary units or to moderately higher densities.

The gross development potential is higher than growth projections prepared by ABAG, which assumes an annual growth rate of 0.9 percent, consistent with current ABAG projections for the San Francisco Bay Area. Based on ABAG forecasts, the anticipated growth rate would result in less than 75 new single-family homes in the Project vicinity over a 20-year period, including the Project.

#### Trip Generation - Future Baseline Development

Trip generation for the potential future development was determined using trip rates contained from ITE (Institute of Transportation Engineers) *Trip Generation*. Based on the gross development potential in the area, the potential development of 195 net new single-family homes could be expected to generate a cumulative total of 151 trips during the A.M. peak hour, 195 trips during the P.M. peak hour, and 1,856 average weekday trips. The locations and trip generation for the additional development during the peak hours are summarized in **Table 11.4**. The average weekday trip generation from gross development potential in the area is summarized in **Table 11.5**.

**Table II.4: Peak Hour Trip Generation for Future Baseline Development Potential**

Site	Parcel Location	Size	A.M. Peak Hour					P.M. Peak Hour				
			Rate	In: Out%	In	Out	Total	Rate	In: Out %	In	Out	Total
A	3216 D St.	14 units	0.75	25:75	3	8	11	1.01	63:37	9	6	15
B	3230 D St.	2 units	0.75	25:75	0	1	2	1.01	63:37	2	1	3
F	3290 Jelincic Dr.	19 units	0.75	25:75	4	11	14	1.01	63:37	13	7	20
G	24694 Fairview Ave.	12 units	0.75	25:75	2	7	9	1.01	63:37	8	5	13
H	24830 Fairview Ave.	18 units	0.75	25:75	3	10	14	1.01	63:37	12	7	19
I	24717 Fairview Ave.	7 units	0.75	25:75	1	4	5	1.01	63:37	5	3	8
J	24787 Fairview Ave.	6 units	0.75	25:75	1	3	5	1.01	63:37	4	3	7
K	24867 Fairview Ave.	11 units	0.75	25:75	2	6	8	1.01	63:37	8	4	12
L	3664 D St./Quarry Rd.	8 units	0.75	25:75	2	5	6	1.01	63:37	6	3	9
M	3552 D St./Quarry Rd.	11 units	0.75	25:75	2	6	8	1.01	63:37	8	4	12
N	5262 to 5499 Hilltop Rd.	24 units	0.75	25:75	5	14	18	1.01	63:37	16	9	25
O	D St./Ohlone Way	7 units	0.75	25:75	1	4	5	1.01	63:37	5	3	8
P	D St./Ohlone Way	6 units	0.75	25:75	1	3	5	1.01	63:37	4	3	7
Q	Noble Canyon, Fairview Ave east of D St.	4 units	0.75	25:75	1	2	3	1.01	63:37	3	2	5
R	Sarita St./Karina St.	31 units	0.75	25:75	6	17	23	1.01	63:37	20	12	32
S	Fairview Avenue near Jelincic Drive	15 units	0.75	25:75	3	8	11	1.01	63:37	9	6	15
	<b>Total</b>	<b>195 units</b>			<b>38</b>	<b>109</b>	<b>151</b>			<b>123</b>	<b>72</b>	<b>195</b>

Notes: Single-Family Detached Housing Land Use (ITE Code 210) was assumed for all developments. Alphabetic site listing skips C, D & E, which were previously mapped as the subject project sites.

**Table 11.5: Daily Trip Generation for Future Baseline Development Potential**

Site	Parcel Location	Size	Rate	Weekday Daily			Total
				In: Out	In	Out	
A	3216 D St.	14 units	9.52	50:50	67	66	133
B	3230 D St.	2 units	9.52	50:50	9	10	19
F	3290 Jelincic Dr.	19 units	9.52	50:50	91	90	181
G	24694 Fairview Ave.	12 units	9.52	50:50	57	57	114
H	24830 Fairview Ave.	18 units	9.52	50:50	85	86	171
I	24717 Fairview Ave.	7 units	9.52	50:50	34	33	67
J	24787 Fairview Ave.	6 units	9.52	50:50	28	29	57
K	24867 Fairview Ave.	11 units	9.52	50:50	53	52	105
L	3664 D St./Quarry Rd.	8 units	9.52	50:50	38	38	76
M	3552 D St./Quarry Rd.	11 units	9.52	50:50	53	53	105
N	5262 to 5499 Hilltop Rd.	24 units	9.52	50:50	114	114	228
O	D St./Ohlone Way	7 units	9.52	50:50	33	33	67
P	D St./Ohlone Way	6 units	9.52	50:50	28	29	57
Q	Noble Canyon, Fairview Ave east of D St.	4 units	9.52	50:50	19	19	38
R	Sarita St./Karina St.	31 units	9.52	50:50	148	147	295
Fairview Tract #8057	Fairview Avenue near Jelincic Drive	15 units	9.52	50:50	71	72	143
	Total	195 units			928	928	1,856

Note: Single-Family Detached Housing Land Use (ITE Code 210) was assumed for all developments.

### Future Baseline Trip Distribution and Assignment

TJKM used the trip distribution and assignment for the potential future cumulative development as prepared for the *Traffic Impact Study for the Fairview Tract #8057 Residential Development*<sup>1</sup>, which was prepared based on consultation with County staff, expected future area traffic volumes, and TJKM's knowledge of the study area. The Future Baseline peak hour traffic volumes are shown in **Figure 11.3**. The expected lane geometry and traffic controls at the study intersections under Future Baseline Conditions are identical to Existing Conditions.

<sup>1</sup> Traffic Impact Study for the Fairview Tract # 8057 Residential Development, December 4, 2012



### Intersection Level of Service Analysis – Future Baseline Conditions

**Table 11.6** presents a summary of the peak hour level of service analysis for all study intersections under Future Baseline Conditions. For Future Baseline Conditions, the study intersections are expected to remain operating at acceptable service levels of LOS D or better, except the intersection of D Street and Foothill Boulevard that will continue operating unacceptably at LOS E during the P.M. peak hour.

**Table 11.6: Peak Hour Intersection Level of Service – Future Baseline Conditions**

ID	Intersection	Control	Existing Conditions						Future Baseline Conditions					
			A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour		A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	D Street / Carlson Court	Minor Street Stop	8.7	A	-	-	8.6	A	9.4	A	-	-	8.8	A
2	Fairview Avenue / D Street	Minor Street Stop	11.3	B	-	-	10.3	B	13.2	B	-	-	12.1	B
3	D Street / Maud Avenue	All-Way Stop	13.9	B	-	-	12.6	B	21.1	B	-	-	15.2	B
4	Fairview Avenue / Hansen Road	Roundabout	6.0	A	-	-	5.8	A	6.6	A	-	-	6.5	A
5	D Street / Foothill Boulevard	Signalized	49.1	D	-	-	60.5	E	49.9	D	-	-	62.8	E
6	Kelly Street/ Maud Avenue	Signalized	22.4	C	11.6	B	10.5	B	29.9	C	11.0	B	11.3	B
7	Kelly Street / Center Street – B Street	Signalized	28.5	C	-	-	23.0	C	38.7	D	-	-	24.7	C

Notes: Delay = Average Delay in seconds per vehicle

LOS = Level of Service

The delay and LOS at the all-way stop controlled intersection are for the overall intersection performance.

The delay and LOS at intersections with stop or yield control on the minor approaches are for the worst-case minor approach.

The delay and LOS at the signalized intersections and roundabout are for the overall intersection performance.

## Regulatory Setting

This section provides a summary of the plans and policies of the County, and regional and state agencies that have policy and regulatory control over the Project study area with respect to traffic and transportation. Federal transportation regulations are applicable only to major federal highway or publicly funded public transportation proposals, and therefore do not apply to the proposed Project.

## State Regulations

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, and maintaining all interstate freeways and state routes. I-580 is the nearest roadway that is under Caltrans' jurisdiction, while Foothill Boulevard (State Route 238) is a Caltrans state route that intersects D Street west of the Project site. Caltrans requirements are described in their 2002 *Guide for the Preparation of Traffic Impact Studies*, which covers the information needed for Caltrans to review the impacts on state highway facilities; including freeway segments, on- and off-ramps, and signalized intersections.

## Regional / Alameda County Regulations

### Alameda Countywide Transportation Plan

The mission of the Alameda County Transportation Commission (ACTC) is to plan, fund and deliver a broad spectrum of transportation projects and programs to enhance mobility throughout Alameda County. Many projects and programs are at least partially funded by a county-wide transportation sales tax levied by the County. ACTC issued the Alameda Countywide Transportation Plan (CWTP) in 2012, which establishes performance measures for transportation projects. Such measures address traffic congestion, alternative (non-auto) mode use, accessibility to activity centers, accessibility to public transit, public transit usage, transit efficiency, travel time and system reliability for autos and transit, maintenance for roadways and transit, system safety, level of physical activity, and environmental policies (to reduce greenhouse gas and particulate emissions, for example). ACTC has also established land use based measures that address the importance of coordination between land use and transportation projects.

The CWTP is a long range policy document that guides future transportation investments, programs, policies and advocacy for all of Alameda County through 2040. The CWTP addresses all aspects of the countywide transportation system, including capital, operation and maintenance of freeways, buses, rail, ferries and other modes. It also addresses transportation programs that serve varying needs throughout the County, such as paratransit services for seniors and people with disabilities and safe access to schools. This document establishes a vision for Alameda County's transportation system, inventories needs and available funding and identifies gaps where funding and needs do not match and where additional funding sources need to be secured.

Analysis under Alameda County's Congestion Management Program (CMP) is required for projects that generate 100 or more P.M. peak hour trips.

### Fairview Area Specific Plan

Set forth below are the policies and principles in the *Fairview Area Specific Plan* related to traffic and circulation.

#### *Public Streets*

It is the policy of the County to maintain a level of service C in the internal street system except at the intersection of Kelly, B, and Center which is to maintain a level of service D. Because improvements are required in both the internal street system and these key intersections in the City of Hayward in order to adequately accommodate existing and future vehicular traffic the following specific policies are adopted:

1. The County is committed to improving the traffic system immediately affecting the Fairview Area, while preserving the quality of life of surrounding existing residences. Improvements to the internal street system must take into consideration the needs of the existing residents, and pedestrians as well as motorists. The need for such improvements must be balanced against the desirability of preserving existing neighborhoods. It is the policy and preference of the community to avoid traffic signals in the Fairview area where possible.
2. The County and City must continue to carefully analyze major deficiencies in the internal street system as well as critical external intersections. They must also continue to evaluate street needs given projected automobile, bus, bicycle, and pedestrian traffic; estimate improvement costs to rectify problems; establish a priority and improvement schedule; and study alternative sources of funding. Critical intersections that have been identified include: 1) B Street/Center Street/Kelly Street; 2) Kelly Street/Maud Avenue; 3) Center Street/Grove Way; 4) Hansen Road/Fairview Avenue; 5) D Street/Maud Avenue; 6) D Street/Second Street; 7) E Street/Second Street; and 8) D Street/Seventh Street.
3. Since four of the critical intersections affecting the area are within the City of Hayward, and since a significant amount of traffic is and will be contributed by Hayward development, the City's participation, both technically and financially, in solutions to the traffic problems is essential.
4. Costs of improvements shall be borne, in large part, by new development, with the County and City providing additional funds if available.
5. The County and City shall maintain information on traffic in the area in order to fully and quickly evaluate effects of new developments and timing of improvements.
6. The street design of new developments shall be complementary to the character of the existing neighborhood and proposed development. In many areas of Hillview, an asphalt curb or berm and graveled walkway are in keeping with the area's character, rather than P.C.C. curb, gutter and sidewalk.
7. All new approved developments which include off-site street improvements shall include an improvement schedule at the Final Map. This schedule shall tie street improvements to a specific completion date such as prior to first occupancy or a specific phase of the development.

#### *Private Streets*

1. Private street design in new townhouse-condominium developments shall conform to adopted Planned Development District design standards.
2. Private streets may serve conventional single-family residential development and shall conform to County design standards. County standards shall include different standards for different sized projects and a requirement for a public street if the project is large enough or the road will serve other property.
3. The private street design shall be complementary and consistent with the character of the existing neighborhood and proposed development. In most areas of Fairview, an asphalt curb or berm and graveled walkway are in keeping with the area's character.
4. A maintenance agreement shall be executed or a homeowners association formed to maintain private street improvements. The County may study the possibility of establishing an areawide County Service Area (CSA) for the purpose of maintaining existing and future



- private streets. New subdivisions with private streets would be required through the conditions of approval to join the CSA Existing private streets would have the option of being added to the CSA with the consent of property owners.
5. Existing private streets in the Fairview Area which are through roads or provide access to other streets should be considered for acceptance into the County road system.
  6. Future development along existing private streets (such as Fairlands Road and Speed Lane) shall be permitted only upon demonstration to the County that:
    - 1) Street improvements are or will be upgraded to County private street standards.
    - 2) Existing satisfactory street maintenance arrangements will not be disrupted.
    - 3) Existing unsatisfactory street maintenance and maintenance arrangements will be improved.

It is recognized that this policy might preclude future development along some private streets.

### County Bicycle Plan

The *Alameda County Bicycle Master Plan for Unincorporated Areas* (2006 Update) reports that between 0.1 and 0.5 percent of residents in most of the County's unincorporated communities commute regularly by bicycle, with the Fairview area at the low end of 0.1 percent.<sup>2</sup> On a Bay Area wide basis, 1.3 percent of home-based shopping trips are by bicycle, as are 3.8 percent of school-related trips. Because of the hilly terrain in the Fairview area and the lack of bicycle lanes and wide shoulders on Fairview Avenue and most other area roads, bicycle use in the Fairview area is on the low end of the range for commute trips, and perhaps half or less of the Bay Area rate for shopping, school trips and recreational bicycling.

Fairview Avenue, along with D Street, Maud Avenue, Kelly Street, Hansen Road and East Avenue in the unincorporated Fairview area are all designated as proposed Class IIIA "Rideways," one of four subclasses of Class III bike routes. Class III routes typically provide "Bike Route" signage but no designated roadway lane or path separate from the street. Rideways on arterial roads, with slower traffic, are recommended in the *Bicycle Master Plan* to have wide curb lanes, traffic calming and signage indicating that it is a bike route. The Alameda County Neighborhood Traffic Calming Program is identified as having a key role in introducing traffic calming to specific bicycle routes.

Despite the challenging local topography, it is reasonable to anticipate some increase in bicycle activity in the area over the next 20 years, consistent with regional and national trends.

### County Pedestrian Plan

In October 2012 the County adopted the *Alameda County Pedestrian Plan*, an update to the County's 2006 Pedestrian Plan.<sup>3</sup> Because the policy context surrounding non-motorized transportation has changed substantially since 2006, the updated Plan gives special attention to relevant policy areas that have emerged or advanced in importance in the past six years. These areas include complete streets, climate action, smart growth and active transportation. Thus, the primary intent of the 2012 Pedestrian

<sup>2</sup> Bicycle Master Plan: <http://www.acgov.org/pwa/BMP%20Draft%20Report%2011-27-06.pdf>

<sup>3</sup> Pedestrian Plan: [http://www.alamedactc.org/files/managed/Document/10093/ACTC\\_Ped\\_Plan\\_Final\\_10-25-12\\_011013.pdf](http://www.alamedactc.org/files/managed/Document/10093/ACTC_Ped_Plan_Final_10-25-12_011013.pdf)

Plan is to identify and prioritize pedestrian projects, programs and planning efforts of countywide significance. The plan provides the background, direction and tools needed to increase the number of pedestrians and walking trips in Alameda County while improving pedestrian safety.

## Impacts and Mitigation Measures

The following section describes potentially significant Project impacts related to transportation. Mitigation recommendations are made to avoid, minimize, or mitigate such impacts where necessary and feasible.

### Significance Criteria

The Project would have a significant environmental impact if it were to:

1. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.
2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
3. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
5. Result in inadequate emergency access.
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

### Specific Significance Thresholds Used for this Analysis<sup>4</sup>

Specific significance thresholds from applicable plans and policies relevant to the Project are discussed below.

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<sup>4</sup> Senate Bill 743 was passed by the State Legislature in 2013. Among other matters, SB 743 requires the Office of Planning and Research (OPR) to update the Guidelines Implementing CEQA to replace existing requirements for studying transportation impacts. Existing rules treat auto delay and congestion, commonly measured using “level of service” (or LOS), as an environmental impact. Instead, SB 743 requires the CEQA Guidelines to proscribe an analysis that better accounts for transit and reducing greenhouse gas emissions. In their proposal, the OPR selected vehicle miles traveled (VMT) as a replacement method for evaluating the traffic impacts of projects. Governor Brown signed SB 743 in September 2013. OPR published a preliminary evaluation of possible metrics to replace “level of service” in transportation analyses in December 2013. In August 2014, OPR released a Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing SB 743. On January 20, 2016, the OPR released for public review a revised proposal for changes to the CEQA Guidelines. Once the CEQA Guidelines are officially amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA. As of the publication date of this Draft EIR, the CEQA Guidelines have not been

### *Alameda Countywide Transportation Plan (CWTP)*

The Alameda Countywide Transportation Plan identifies what constitutes a significant impact due to the Project. The standards used for this report are presented below.

Signalized Intersections: Impacts at signalized intersections would be significant if the Project is expected to:

- Degrade the A.M. or P.M. peak hour from an acceptable LOS D or better under No Project Conditions to an unacceptable LOS E or worse under Project Conditions.
- Degrade the A.M. or P.M. peak hour at identified intersections near freeways from an acceptable LOS E (80 seconds/vehicle) or better under No Project Conditions to an unacceptable LOS F under Project Conditions.
- Degrade the A.M. or P.M. peak hour operating at substandard LOS under No Project Conditions by increasing the average intersection delay by more than 5 seconds per vehicle under Project Conditions.

If significant impacts are identified at a specific intersection, the impact may be mitigated to a *less-than-significant* level if an infrastructure improvement or traffic volume reduction results in the intersection operating at its minimum threshold or better. If an intersection is currently operating at substandard LOS, the improvement must, at a minimum, ensure the intersection LOS is restored to its No Project LOS operating conditions in order for the impact to be avoided or reduced to a *less-than-significant* impact.

Unsignalized Intersections: For the purposes of this analysis, unsignalized intersection impact criteria were developed to be similar to those at signalized intersections. Impacts at unsignalized intersections would be significant if the Project is expected to:

- Degrade the A.M. or P.M. peak hour at a study intersection from an acceptable LOS E ( $\leq 50$  seconds/vehicle) or better under No Project Conditions to an unacceptable LOS F ( $> 50$  seconds/vehicle) under Project Conditions.
- Degrade the A.M. or P.M. peak hour at an all-way stop-controlled study intersection that is operating at a substandard LOS under No Project Conditions by increasing the average intersection delay by more than 5 seconds per vehicle.
- Degrade the A.M. or P.M. peak hour at a side-street stop-controlled study intersection operating at substandard LOS under No Project Conditions by increasing the vehicle delay of the leg with the worst LOS by more than 5 seconds per vehicle.

The same mitigation criteria explained above for signalized intersections applies to unsignalized intersections.

### *Transit, Pedestrian, and Bicycle Operations*

CEQA states that an impact to bicycle, pedestrian, and transit circulation would be significant if it conflicts with adopted policies, plans, or programs supporting these forms of transportation. Impacts specific to bicycle, pedestrian, and transit circulation would be significant if the Project causes one or more of the following:

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officially amended, and Alameda County has not yet adopted new local VMT thresholds by which projects can be evaluated. As a result, the LOS-type analyses used in this EIR remain as an allowed method to evaluate the Project's impacts on traffic and transportation operations.

### Bicycle

- Conflicts with existing or planned bikeways and trails.
- Creates a safety issue for bicyclists.
- Exacerbates a current substandard bicycle condition in the Project area.

### Pedestrian

- Results in substantial conflicts for pedestrians or would adversely affect nearby pedestrian facilities.
- Creates a safety issue for pedestrians.
- Exacerbates a current unsafe pedestrian condition in the Project area.

### Transit

- Conflicts with existing or future transit routes.
- Causes a transit demand above the levels able to be adequately provided by local transit operators or agencies, or has other adverse impacts on transit operations.

### *Fairview Area Specific Plan*

In addition to Alameda CWTP LOS significance criteria, the Fairview Specific Plan contains LOS significance criteria specific to the Fairview area. County policy is to:

- maintain LOS C for the Fairview internal street system, with the following one exception;
- at the Kelly/B/Center intersection, maintain LOS D.

### Freeway and Ramp Operations

As stated in the Caltrans *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2001), "Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities. However, Caltrans acknowledges that this may not always be feasible. If an existing State highway facility is operating at less than the appropriate target LOS, the existing [measure of effectiveness] should be maintained."

However, the Alameda County *Congestion Management Plan* identifies LOS no worse than E (volume over capacity or "v/c" < 1.00) on freeways and ramps during peak hours. For the purposes of this study, significant traffic impacts on I-580 in the study area are identified if the proposed Project causes:

- the operations of a freeway segment or ramp to deteriorate from LOS E or better to LOS F; or
- an increased v/c ratio on a freeway segment already operating at LOS F by more than 3%.

### Site Access and Circulation

Impacts to site access and on-site circulation would be significant if the following criteria were met:

- The Project's on-site circulation system would be inadequate for the volumes and types of traffic expected.
- Vehicular access points would not be designed to appropriate design standards.

### Additional Considerations

The Project would result in a significant impact if it met one or more of the following criteria:

- Resulted in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
- Resulted in inadequate emergency access;
- Resulted in construction-related impacts; or
- Diverted traffic onto a local, residential street such that its total daily volumes resulted in more than 5,000 vehicles.

### **Project Assumptions**

#### Project Description

The proposed Project would consist of 31 single-family homes on two parcels or sites (Tract #8296 and Tract #8297) to be accessed by two new local streets connecting to D Street near the intersection with Carlson Court.

#### Trip Generation – Proposed Project

Trip generation for the proposed Project was determined using trip rates contained in the standard reference book *Trip Generation*, 9th Edition, published by the ITE. The proposed development is expected to generate approximately 23 trips during the A.M. peak hour, 31 trips during the P.M. peak hour, and 295 average weekday daily trips. Trip generation for the proposed development during the peak hours and the average weekday is summarized in **Table 11.7** and **Table 11.8**, respectively.

**Table 11.7: Peak Hour Trip Generation for Proposed Development**

Project	Land Use (ITE Code)	Size	A.M. Peak Hour					P.M. Peak Hour				
			Rate	In:	Out	In	Out	Total	Rate	In:	Out	In
Tracts #8296 and #8297	Single-Family Detached Housing (210)	31 Units	0.75	25:75	7	16	23	1.00	63:37	20	11	31

**Table 11.8: Weekday Daily Trip Generation for Proposed Development**

Project	Land Use (ITE Code)	Size	Weekday Daily				
			Rate	In: Out	In	Out	Total
Tract #8296 and #8297	Single-Family Detached Housing (210)	31 Units	9.52	50:50	148	147	295

### Trip Distribution and Trip Assignment

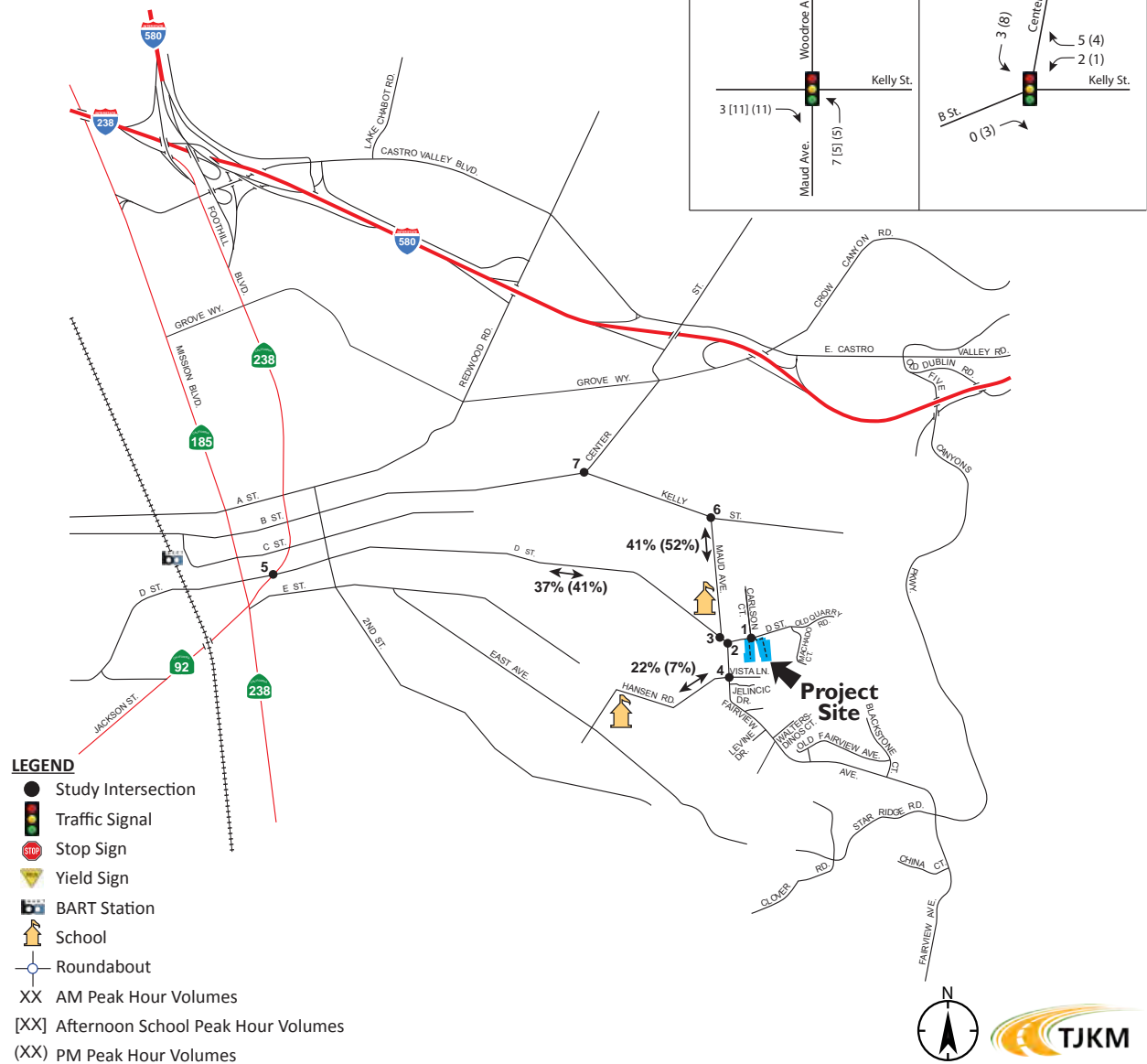
Trip distribution determines the proportions of the total vehicles generated by a project that are expected to travel between the project site and various destinations outside the project area. Trip assignment determines the various routes that vehicles are expected to take while travelling between the project site and each destination.

For the proposed Project, the trip distribution and assignments were determined based on the actual counted turning movement volumes at the study intersections near the site. Since existing land uses in the area are primarily residential, the existing turning movements provide a reliable method of predicting the distribution of Project-generated trips. The distribution of Project-generated trips to the Kelly/Maud intersection (41% AM / 52% PM) reflects the existing turning movement data at D Street/Maud and at D Street/Fairview.<sup>5</sup> The trip distribution and assignment for the proposed development is shown in **Figure 11.4**.

The assigned Project trips were added to Existing Conditions traffic volumes to generate Existing plus Project Conditions traffic volumes. The resulting Existing plus Project traffic volumes, as well as lane geometry and traffic controls, are shown in **Figure 11.5**. As shown, the intersection of Carlson Court/D Street is slightly offset from the two Project street intersections. Access to the Project's eastern parcel would enter/exit D Street slightly further to the east of this intersection, and so Project trips from the eastern parcel are shown as part of (or added to) the east/west through movements on D Street, and not turning movements at the Carlson Court intersection.

<sup>5</sup> In the opinion of the traffic engineer, it is likely that congestion on I-580 and existing delays at the on and off-ramps may discourage trips directly north to I-580 that would otherwise use Kelly/Maud. Similarly, existing turning data at Kelly/Maud may reflect local motorists avoiding school-related traffic that occurs on Maud during the a.m. peak hour. Vehicle trips to/from downtown Hayward and the BART Station generally occur directly via D Street, thus by-passing Kelly/Maud, and vehicle trips to/from the South Bay or Peninsula are also more direct via D Street, bypassing both Kelly/Maud and I-580.

Intersection #1 D St./ Carlson Ct.	Intersection #2 D St./ Fairview Ave.	Intersection #3 D St./ Maud Ave.	Intersection #4 Fairview Ave./ Hansen Rd./Vista Ln.	Intersection #5 D St./ Foothill Blvd.
			Intersection #6 Kelly St./ Maud Ave.	Intersection #7 Kelly St./B St./ Center St.



**Figure 11-4**  
**Project Trip Distribution and Assignment**



Source: TJKM





## Intersection Level of Service – Existing plus Project Conditions

**Transp-1: Intersection Impacts.** Traffic generated by the Project would increase traffic levels at the study intersections, but would not change the existing level of service at any studied intersections. (LTS)

Project traffic was added to existing traffic volumes at seven study intersections to form the basis for Project analysis. It is assumed that existing roadway configurations will remain in place, except where the Project's proposed two new access streets would intersect with D Street, both of which are adjacent to, but offset from the D Street/Carlton Court intersection.

As indicated in **Table 11.9**, the addition of Project trips would not degrade any study area intersection LOS, and the LOS at all study intersections except D Street/Foothill Boulevard would remain at LOS C or better.

- Near the Project site, the stop-controlled intersections along D Street at Carlson Court, Fairview Avenue and Maud Avenue (Intersections 1, 2 and 3) would remain at LOS A, B and B respectively. The LOS at the minor street approach to a stop-controlled intersection is based on the effect on the worst approach. As indicated in Table 11.9, the effect of the Project on the "worst approach" is less than 1 second at both such locations.
- The roundabout intersection at Fairview and Hansen Road (Intersection 4) would remain at LOS A conditions.
- Further from the Project site, the LOS at the intersection of D Street and Foothill Boulevard (Intersection 5) currently operates at LOS D during the A.M. peak hour, and at over threshold levels (at LOS E) during the P.M. peak hour. The addition of Project traffic would not change the operating LOS during either the A.M. or P.M. peak hour, and the net change in average delay during the P.M. peak hour with the addition of Project trips would be less than one second (i.e., less than the threshold of adding 5 or more seconds of delay to any intersection).
- At the signalized intersection at Kelly Street and Maud Avenue (Intersection 6), the Project's traffic would add approximately 5 seconds of delay during the P.M. peak hour and approximately 2.9 seconds of delay during the afternoon school peak hour, but the overall acceptable intersection LOS C and B conditions would remain unchanged. The addition of 5 seconds of average delay is not considered a significant impact under thresholds established by either Caltrans or the Fairview Area Specific Plan, because the intersection is operating at acceptable LOS B and it would not result in a lower LOS. Since the intersection will continue to operate at acceptable LOS B and C conditions during these two peak periods, the additional delay is not considered significant.
- Similarly, at the signalized intersection at Kelly Street and Center Street/B Street (Intersection 7), the addition of Project generated traffic would add nearly 5 seconds (4.7 seconds) of delay during the A.M. peak hour, but the overall intersection LOS C condition would remain unchanged. The addition of nearly 5 seconds of delay is not considered a significant traffic impact unless the intersection is operating unacceptably. Since the intersection will continue to operate at acceptable LOS C conditions, the additional delay is not considered significant.

**Table 11.9: Peak Hour Intersection Level of Service – Existing plus Project Conditions**

ID	Intersection	Control	Existing Conditions						Existing plus Project Conditions					
			A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour		A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	D Street / Carlson Court	Minor Street Approach Stop	8.7	A	-	-	8.6	A	9.4	A	-	-	9.3	A
2	Fairview Avenue / D Street	Minor Street Approach Stop	11.3	B	-	-	10.3	B	11.7	B	-	-	10.5	B
3	D Street / Maud Avenue	All-Way Stop	13.9	B	-	-	12.6	B	14.4	B	-	-	13.1	B
4	Fairview Avenue / Hansen Road	Roundabout	6.0	A	-	-	5.8	A	6.0	A	-	-	5.8	A
5	D Street / Foothill Boulevard	Signalized	49.1	D	-	-	60.5	E	49.1	D	-	-	60.5	E
6	Kelly Street/ Maud Avenue	Signalized	22.4	C	11.6	B	10.5	B	23.3	C	14.5	B	15.5	B
7	Kelly Street / Center Street – B Street	Signalized	28.5	C	-	-	23.0	C	33.2	C	-	-	23.3	C

Notes: Delay = Average Delay in seconds per vehicle

LOS = Level of Service

The delay and LOS at the all-way stop controlled intersection are for the overall intersection performance.

The delay and LOS at intersections with stop or yield control on the minor approaches are for the worst-case minor approach.

The delay and LOS at the signalized intersection and roundabout represent overall intersection performance.

Overall, during peak hours the Project would add, on average, approximately 1 trip every 2 minutes to the local roadway network, and those trips are dispersed via multiple routes. The effect on average delay for all intersection movements is therefore minimal, and the Project's impact related to intersection delay would be less than significant.

#### Mitigation Measures

None needed.

#### **Cumulative Intersection Level of Service – Future Baseline plus Project Conditions**

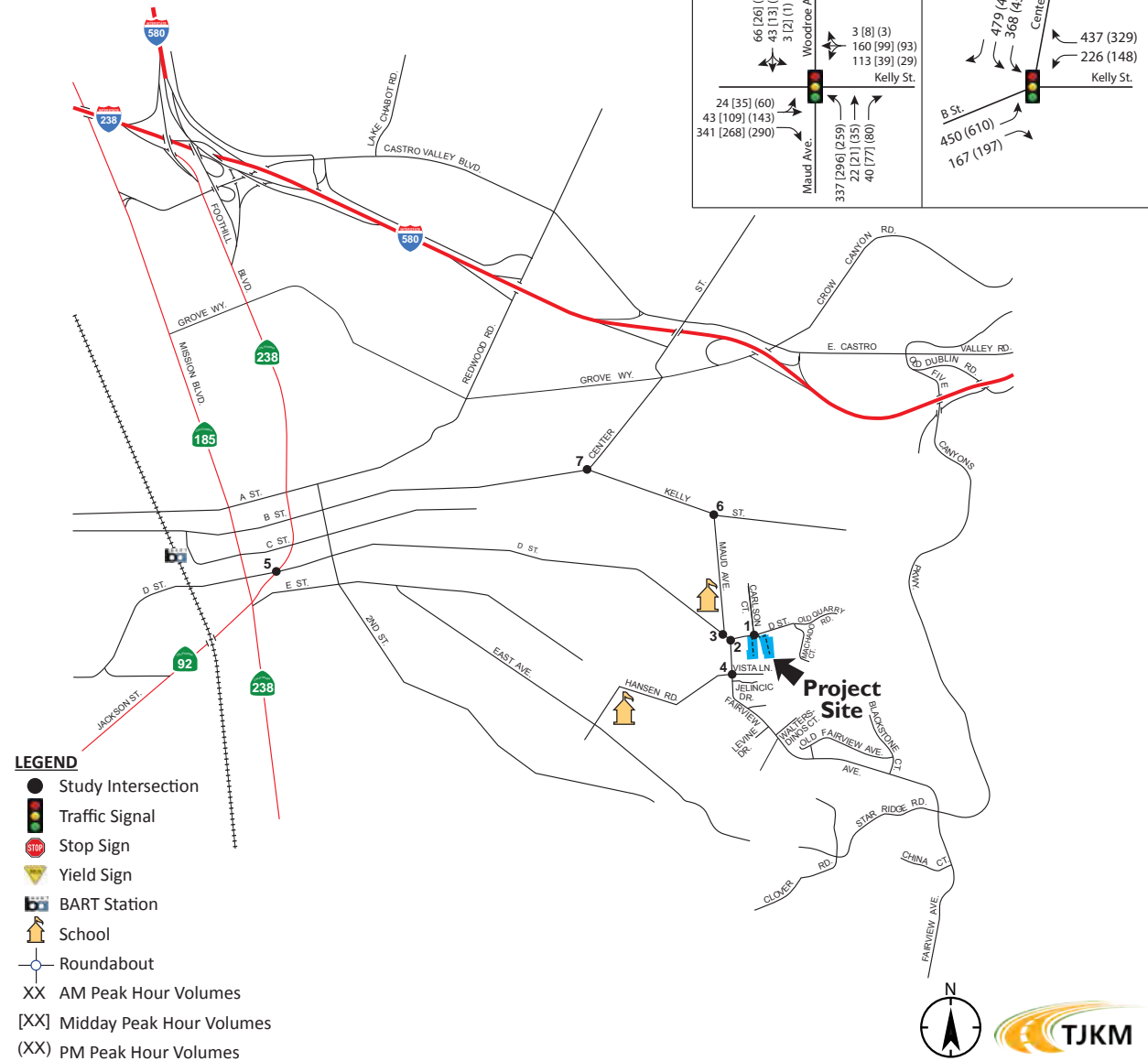
**Transp-2: Cumulative Traffic Impacts.** Traffic generated by the Project, when added to other cumulative traffic levels at Project study intersections, would not change level of service under Cumulative Baseline conditions at any studied intersections. **(LTS)**

This scenario is based on the Future Baseline or cumulative conditions (with buildout of all anticipated development in the Project vicinity as listed in **Table 11.4**), with the addition of expected vehicle trips from the Project. The same trip distribution and assignment for the Project is assumed under Cumulative plus Project conditions as under Existing plus Project conditions. The assigned Project trips were added to traffic volumes under the Cumulative Baseline conditions to generate Cumulative plus Project conditions. The resulting traffic volumes at the study intersections under Cumulative plus Project Conditions are shown in **Figure 11.6**.

- Near the Project site, the stop-controlled intersections along D Street at Carlson Court, Fairview Avenue and Maud Avenue (Intersections 1, 2 and 3) would remain at LOS A, B and B respectively, under both Cumulative Baseline and Cumulative plus Project conditions. As indicated in Table 11.9, the effect of the Project on the “worst approach” is less than 3 seconds at all such locations.
- The roundabout intersection at Fairview and Hansen Road (Intersection 4) would remain at acceptable LOS A conditions under all scenarios.
- The LOS at the intersection of D Street and Foothill Boulevard (Intersection 5) is expected to remain at LOS D during the A.M. peak hour at over-threshold levels (LOS E) during the P.M. peak hour under Cumulative baseline conditions. The addition of Project traffic to this cumulative condition would not change the operating LOS during either the A.M. or P.M. peak hour, and the net change in average delay during the P.M. peak hour (during which the intersection operates at over-threshold levels at LOS E) with the addition of Project trips would be less than one second (i.e., less than the threshold of adding 5 or more seconds of delay to any intersection).
- At the signalized intersection at Kelly Street and Maud Avenue (Intersection 6), the Project’s traffic would add less than 2 seconds of delay to the Cumulative condition during the A.M. and P.M. peak hour and less than 1 second of delay during the afternoon school peak hour, but the overall intersection LOS C and B under Cumulative Baseline conditions would remain unchanged.
- Similarly, at the signalized intersection at Kelly Street and Center Street/B Street (Intersection 7), the addition of Project generated traffic would add less than 4 seconds of delay during the peak hours, and the overall intersection LOS C condition under Cumulative baseline conditions would remain unchanged.

**Table 11.10** presents a summary of the peak hour level of service analysis for all study intersections under Cumulative plus Project conditions, i.e., with the Project fully constructed and occupied.

Intersection #1 D St./ Carlson Ct.	Intersection #2 D St./ Fairview Ave.	Intersection #3 D St./ Maud Ave.	Intersection #4 Fairview Ave./ Hansen Rd./Vista Ln.	Intersection #5 D St./ Foothill Blvd.
<p>Carlson Ct. (Northbound): 6 (4) AM, 0 (0) Midday, 2 (0) PM  D St. (Eastbound): 2 (5) AM, 29 (91) Midday, 3 (10) PM  Proposed West St. (Southbound): 17 (11) AM, 0 (0) Midday, 0 (0) PM  D St. (Westbound): 0 (1) AM, 103 (59) Midday, 0 (0) PM</p>	<p>D St. (Northbound): 88 (69) AM, 31 (15) PM  D St. (Southbound): 7 (22) AM, 315 (212) Midday  Fairview Ave. (Eastbound): 30 (84) AM, 251 (285) PM</p>	<p>D St. (Northbound): 198 (110) AM, 188 (226) PM  D St. (Southbound): 158 (157) AM, 92 (148) PM  Maud Ave. (Eastbound): 215 (182) AM, 182 (101) PM</p>	<p>Hansen Rd. (Northbound): 158 (114) AM, 112 (186) Midday, 10 (11) PM  Fairview Ave. (Southbound): 11 (4) AM, 1 (1) Midday, 0 (0) PM  Vista Ln. (Eastbound): 124 (111) AM, 0 (0) Midday, 31 (29) PM  Fairview Ave. (Westbound): 39 (42) AM, 192 (125) Midday, 2 (1) PM</p>	<p>D St. (Northbound): 117 (80) AM, 1,020 (595) Midday  D St. (Southbound): 295 (716) AM, 350 (453) PM  Foothill Blvd. (Eastbound): 2,694 (3,520) AM, 101 (125) PM</p>
			Intersection #6 Kelly St./ Maud Ave.	Intersection #7 Kelly St./B St./ Center St.
			<p>Woodroe Ave. (Northbound): 66 (26) (45) AM, 45 (131) (111) Midday, 3 (2) (1) PM  Kelly St. (Southbound): 3 (8) (3) AM, 160 (99) (93) Midday, 113 (39) (29) PM  Maud Ave. (Eastbound): 24 (35) (60) AM, 43 (109) (143) Midday, 341 (268) (290) PM  Maud Ave. (Westbound): 337 (296) (259) AM, 22 (21) (35) Midday, 40 (77) (80) PM</p>	<p>Center St. (Northbound): 479 (431) AM, 368 (458) PM  Center St. (Southbound): 437 (329) AM, 226 (148) PM  B St. (Eastbound): 450 (610) AM, 167 (197) PM</p>



**Figure 11-6**  
**Cumulative plus Project Traffic Volumes, Lane Ge-**  
**ometry, and Traffic Controls**

Source: TJKM

**Table 11.10: Peak Hour Intersection Level of Service –Cumulative Baseline plus Project Conditions**

ID	Intersection	Control	Future Baseline Conditions						Future plus Project Conditions					
			A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour		A.M. Peak Hour		Afternoon School Peak Hour		P.M. Peak Hour	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	D Street / Carlson Court	Minor Street Approach Stop	9.4	A	-	-	8.8	A	10.3	A	-	-	10.2	A
2	Fairview Avenue / D Street	Minor Street Approach Stop	13.2	B	-	-	12.1	B	13.8	B	-	-	12.4	B
3	D Street / Maud Avenue	All-Way Stop	21.1	B	-	-	15.2	B	22.6	B	-	-	18.0	B
4	Fairview Avenue / Hansen Road	Roundabout	6.6	A	-	-	6.5	A	6.5	A	-	-	6.5	A
5	D Street / Foothill Boulevard	Signalized	49.9	D	-	-	62.8	E	49.9	D	-	-	63.6	E
6	Kelly Street/ Maud Avenue	Signalized	29.9	C	11.0	B	11.3	B	31.2	C	11.5	B	11.4	B
7	Kelly Street / Center Street – B Street	Signalized	38.7	D	-	-	24.7	C	40.0	D	-	-	28.3	C

Notes: Delay = Average Delay in seconds per vehicle

LOS = Level of Service

The delay and LOS at the all-way stop controlled intersection are for the overall intersection performance.

The delay and LOS at intersections with stop or yield control on the minor approaches are for the worst-case minor approach.

The delay and LOS at the signalized intersection and roundabout are for the overall intersection performance.

### Mitigation Measures

None needed.

### **Freeways and Arterials**

**Transp-3: Freeways and Arterials.** The Project would not conflict with an applicable congestion management program, a level of service standards, travel demand measures or other standards established by the County Congestion Management Agency for designated roads or highways. **(LTS)**

Analysis under Alameda County's Congestion Management Program (CMP) is required for projects that generate 100 or more P.M. peak hour trips. The Project is calculated to generate no more than 31 P.M. peak hour trips, and therefore does not require a CMP traffic analysis.

The Project's trip distribution assumptions are based on existing turning movement counts from similar residential development in the surrounding area, and indicate that only about 41% to 52% of residential

trips in the area travel directly to/from I-580 via Maud and Kelly Avenues. This may be explained by various factors including: 1) large job centers are located to the south and southwest, away from I-580; 2) travelers to/from job centers in the north such as Oakland or San Francisco are more likely to take BART and thus avoid I-580; 3) congestion on I-580 may be diverting some trips to other routes (perhaps via Foothill or Mission); 4) many commuters access the north-south I-880 via D Street, Jackson, and even East Avenue, and 5) many non-work trips occur during the peak hours (as many as 50% non-work trips occur during the PM peak) and non-work trips are more likely to avoid regional congestion on I-580. Nonetheless, even if all 31 peak-hour trips generated by the Project were to travel on I-580 during the peak hours, the Project's contribution to freeway congestion would be virtually unnoticeable given that I-580 carries over 15,000 peak hour trips.

### **Hazards Due to Design Features or Incompatible Uses**

**Transp-4: Site Hazards.** The Project's proposed site access and roadway configuration is adequate to accommodate the anticipated volume of traffic to and from the Project sites without resulting in a significant traffic hazard (**LTS**).

#### *Access*

Access to the Project site will be from D Street via two proposed local streets, one local street for Tract #8296 and one for Tract #8297. **Figure 11.7** shows the proposed site access configuration for both Tracts. As proposed, the two local access streets that will serve Tracts #8296 and #8297 will intersect D Street at locations approximately 130 feet apart, and near the current intersection of D Street/Carlson Court. The proposed Tract #8296 local street (described on Figure 11.7 as "Proposed West Street") will intersect D Street immediately west of the intersection of D Street/Carlson Court. The easternmost corner of the Tract #8296 local street would roughly align with the westernmost corner of Carlson Court at D Street. The northbound/southbound motor vehicle lanes on the Tract #8296 local access will be offset by approximately 50 feet west from the northbound/southbound travel lanes on Carlson Court. The proposed Tract #8297 local street (described below as "Proposed East Street") will intersect D Street approximately 70 feet east of the easternmost corner at the intersection of D Street/Carlson Court, where an existing driveway currently provides access to Tract #8297 and the adjacent care facility that occupies the wedge shaped parcel between Tracts #8296 and #8297.

The Project will result in a total of three intersections with local side streets intersecting D Street within approximately 130 feet of each other, including the existing D Street/Carlson Court intersection and the two proposed local access streets to serve the Project. Such a configuration, where northbound and southbound lanes to/from D Street will be offset, would be undesirable if a high volume of conflicting turning movements was anticipated. However, traffic volumes on this segment of D Street (east of Fairview Avenue and Maud Avenue) are relatively low, with less than 170 peak hour vehicles in total, in both directions on D Street (including under Cumulative plus Project conditions).



**Figure 11-7**  
Site Access



The left turn volumes from D Street to each of the three side streets will also be very low, summarized as follows:

- Just two peak hour left turns currently occur on average from D Street to Carlson Court during the A.M. peak hour, and just five peak hour left turns from D Street to Carlson Court during the P.M. peak hour.
- Carlson Court carries very low traffic volumes (less than 10 peak hour trips total, in both directions) and traffic volumes on Carlson Court are not anticipated to increase measurably under future Cumulative conditions since Carlson Court is already developed and provides no outlet to other streets.
- Each of the local access streets into the Project will also have very low volumes, as the Project is anticipated to generate no more than 23 A.M. and 31 P.M. peak hour vehicle trips, which would be divided about equally into each of the two new access streets.

However, EIR scoping comments have expressed concern that the hill on D Street at the Project's access streets, compounded by the narrow paved width of D Street (about 30 feet or less of pavement out of the total 50-foot right-of-way), that may represent a transportation hazard due to inadequate sight distance and safe maneuverability. The site access issue is compounded by the potential effects of off-street parking, especially by potentially large vehicles, along the D Street frontage.

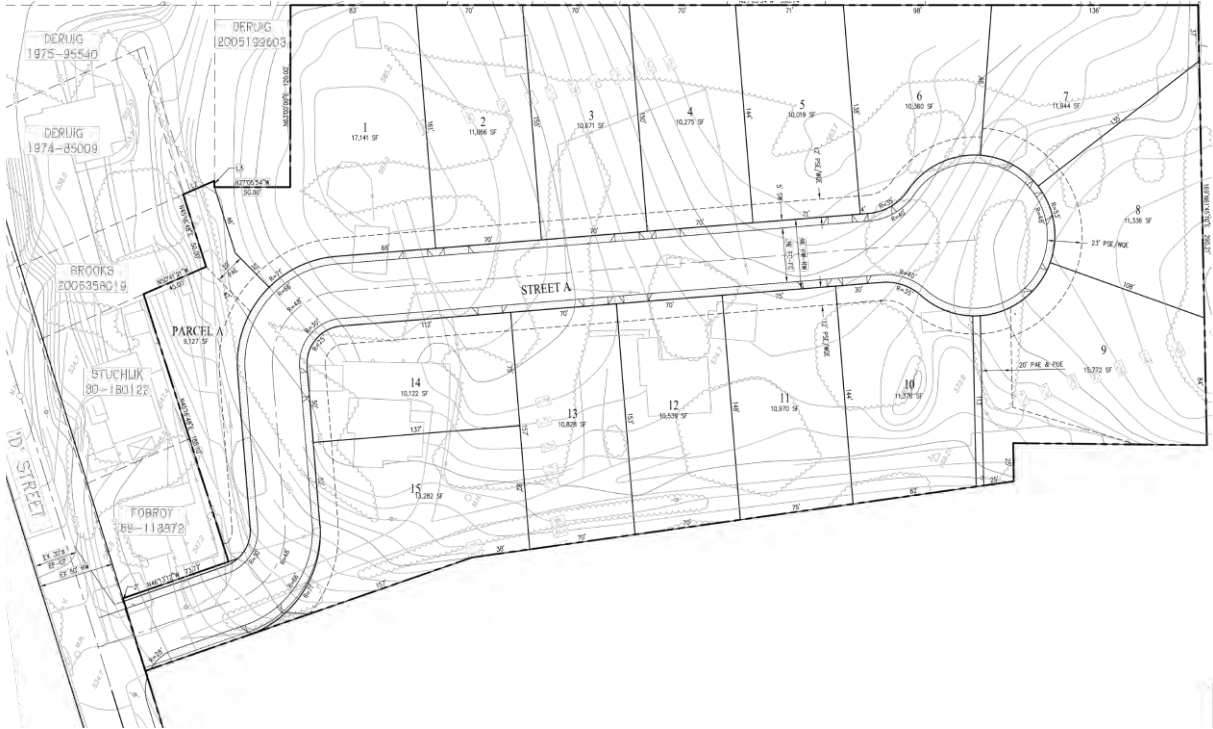
Under existing conditions, on-street parking on D Street primarily occurs on those segments of D Street where individual residences have direct frontage and access onto D Street. The Project would remove two existing residences that front D Street, thereby also eliminating the demand or need for on-street parking along that segment. The Project's new residences will front onto the Project's new internal streets, which will have adequate on-street parking available for the new residents. Under future Project conditions, sight distances approaching both Project entrances will be similar to the sight distance approaching the existing intersection of D Street/Carlson Court, with the primary limitation to sight distance from the Project's streets being in the downhill westbound direction, immediately east of Carlson Court approaching D Street.

Given the low volume of potentially conflicting traffic movements, the Project's proposed site access configuration is not anticipated to result in a significant volume of conflicting movements and the proposed site access configuration, including sight distance, is adequate to safely accommodate the anticipated volume of trips to and from the Project site, as well as existing and cumulative traffic on the nearby roadways. The proposed offset intersection configurations would not substantially increase hazards or result in significant impacts related to site access. However, on-street parking between the two Project streets could obscure safe turning movements, and the transportation technical consultant therefore recommends that in order to improve sight distance safety from the Project sites, on-street parking on the south side of D Street should be prohibited for a distance of a little over 300 feet, from approximately 30 feet east of the Tract 8297 intersection to 30 feet west of the Tract 8296 intersection.

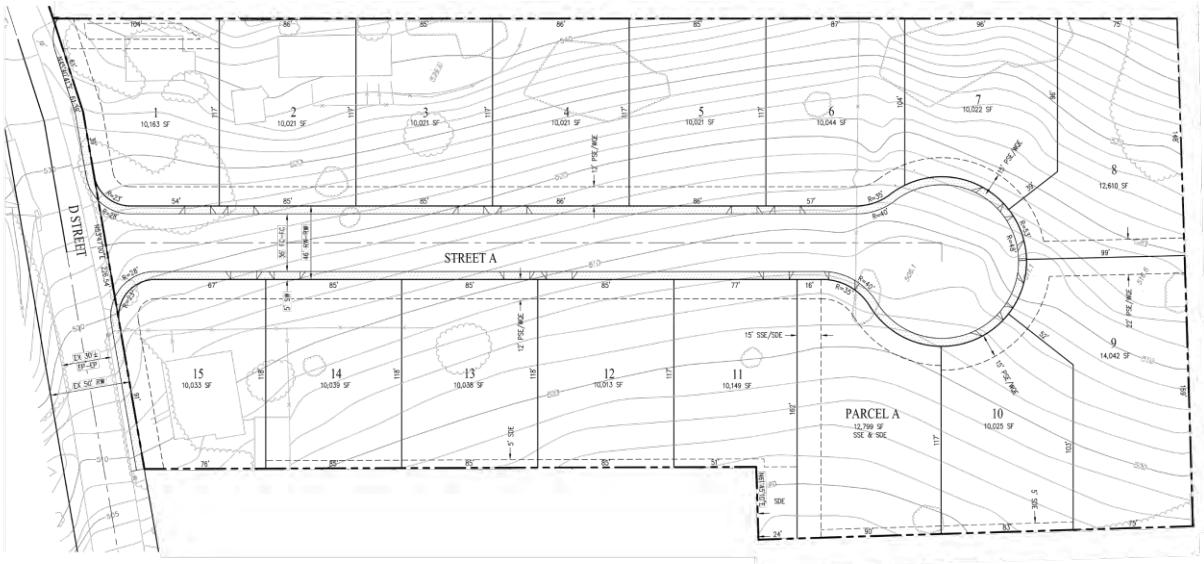
#### *Site Circulation*

The EIR transportation consultants also reviewed the Project's site plan to also assess the adequacy of proposed internal site circulation. **Figure 11.8** shows the proposed on-site street configuration for Tract #8297 and Tract #8296. Both streets have a 46 foot right-of-way width to include a 36 foot wide roadway with 5 foot sidewalks on both sides and no landscape strip between the sidewalks and roadway. The proposed internal roadway widths would allow for on-street motor vehicle parking on both sides. Both streets end in cul-de-sacs with standard turning radii.





Proposed Street Design (Tract #8297)



Proposed Street Design (Tract #8296)

**Figure 11-8**  
**Street Designs**



Source: Carlson, Barbie and Gibson

The proposed streets are adequate to accommodate general on-site motor vehicles, bicycle and pedestrian circulation, and will adequately accommodate on-site circulation and turnarounds for emergency vehicles. Therefore, the proposed on-site circulation would not substantially increase hazards or result in significant impacts related to site circulation.

#### *Emergency Vehicle Access*

Emergency vehicles will be able to adequately access the Project site from D Street. Emergency vehicle access to this segment of D Street is primarily from the west, via the D Street/Fairview Avenue intersection. Secondary emergency access to this segment of D Street can be provided via Thurston Court, which intersects D Street east of the Project site and connects with those local streets to the northeast that allow for emergency only vehicle access to/from Kelly Street.

#### Mitigation Measures

None needed. The Project's proposed design, including its proposed access roads, is not a significant hazard constituting a CEQA impact, particularly given the low volume of cross traffic on this essentially dead-end segment of D Street.

However, the following recommendation of the technical transportation consultant suggests consideration of a design measure to enhance the sight distance for vehicles exiting the Project sites:

**Recommendation: Parking Restrictions.** To enhance sight distance on D Street near the Project entrances, on-street parking on the south side of D Street should be prohibited for a distance of more than 300 feet, from approximately 30 feet east of the Tract 8297 intersection to 30 feet west of the Tract 8296 intersection.

#### *Other Considerations*

As described above, the Project's two proposed local streets will intersect D Street at locations that are only approximately 130 feet apart, and offset by approximately 50 feet to the west and 70 feet to the east of the existing intersection of D Street/Carlson Court. This off-set is a less than optimal "best practices" street design, but is not considered a hazard because of the low volume of cross traffic. Under a more ideal design, the westerly street in Tract 8296 would be re-aligned approximately 60 feet to the east to allow for a standard four-leg intersection with D Street/Carlson Court, with an internal roadway that would split to connect between the two Project sites.

However, because the two Project sites are separated by another private property (the separate Hilltop Care facility parcel) not under control by the Project applicant, there is no feasible opportunity for the Project to independently design and build a road crossing the privately owned Hilltop Care parcel. Even if an internal roadway connection between the two Project sites could be achieved, that connection would need to be placed far into the Hilltop Care parcel to allow for an internal, best engineering practice designed "T" intersection capable of accommodating all on-site turning movements and provide adequate stacking and turning distance for access/egress off of D Street. Such an alternative roadway design would need to use most, if not all of the Hilltop Care facility's existing parking area. An alternative "best practices" street design is therefore not considered feasible given the Project sites' limited frontage along D Street, and the presence of an existing use on the intervening private property between the two Project sites.

## Conflicts with Pedestrian or Bicycle Policies or Programs

**Transp-5: Pedestrian Impacts.** The Project will increase levels of pedestrian and bicycle use in the vicinity. However, the Project would not conflict with adopted policies, plans, or programs regarding pedestrian or bicycle facilities, or otherwise decrease the performance or safety of such facilities within the study area **(LTS)**.

### *Bicycles*

There are no existing Class I off-street or Class II on-street bicycle facilities within the immediate study area. Under existing and future conditions, bicyclists would continue to share the road with other vehicles. Current bicycle use (as counted at the study intersections) amounts to approximately five bicycles per A.M. and P.M. peak hour. There is limited potential for increased bicycle use, given the low density development pattern in the study area, the hilly terrain and other factors. The Project is expected to generate minimal additional bicycle trips.

The Project does not conflict with adopted policies, plans, or programs regarding bicycle facilities, or otherwise decrease the performance or safety of such facilities within the study area. Therefore, the Project's impact on such facilities would be less than significant.

### *Pedestrian Facilities*

The Project provides internal five foot wide sidewalks on each of the proposed internal local streets connecting to D Street. There are no existing sidewalks on the segment of D Street east of Fairview Avenue that borders the Project site. Sidewalks do exist in various levels of improvement on the frontage of most properties along D Street west of the site (towards Fairview Avenue), primarily on the same (south side) as the Project and in the public right-of-way. Current pedestrian activity (as counted at the study intersections) amounts to no more than approximately seven pedestrians per peak hour except on Kelly Street, where volumes reach 30 pedestrians per hour at the Kelly Street/Maud Avenue intersection (likely reflecting school-related pedestrian trips), and up 12 pedestrians per hour at the Kelly Street/B Street-Center Street intersection. There is limited potential for increased pedestrian activity given the low density development pattern in the study area. The Project is expected to generate minimal additional pedestrian trips.

The Project does not include pedestrian connections to nearby local streets that could improve pedestrian connectivity and allow for more direct walking routes to/from local schools, or to transit stops (the nearest of which is on Maud Avenue approximately 300 feet northwest of the D Street intersection with Fairview Avenue). Although the Project would not provide direct pedestrian connections between local streets, the Project does not conflict with adopted policies, plans or programs regarding pedestrian facilities, or otherwise decrease the performance or safety of such facilities within the study area. Therefore, the Project's impact related to conflict with plans and policies for pedestrian facilities would be less than significant.

### Mitigation Measures

None needed. This impact is less than significant and no mitigation is required under CEQA. However, the following recommendations from the transportation technical consultant could be incorporated into the site plan or Project conditions of approval to improve pedestrian circulation and safety:

**Recommendation: Sidewalk Bulbouts.** Consider providing "bulbouts" to reduce the curb-to-curb roadway width to 24 feet at the intersections of the Project's proposed internal access streets with D Street. Such a reduction in width on the northernmost 10 to 20 feet of both

local access streets would allow for a reduction in pedestrian crossing distances for pedestrians traveling east or west on D Street.

## Transit Impacts

**Transp-6: Transit Impacts.** The Project may increase levels of transit usage in the vicinity. However, the Project has adequate access to existing transit services and would not impede or interfere with existing services. **(LTS)**

The Project's proposed residential uses are within approximately 1/8 mile of existing bus stops at Maud and D Streets, served by AC Transit Route 95 with service to the Hayward BART Station. In addition, the proposed residences are about three miles from the Castro Valley BART station.

"Load factors" are used to describe passenger congestion, with a load factor of 1.0 equating to every seat being full. Current weekday commute load factors on AC Transit Route 95 average less than 1.0, meaning seats would be available on buses for potential Project transit riders (typical for Bay Area suburban bus routes). Weekday commute loads on BART, particularly San Francisco bound trains, often exceed load factors of 1.0 (meaning standing passenger loads). Conservatively assuming that 5% of trips from the Project use transit, this would translate to roughly two transit trips during both the weekday morning and afternoon peak periods. These small numbers of potential transit riders represent a very small fraction of available bus and rail capacity, and the Project impacts would not be significant.

The Project would not impede or interfere with existing transit services and would not generate a substantial increase in local transit demand. Its impact on alternative modes of travel would be less-than-significant.

### Mitigation Measures

None needed.

## Construction-Period Traffic Disruption

**Transp-7: Construction-Period Traffic Disruption.** Construction-related activity at the Project sites could result in temporary and periodic traffic disruption and interruption, depending on construction phasing and truck activity. **(LTS with Mitigation)**

Construction-related impacts resulting from daily trips generally would not be considered significant due to their temporary and limited duration. However, depending on the construction phasing and truck activity, these activities could result in significant traffic interruption. During construction of the Project, temporary and intermittent transportation impacts may result from truck movements as well as construction worker vehicles travelling to and from the construction site. Construction-related traffic would include construction workers, delivery of supplies and materials, and the movement of construction equipment to and from the site. This construction-related traffic may temporarily disrupt traffic in the vicinity because of the slower movements and larger turning radii of construction trucks compared to passenger vehicles. It is expected that construction worker parking and construction staging would be accommodated within the Project site, and is not expected to spill over into the adjacent neighborhoods.

### Mitigation Measures

**Mitigation Measure Transportation-7: County Review of Construction Plan.** The Project applicant shall prepare a Construction Operations Plan detailing the anticipated schedule of trips involving

construction workers and equipment, and delivery of materials and supplies to and from the Project site during the various stages of construction activity. The Plan will be reviewed by the County of Alameda for compliance with applicable regulations.

### Resulting Level of Significance

Implementation of Mitigation Measure Transportation-7 would reduce the Project's potential impact related to construction period traffic disruption to a less than significant level.

### **Alter Air Traffic Patterns**

The Project does not represent a level of population or housing growth that would require any change to existing air transportation services, and would have no impact on air traffic patterns, including the location of airports or flight paths as they relate to air traffic safety. **(No Impact)**

### **Parking Conditions (Non-CEQA Considerations)**

Parking is not a CEQA-related impact and no CEQA thresholds for parking are established. The following discussion regarding parking is included for public and County decision makers' information, only.

Each single family residence in the Project will have at least two off-street motor vehicle parking spaces, as required by Chapter 17 of the Alameda County General Ordinance Code. In addition, the Project's proposed local access streets have a curb-to-curb width of 36 feet, wide enough to accommodate on-street parking on both sides of each local access street segment. Based on the site plan, the on-street parking will equate to an additional one to two parking spaces per dwelling unit, and the total parking supply (including both on-street and off-street parking) will exceed an average of three parking spaces per unit. Visiting guests may also use garage aprons if needed, further increasing the supply of parking.

Although the new street for Tract 8296 would eliminate between two and four on-street parking spaces on D Street, the Project would remove the two existing residences that front onto D Street, thereby also eliminating the demand or need for these on-street parking spaces on D Street. The new homes would front onto the new public streets and would have adequate on-street parking available on the new street. However, as noted above, because on-street parking between the two Project streets could obscure safe turning movements, the transportation technical consultant has recommended that on-street parking on the south side of D Street be prohibited for a distance of more than 300 feet in order to improve sight distance safety from the Project sites, from a point approximately 30 feet east of the Tract 8297 intersection to about 30 feet west of the Tract 8296 intersection.



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## Utilities

This Chapter describes existing public utilities and evaluates the impact of the Project on the provision of public utilities with possible adverse physical impacts to the environment. Specific topics addressed in this chapter include water supply and wastewater disposal structures (e.g., water supply pipes, sewer lines and treatment plants), storm water management facilities (publicly- and privately-held, including natural and improved flood-control channels, reservoirs, pipes and treatment components) and solid waste services and disposal or management facilities. This chapter also briefly addresses a range of additional public and quasi-public services providing important utility functions including electrical power lines and energy supply and management systems, gas lines, and telecommunication services (e.g., telephone, cable television, internet and other media services).<sup>1</sup>

### Environmental Setting

#### Domestic Water Supply

##### Water Supply

Water service to the Fairview Area of Alameda County and to the City of Hayward is provided by the East Bay Municipal Utility District (EBMUD). EBMUD is responsible for service connections and water delivery to most of Alameda County and much of Contra Costa County.

The County and EBMUD have undertaken programs to conserve water and reduce the need for developing new water supplies. These programs include public education and information, economic and financial incentives and a variety of best management practices (BMPs) such as water saving plumbing fixtures and drought tolerant landscaping. Using reclaimed water in lieu of potable water for irrigation, particularly at local golf courses, is an important part of the conservation program.

EBMUD provides comprehensive water services, including production, conveyance, treatment and retail services, as well as water recycling. EBMUD's primary water source is Mokelumne River runoff, which is collected in Calaveras and Amador counties and conveyed through an aqueduct into Alameda County. EBMUD treats water from the Mokelumne River watershed and distributes it directly to customers throughout its service area. The primary EBMUD treatment facility serving Alameda County is the Orinda water treatment plant. The plant is the largest in the area with a capacity of 175 million gallons per day (mgd), and was most recently rebuilt in 1998.

EBMUD provides potable water to approximately 1,300,000 people throughout portions of Alameda and Contra Costa counties. In 2009, EBMUD adopted a long-term Water Supply Management Program (WSMP) that serves as a water supply planning guide through year 2040. The WSMP is a complex planning document that EBMUD uses to assess supplies and analyze demands over a thirty-year planning horizon.

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<sup>1</sup> These later topics are not specifically identified in the Environmental Checklist included in the CEQA Guidelines as Appendix G.

### Water Distribution System

EBMUD distributes its water through a system of pipelines, storage reservoirs and pumping plants separated into pressure zones. EBMUD operates and maintains all water distribution lines within its service area and is responsible for all facilities up to the location of the water meter. EBMUD reports no known deficiencies in the system within the vicinity of the Project site.

## **Wastewater Collection, Treatment and Disposal**

### Collection

The Oro Loma Sanitary District (OLSD) provides wastewater collection and treatment services, whereas the ultimate disposal of treated wastewater is provided by the East Bay Dischargers Authority (EBDA). EBDA is a consortium of public wastewater agencies who participate jointly in a common discharge system that conveys treated wastewater to the outfall in San Francisco Bay under appropriate discharge permits issued by the Regional Water Quality Control Board.

OLSD was formed in 1911 and today provides wastewater collection and treatment services for 44,000 customers within its 13–square-mile service area. The OLSD system includes 280 miles of sewer pipeline and 15 lift stations. The OLSD wastewater service area includes parts of San Leandro, Hayward and the unincorporated areas of San Lorenzo, Cherryland, Ashland, and Fairview. OLSD serves a population of approximately 112,000 and owns and maintains approximately 300 miles of sewer lines; average daily wastewater flows are 14.3 million gallons per day (mgd). OLSD projects that population growth in the area will increase average flows to 15.4 mgd by year 2020).<sup>2</sup>

### Wastewater Treatment and Disposal

OLSD owns and operates a wastewater treatment plant with an average dry weather design capacity of 20 mgd; the plant currently treats about 15mgd, including flow from the Castro Valley Sanitary District. Treated effluent is disposed to the deep waters of San Francisco Bay through the collectively owned East Bay Dischargers Authority pipeline. The treatment plant also produces about 14 tons of bio-solids per day. OLSD has a Renewal and Replacement Program that covers ongoing repair and replacement of system components. Revenues for this program are generated through sewer connection fees and user fees.

## **Storm Drainage**

Storm water collection and conveyance services are provided by the Alameda County Flood Control and Water Conservation District (ACFCD). ACFCD's flood control system is an integrated part of local storm-water systems, which are built and managed by the cities and the County, and function in tandem with the overall ACFCD system. Storm water systems drain in various fashions, in some cases directly into improved ACFCD channels (lined or covered, such as concrete box culverts) and in other cases through local creeks. Stormwater facilities near the Project site drain into either Sulphur Creek or San Leandro Creek (as described in detail in Chapter 8, Hydrology and Water Quality). These two creeks merge farther to the west as San Leandro Creek, which continues westerly until eventually reaching San Francisco Bay. ACFCD provides flood control service in the County, including the Fairview area.

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<sup>2</sup> Burr Consulting, with CDM, Braitman & Associates and P&D Consultants, *Final Municipal Service Review, Volume II – Utility Services*, Report to the Alameda Local Agency Formation Commission, November 10, 2005.



## Solid Waste

OLSD provides solid waste collection services to the unincorporated area of Fairview. OLSD carries out its responsibilities through a franchise agreement with Waste Management, Inc. of Alameda County, whose personnel provide the solid waste collection services. Solid waste is disposed of at the Altamont Landfill.

## Regulatory Setting

### Federal

#### Clean Water Act and Safe Drinking Water Act

The Safe Drinking Water Act (42 United States Code [USC] §§ 300f *et seq.*) is the primary federal law regulating drinking water quality; it establishes standards intended to protect public health, safety and welfare. The U.S. EPA implements the Safe Drinking Water Act, which delegates its authority under the Act to the states.

The Clean Water Act (33 USC §§ 1251 *et seq.*) is intended to restore and maintain the integrity of the nation's waters, including requirements for states to establish water quality standards to protect designated uses for all waters of the nation. Many aspects of the Clean Water Act have been delegated to the states, including the regulation of discharges from private industry and public facilities such as wastewater treatment plants.

### State

#### Water Supply

The California Urban Water Management Planning Act<sup>3</sup> requires that an understanding of urban water demands and efficient use of water be actively pursued by water suppliers, including the requirement for every urban water supplier to prepare and adopt an urban water management plan. Each urban water management plan must describe the suppliers' services area; identify and quantify existing and planned water sources; describe the reliability of water supplies; describe opportunities for exchanges or transfers of water; quantify past, current and projected water use; and describe and evaluate the supplier's water demand management measures. These plans are updated every five years.

CEQA also requires that projects of a certain magnitude provide an assessment of water supply. For a residential project, the size at which a Water Supply Assessment is required is 500 units.<sup>4</sup> The Project is well below this size, therefore a Water Supply Assessment has not been requested for this Project.

The Recycled Water in Landscaping Act requires municipalities to adopt ordinances requiring use of recycled water for landscaping uses where recycled water of appropriate quality is made available. The County of Alameda has adopted the State's model Water Efficient Landscape Ordinance (WELO), including changes enacted in 2015, which requires development with more than 500 square feet of new or replacement landscaping to meet specific landscaping standards. The landscaping package for the Project must demonstrate that its water demand does not exceed a set maximum water allowance, based on its total area and climate setting.

<sup>3</sup> Division 6, Part 2.6 of the California Water Code.

<sup>4</sup> Section 10912, of the California Water Code.

The Department of Health Services regulates drinking water, implements the Safe Drinking Water Act and oversees public water systems in California. The state requires that public water systems meet two groups of water quality standards: primary and secondary drinking water standards. Primary drinking water standards, known as Maximum Contaminant Levels, are legally enforceable standards that regulate contaminants that could threaten public health. Secondary drinking water standards are used to regulate contaminants that affect the taste, odor and appearance of water, and are enforceable for new potable water sources.

The State Water Resources Control Board (SWRCB) has established water quality objectives to define the level of water quality to be maintained for designated beneficial uses. Water designated for uses as domestic or municipal supply shall not contain concentrations of constituents in excess of the limits specified in Title 22 of the California Code of Regulations (CCR).

### Storm Water Drainage

#### *Municipal Regional Stormwater NPDES Permit/C.3 Requirement*

The regional office of the SWRCB, the San Francisco Bay Regional Water Quality Control Board (RWQCB) also has issued a Municipal Regional Stormwater NPDES Permit (MRP, Permit Number CAS612008). In an effort to standardize stormwater management requirements throughout the region, this permit replaces the formerly separate countywide municipal stormwater permits with a regional permit for 77 Bay Area municipalities. Under provisions of the NPDES Municipal Permit, projects that disturb more than 10,000 square feet are required to design and construct stormwater treatment controls to treat post-construction stormwater runoff. Amendments to the MRP require all of the post-construction runoff to be treated by using low impact development treatment controls, such as bio-treatment facilities.

### Telecommunications and Power

The California Public Utilities Commission regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies.

#### *Energy*

The CPUC's energy regulatory responsibilities include, but are not limited to, ensuring electric, natural gas, and propane gas system safety and energy reliability; and setting electricity and natural gas retail rates and overseeing low income consumer programs;

#### *Transportation*

The CPUC's transportation responsibilities include, but are not limited to, safety jurisdiction over the rail system and all rail crossings, including freight railroads, inter-city passenger railroads, commuter railroads, and rail transit systems;

#### *Communications*

The CPUC's telecommunications responsibilities include, but are not limited to, administering Universal Telephone Service programs; issuing video franchises; regulating rates for basic phone service and rural carriers; and licensing wireline, wireless, two-way paging, cable telephony, and mobile radio providers serving residential and business customers; and,

## Water

The CPUC's responsibilities in water include, but are not limited to, investigating water and sewer system service quality issues; analyzing and processing rate change requests; and tracking and certifying compliance with CPUC requirements.

## Impacts and Mitigation Measures

The following section describes potentially significant Project impacts to Utilities. Mitigation recommendations are made to avoid, minimize or mitigate such impacts where necessary and feasible.

### Significance Criteria

The Project would have a significant environmental impact if it would:

1. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board.
2. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
3. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
4. Have insufficient water supplies available to serve the Project from existing entitlements and resources, or if new or expanded entitlements are needed.
5. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has inadequate capacity to serve the Project's projected demand in addition to the provider's existing commitments.
6. Be served by a landfill with insufficient permitted capacity to accommodate the Project's solid waste disposal needs.
7. Fail to comply with federal, state, and local statutes and regulations related to solid waste.

## Water Supply

**Utilities-1: Water Supply.** There are sufficient water supplies available to serve the Project from existing entitlements and resources, and no new or expanded entitlements are needed to serve the Project. **(LTS)**

The Project will result in an increased water demand within the existing service area of EBMUD. The Project would utilize existing water facilities and resources of EBMUD, and would not result in the need for new off-site facilities. EBMUD has determined that the anticipated additional demand of cumulative development within its service area (as estimated based on all local General Plan buildout calculations, including that of unincorporated Alameda County) can be met, assuming implementation of EBMUD's water conservation measures. Water conservation measures are required of any new development and would be part of the overall Project requirements. EBMUD has indicated that with conservation and water reclamation programs and requirements currently in place (e.g., WELO as described above, and state building code, described below), it can meet its obligation to serve its current and future customers in normal rainfall years. The Project's contribution toward overall water demand is an insignificant component of this total.

The Project will be required to demonstrate compliance with the State of California Green Building Code (CalGreen), which will substantially reduce projected water demands associated with the Project as compared to pre-CalGreen water demand estimates. Additionally, the Project will be required to pay appropriate development impact and utility connection fees toward ongoing improvement and maintenance of water systems, and will be conditioned to comply with all other applicable regulations, restrictions and conservation measures applicable within the EBMUD service area.

The Project proposes a connection to the EBMUD water supply system via construction of new 8-inch water lines within each Tract connecting the Project site to the existing water distribution system located under the D Street right-of-way.

#### Mitigation Measures

None needed. A “will serve” letter from EBMUD confirming sufficient water supplies is a standard project requirement prior to construction permit approvals.

### **Wastewater Collection, Treatment and Disposal**

**Utilities-2: Wastewater Treatment Requirements.** The Project’s wastewater treatment and disposal demands would not require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, and would not exceed the wastewater treatment requirements set by the SF Regional Water Quality Control Board. **(LTS)**

The Project area is within the boundaries of the Ora Loma Sanitary District, and would be provided with sanitary sewer service by this District. The Project’s new residential development would result in an increase in wastewater generation within the District’s service area. The District has indicated that there is adequate capacity in their collection system and treatment plant to serve the demands of cumulative development in the area, which would include the Project. The District has recently upgraded the trunk sewer line in D Street where the Project’s wastewater flows would enter the District’s system,<sup>5</sup> and this upgraded line has adequate capacity to accommodate the Project.

All wastewater generated by the Project would be directed into the Ora Loma Sanitary District’s sanitary sewer system and routed to their treatment plant, which has adequate capacity to serve the Project.

#### Mitigation Measures

None needed. A “will serve” letter confirming ability to serve the Project is a standard project requirement prior to construction permit approvals.

### **Storm Drainage Facilities**

**Utilities-3: Storm Drainage Facilities.** The Project will not require or result in the construction of new off-site storm water drainage facilities or the expansion of existing facilities. **(LTS)**

The Project’s new development (i.e., new homes and roads) will increase the amount of impervious surface area on the site and result in an increase in surface runoff from the site. Without addressing this increased runoff, the Project’s increased impervious surfaces would increase the rate and volume of storm water that would flow into the off-site storm water drainage system during peak periods.

Pursuant to NPDES Municipal Permit requirements for projects that disturb more than 10,000 square feet, the Project includes designs for construction of storm water treatment controls to treat post-

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<sup>5</sup>County of Alameda, Initial Study & Mitigated Negative Declaration, Tract 8057 Residential Subdivision Project, February 2012, p. 111. Available at <http://www.acgov.org/cda/planning/landuseprojects/currentprojects.htm>

construction storm water runoff. The Project includes storm water treatment as well as flow control measures as part of its design, including on-site storm water bio-swales and storm water retention facilities designed as large-capacity pipes installed below the streets. These facilities will detain the increased flows attributable to new impervious surfaces of the Project, and ultimately will release the storm water into the existing storm drain system at flow rates equal to or less than existing flows. With these facilities, the Project's storm drain system would result in no net increase in the rate or amount of runoff entering the off-site storm drain system, as compared to existing conditions.

To connect with the off-site storm water collection and conveyance services provided by the Alameda County Flood Control and Water Conservation District, the Project will construct water quality facilities and flow control features that ultimately drain off-site, as follows:

- Runoff from Tract 8296 will exit the site in two directions, one direction via a connection to the existing storm drain system downslope under the right-of-way in D Street, and portions will exist the site to the west via a new storm drain line connected to the existing storm drain system in the Machado Court neighborhood.
- Runoff from Tract 8297 will exit the site through a new storm drain pipe that connects to an existing storm drain to the west.

#### Mitigation Measures

None needed.

#### **Solid Waste**

**Utilities-4: Solid Waste.** The Project will be served by landfills that have sufficient permitted capacity to accommodate the Project's solid waste disposal needs, and the Project will comply with all federal, state and local statutes and regulations related to solid waste. **(LTS)**

The Project's proposed new residential development will result in an increase in solid waste generation and landfill demand within the existing service area. When the 31 proposed single-family homes are built and occupied, the Project is estimated to add approximately 82 new residents to the Fairview area. The California Integrated Waste Management Board (CIWMB) estimates that the average annual per capita residential solid waste disposal rate in Alameda County is 0.42 tons. Given a typical waste density of 80 pounds per cubic yard, the per capita waste generation rate is approximately 34.4 cubic yards per year, or approximately 2,752 cubic yards per year for the Project as a whole.

Alameda County is served by three active permitted landfills; the Altamont Sanitary Landfill, the Vasco Road Sanitary Landfill and the Tri-Cities Recycling and Disposal Facility in Fremont. Data obtained from the CIWMB website indicates that the total remaining permitted capacity for all three landfills is over 56.4 million cubic yards. The Project's estimated generation of 2,752 cubic yards of solid waste per year is a minor, less than significant increase in relation to the total remaining permitted capacity of Alameda County landfills.

The Project would be required to comply with all federal, State and local statutes and regulations related to solid waste, including recycling and green waste disposal to reduce landfill disposal, resulting in a less than significant impact on solid waste disposal requirements.

#### Mitigation Measures

None needed.

## Energy Demands

**Utilities-5: Energy.** The Project would not require more energy than the local energy provider (PG&E) has the capacity to serve, nor would it require construction of new energy facilities or expansion of existing facilities which could cause significant environmental effects. The Project would be subject to the requirements of currently applicable federal, state and local statutes and regulations relating to energy standards. **(LTS)**

The Project would be subject to Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, and would not violate applicable regulations related to energy standards. The Project is located in an area that currently receives electrical and natural gas services from PG&E. Connecting new buildings to existing lines would involve relatively minor improvements to the existing energy infrastructure. Energy consumption would be associated with the new residences at the site. The Project would not require or result in the construction of new energy facilities or expansion of existing facilities, construction of which could cause significant environmental effects. As such, the proposed project would have a less than significant impact on the provision of electricity and natural gas, and on energy consumption.

### Mitigation Measures

None needed.

## Rail Safety

There would be **no impacts** related to rail safety, as there are no rail crossings within or near the Project area.

## Telecommunications

Electrical, cable television and other telecommunication lines would be underground within the Project but connect to existing overhead lines along D Street. Within the Project site, the main lines would be placed under the interior street and lateral lines would be extended to each individual home. Impacts related to the provision of telecommunication services would be less than significant. **(LTS)**

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## Other Less than Significant Effects of the Project

Section 15128 of the CEQA Guidelines requires that the EIR briefly indicate the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR. The Notice of Preparation for this EIR did not include an Initial Study Checklist and therefore did not identify specific environmental topics as being screened out or unnecessary for further analysis of potential adverse environmental effects. This chapter of the Draft EIR provides a discussion and analysis of those environmental topics not anticipated to result in significant impacts, and not evaluated elsewhere in the EIR. The following partial Environmental Checklist and impact analysis indicates that the Project will have a less than significant impact or no impact with respect to the following environmental topics, and for which no mitigation is required beyond compliance with existing regulations (e.g., Geology and Soils):

- Agriculture
- Geology and Soils
- Hazards and Hazardous Materials
- Mineral Resources
- Population and Housing
- Public Services
- Recreation

## Agriculture and Forest Resources

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Farmland Conversion

The Project site is located in an urbanized portion of Alameda County and is not used as farmland. The horse-pasturing use of the eastern site does not serve a substantial agricultural purpose, but is only used privately. The Project site is not shown on the Farmland Mapping and Monitoring Program of the California Resources Agency as containing any prime, unique or important farmland.<sup>1</sup> The Project would not convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. **(No Impact)**

### Agricultural Zoning or Williamson Act Conflicts

The Project site is zoned for residential purposes, and is not zoned for agricultural use. There are a very few parcels that are zoned for agriculture under the Fairview Area Specific Plan, and three of these parcels extend northward from a point about 800 feet northeast of the Machado Court subdivision, including a roughly 4.6-acre parcel at the terminus of Old Quarry Road (a private road extension of D Street), bordering the Five Canyons Open Space area. However, neither the Project site nor any other lands in the surrounding areas are under Williamson Act contracts. The Project would not conflict with existing zoning for agricultural use, or with a Williamson Act contract. **(No Impact)**

<sup>1</sup> California Department of Conservation, California Important Farmland Finder, accessed September 23, 2014. Available at: <http://maps.conservation.ca.gov/ciff>



## **Forest Resources**

The Project site is predominantly covered by non-native grassland. Scattered planted and naturalized non-native tree species are also scattered throughout the Project site. These trees do not constitute a forest or forest land. Most of the surrounding areas are developed or otherwise urbanized and do not contain farmland or forest land. Although the privately-owned land that is designated as agriculture between the Machado Court subdivision and the Five Canyons Open Space is largely comprised of eucalyptus woodland forest, its value is very low as fuel and for construction. The Project would not conflict with existing zoning for, or cause rezoning of, forest land, and would not result in the loss of forest land or conversion of forest land to non-forest use. **(No Impact)**

## **Other Changes Affecting Farmland or Forest Resources**

The Project site is located in a generally urbanized portion of Alameda County. There are no farmlands in the immediate vicinity that would be converted to non-agricultural use as a result of the Project. The Project site and adjacent surrounding properties are developed or otherwise urbanized and do not contain farmland or forest land. The Project would not result in the conversion from forest land to non-forest use of any undeveloped open space areas within the Hayward Hills.

The Project would not involve any direct changes in the existing environment which could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use. The Project could increase indirect pressure to convert the adjacent agriculturally-designated eucalyptus forest to suburban development. However, as indicated, the eucalyptus forest has extremely low agricultural value as a forest resource, and the planning obstacles required for such development (rezoning and a major general plan amendment) would be considerable and difficult. **(LTS)**

## Geology and Soils

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	-	-	-	-
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-I-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

## Regulatory Setting

State

### Alquist-Priolo Earthquake Fault Zoning Act

The California Legislature passed the Alquist-Priolo Earthquake Fault Zoning Act in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards. Local agencies must regulate most development in fault zones established by the State Geologist. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, the city or county with

jurisdiction must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active or potentially active faults.

#### California Seismic Hazards Mapping Act

The California Seismic Hazards Mapping Act of 1990 (California Public Resources Code Sections 2690-2699.6) addresses seismic hazards other than surface rupture, such as liquefaction and seismically induced landslides. The Seismic Hazards Mapping Act specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

#### California Building Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, sets minimum requirements for building design and construction. In the context of earthquake hazards, the California Building Standards Code's design standards have a primary objective of assuring public safety and a secondary goal of minimizing property damage and maintaining function during and following seismic events.

### **Local (Alameda County)**

#### County Grading Permit Requirements

The Alameda County Code of Ordinances, Title 15 - Buildings and Construction, Chapter 15.36 – Grading, Erosion and Sediment Control provides the County's regulations on grading work on private property within the unincorporated area of the County. As indicated in Section 15.36.040, except under specific exceptions, no person shall do or permit to be done any grading on any site in the unincorporated area of the County without a valid Grading Permit obtained from the Director of Public Works. Pursuant to Section 15.36.170 (A), no Grading Permit shall be granted until the Director of Public Works verifies compliance with all of the provisions of this Chapter, and the Director of Public Works may impose any condition deemed necessary to protect the health, safety and welfare of the public, to prevent the creation of a nuisance or hazard to public or private property, and to assure proper completion of the grading.

Preliminary grading plans must be provide for review and determination of grading permit requirements prior to approval of final plans and issuance of a Grading Permit. Precise design at this stage is not required. The Preliminary grading plans shall contain a statement of the purpose of the proposed grading, and shall include a Geotechnical (soil) or Geologic Investigation Report in any of the following circumstances:

*A. When the proposed grading includes a cut or fill exceeding five feet in depth at any point and the slope of the natural ground within thirty (30) feet of the cut or fill exceeds ten (10) percent; however, for vehicular ways, a geotechnical/geologic investigation shall not be required unless the grading includes a proposed cut or fill that exceeds ten (10) feet in depth;*

*B. When the shrink-swell rating of the soil in the area of the proposed grading work is greater than .5, as shown in the "building site development" ratings in the "web soil survey soil data explorer" interactive maps published by the United States Department of Agriculture Natural Resources Conservation Service as of April 2010 at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, or when there are other reasons to suspect that highly expansive soils are present;*

*C. When the property is located within an earthquake fault zone or a seismic hazard zone, as delineated on the official maps published for that purpose by the California Geologic Survey, or when such hazards are otherwise known or suspected on the site.*

The Director may require additional or supplemental geotechnical/geologic investigations and reports in conjunction with the design and construction of other structures and facilities subject to separate permits, such as foundations, on-site wastewater treatment systems, stormwater infiltration devices, etc. The investigations shall be based on observation and tests of the material exposed by exploratory borings or excavations, and other inspections made at appropriate locations. Additional studies may be necessary to evaluate soil and rock strength, the effect of moisture variation on soil, bearing capacity, compressibility, expansiveness, stability, percolation rates, groundwater levels, and other factors. Any geotechnical/geologic investigation report shall be subject to the approval of, and supplemental reports and data may be required by, the Director of Public Works. Recommendations included in the reports and approved by the Director of Public Works shall be incorporated in the final plans and specifications.

According to Section 15.36.350, the Geotechnical/Geologic Investigation report shall contain all of the following as they may be applicable to the subject site:

- A. An index map showing the regional setting of the site;*
- B. A site map showing the topographic features of the site and locations of all soil borings and test excavations;*
- C. A classification of the soil types (unified soil classification); pertinent laboratory test data; and consequent evaluation regarding the nature, distribution and strength of existing soils;*
- D. A description of the geology of the site and the geology of the adjacent areas when pertinent to the site;*
- E. A suitably scaled map and cross sections showing all identified areas of land slippage;*
- F. A description of any encountered groundwater or excessive moisture conditions;*
- G. A description of the soil and geological investigative techniques employed;*
- H. A log for each soil boring and test excavation showing elevation at ground level and depth of each soil or rock strata;*
- I. An evaluation of the stability of pertinent natural slopes and any proposed cut and fill slopes;*
- J. An evaluation of settlement associated with the placement of any fill;*
- K. Recommendations for grading procedures and specifications, including methods for excavation and subsequent placement of fill;*
- L. Recommendations regarding drainage and erosion control;*
- M. Recommendations for mitigation of geologic hazards;*
- N. Recommendations for the design of any associated stormwater treatment/detention systems, particularly those systems that are intended to provide treatment by means of infiltration.*

#### County Subdivision Requirements

The Alameda County Code of Ordinances, Title 16 - Subdivisions, Chapter 16.08.050 requires that any Tentative Map for a subdivision of five or more lots shall include:

- A. A preliminary grading plan prepared by a civil engineer registered by the state;*

*B. A conceptual plan for soil erosion and sediment control for both construction and post-construction periods prepared by the civil engineer, or, with respect to the soil erosion control provisions, by a landscape architect registered by the state;*

*C. A soils-geologic investigation report prepared by a licensed geologist, certified engineering geologist, or a registered civil engineer or soil engineer as provided by Section 6736.1 of the Profession Engineers' Act.*

All data and material shall be consistent with requirements and specification of the county Grading Ordinance.

## Geotechnical Investigation Report

The information and analysis regarding geologic conditions and soils at the Project site is based on a report prepared by the Project applicant's soils engineer and engineering geologist:

- Henry Justiniano & Associates, Geotechnical Investigation Report and Updates, Proposed 31 Single Family Residences at 3231 & 324 7 D Street (Tract 8296) and 3289 & 3291 D Street (Tract 8297), August 10, 2015 (**Appendix G**)

This Geotechnical Report presents methods and results of the geotechnical consultant's studies and provides recommendations to avoid or minimize potential impacts related to the underlying geology of the Project's sites.

The Geotechnical Report indicates that the Project site is within a geologic unit of Late Cretaceous sedimentary rocks described as the Oakland Conglomerate. This geologic unit is thrust-faulted with unnamed sandstone, conglomerate and shale of the Castro Valley area. To the southeast, the Oakland Conglomerate is in depositional contact with the Joaquin Miller Formation. Soil borings and test pits for geological and seismic conditions were done in 2006 and 2007 on the western, uphill site (Tract 8297) by GEI, Inc., and in 2015 on the eastern, downhill site (Tract 8296) by Justiniano & Associates. During subsurface explorations of the Project site, the bedrock unit that was frequently encountered consisted of a yellow/brown, weak to moderately strong sandstone.<sup>2</sup>

### Surface Fault Rupture

Surface fault ruptures are classified as a primary geological hazard. The Geotechnical Investigation Report (pg. 6) indicates that "the site is not within a current Earthquake Hazard Zone (formerly Alquist-Priolo Special Studies Zone) and, during [their] reconnaissance, [they] did not observe geomorphic evidence suggestive of active faulting within the site; and (pg. 13), that "based on the available geologic maps, it is [their] opinion that the subject site is not located astride an active fault. (**No Impact**)

### Ground Shaking

The Geotechnical Investigation Report (pg. 6) indicates that the Project site is assigned a high seismic rating, due to its proximity to several faults, in particular the Hayward Fault. The Project site is located approximately 1.4 miles northeast of the Hayward Fault, 6.3 miles southwest of the Calaveras Fault, 14.6 miles from the Concord-Green Valley Fault, and 19.9 miles northeast of the San Andreas Fault, all of which are historically active. Damage from a seismic event could result from the secondary impact of strong seismic ground shaking originating on these nearby faults.

<sup>2</sup> Justiniano, p. 6.

The Geotechnical Investigation Report indicates that the Project site is susceptible to a peak ground acceleration (PGA) estimate of 0.685 as the Design Basis Earthquake (10% probability of exceedance in 50 years), as presented in the California Geological Survey's web site for a Probabilistic Seismic Hazards Assessment. As a point of reference, sites with PGA values greater than 0.15 must undergo additional seismic analysis before they can be underwritten by the Federal National Mortgage Association.

### Regulatory Requirements

All future homes constructed at the Project site will be required to be designed in accordance with all seismic provisions of the most recent version of the California Building Code (CBC, 2016, in effect in January 1, 2017), and with County of Alameda and State of California Standards for seismic construction.

- Policy P10 of the Safety Element of the Alameda County General Plan states that “Buildings shall be designed and constructed to withstand ground shaking forces of a minor earthquake (1-4 magnitude) without damage, of a moderate (5 magnitude) earthquake without structural damage, and of a major earthquake (6-8 magnitude) without collapse of the structure.”
- In addition, Action A6 of the Safety Element states, “Require sites to be developed in accordance with recommendations contained in the soil and geologic investigations reports.”

The geotechnical investigations and recommendations as required pursuant to the County’s Grading Ordinance and Subdivision Ordinance have already been prepared by licensed professional engineers. Following Project approvals and prior to obtaining building permits, it is standard practice to update geotechnical and structural design plans with more detailed design-level specifications that will ensure construction consistent with safety codes given the characteristics of the site. With implementation of detailed design-level specifications California Building Code, and with County of Alameda and State of California Standards for seismic construction, significant adverse effects related to ground shaking will not result. (LTS)

### **Liquefaction**

The Geotechnical Investigation Report (pg. 8) indicates that, “based on the hillside building envelope locations and bedrock lithology, the risks of liquefaction and densification are considered to be insignificant. (LTS)

### **Landslides**

A landslide is a mass of rock, soil and debris displaced down slope by sliding, flowing or falling. The Association of Bay Area Governments indicates that the landslide susceptibility history for the Project Area as “few landslides.”<sup>3</sup> The Project site is not located in an area mapped by the California Geological Society where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements.<sup>4</sup>

According to the Geotechnical Investigation Report (pg. 8), “there are no steep, unsupported banks that potentially could be influenced by lurching or lateral spreading. Seismically-induced slope failure may occur in hillside areas, especially when sites are in close proximity to earthquake epicenters. Based on the relatively gentle nature of the site topography and shallow depth to relatively strong rock, we consider that this risk would be insignificant and far below the range of acceptability that would commonly

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<sup>3</sup> Association of Bay Area Governments, <http://gis.abag.ca.gov/website/Landslides/viewer.html>

<sup>4</sup> Justiniano, Figure 8.

be associated with hillside construction in the Hayward Hills area.” However, the Geotechnical Investigation report (pg. 6) also indicates, “a large swale within the northeastern portion of the site where previous subsurface explorations were performed, that does contains deep soil deposits (of 13 to 14 feet), and the topography appears irregular and possibly may contain old slide deposits. Additionally, areas where clayey sands were encountered were moist and may be subject to creep (a gradual, downslope soil movement).

### Geotechnical Recommendations

The Geotechnical Investigation Report recommends the following for development of the Project:

- (1) In Tract 8297, grading procedures should commence with an over-excavation of fill, soft soils deposits and residual soils from the area of Lots 4 thru 6.
  - The excavation is anticipated to be approximately 12-feet deep and should penetrate into and expose a uniform surface of firm non-yielding materials, as interpreted in the field by the Engineer.
  - Subsequently, a sub-drain pipe should be provided at the heel-base of the excavation or in a trench that is excavated through approved compacted fill and into the bedrock. The sub-drain should consist of a 4-inch minimum diameter (rigid wall SDR 35 or equivalent), perforated pipe that is covered by Class II permeable rock that adheres to Caltrans specifications. A clean-out riser should be provided at a minimum, at one of the terminus of each sub-drain that traverses a fill. The sub-drain outlets should be provided at the low point, and may be day-lighted on slope surfaces, since only minor volume of water effluent is anticipated.
  - As the fill materials are placed commencing the fill prism upslope, a continuous benching should be established into the hillside. The fill and cut slopes should not exceed a 2 horizontal: 1vertical gradient.
  - The engineered fill materials should be placed in thin, moisture conditioned lifts not exceeding 8-inches in un-compacted thickness, prior to receiving compaction efforts to accomplish a minimum 90 percent relative compaction, based on ASTM Test Procedure D1557. If the fill material contains rocks or rubble, no rocks larger than 6-inches in their greatest dimension should be allowed. On-site materials are suitable for fill provided that they are free from organic matter or other deleterious substances.
  - All disturbed slope areas should be track-walked, and seeded, to mitigate erosion.
  - All grading operations must be under the supervision of the Engineer, in addition to the compaction testing procedures conducted by a Field Technician.

This recommendation from the Geotechnical Investigation Report, if approved by the Director of Public Works, shall be incorporated in the final plans and specifications for the Project and would reduce the risk of landslides to a less than significant level. (LTS)

## **Instability as a Result of the Project**

### *Residential Foundation Support*

As proposed, a majority of the Project’s residential building pads will be excavated to a significant depth such that they will be exposed the underlying stable sandstone at the pad surface. However, some residential building pads will be established at areas with significant fill thickness. As such, the Geotechnical Report recommends that two different foundation systems support the proposed

residences. The cut pads exposing bedrock at the surface would be adept to conventional footing foundations, while the fill pads should implement cast-in-place concrete piers, integrated with grade beams.

### Geotechnical Recommendations

The Geotechnical Investigation Report recommends the following for construction of all proposed residential building foundations and slabs within the Project:

- (2) **Foundations in Cut Pads.** In excavated, level building pads that expose bedrock materials at the surface, geotechnical conditions would be acceptable for implementation of conventional strip footing foundations that are structurally integrated to slab-on-grade floors.
- All footings should be at least 12-inches in width, and should have their bases located no less than 18-inches below the lowest adjacent finished subgrade.
  - Footings constructed to the given criteria, may be designed for an allowable bearing capacity of 2,000 psf for dead load, and 2,500 psf for dead load plus live load condition. These values may be increased by one-third to accommodate short duration seismic or wind loading conditions.
  - The footings should contain steel reinforcement over their entire length, with reinforcement as directed by the project Structural Engineer. In no case, however, should the exterior footing contain less than two No. 5 reinforcing bars, both top and bottom.
  - All slabs should be a minimum thickness as set forth by the Structural Engineer, but should not be less than 5-inches thick, and reinforced by a minimum of No. 4 bars, spaced at 18-inches each way, and centered within the entire slab.
- (3) **Foundations in Fill Pads.** It is recommended that where level building pad grades have been established by the placement of fill, a foundation system that employs drilled, cast-in-place reinforced concrete piers that extend into the underlying bedrock materials, be utilized. Structural loads should determine pier spacing. The piers should contain steel reinforcement over their entire length, with reinforcement as directed by the project Structural Engineer. The following summarizes the recommended criteria for foundation design:
- Pier Diameter Minimum 12-inches.
  - Pier Depth Minimum of 10-feet, or as determined in the field during drilling.
  - Bearing Capacity Maximum friction value of 600 psf, commencing 1-foot below the existing grade. These values may be increased by 1/3 for wind and seismic loads.
  - Grade Beams Minimum reinforcement of two No. 5 bars, both top and bottom.
- (4) **Concrete Slab-On-Grade.** Concrete slabs-on-grade will provide satisfactory floor area for the garage and patio areas. In order to reduce the potential for slab cracking, the following recommendations are presented:
- Scarify the subgrade surface to a minimum of 6-inches, to properly moisture condition the soil to near the optimum moisture content, and compact it to a minimum of 90 percent of maximum dry density.
  - The slabs should consist of a floating type of slab system. Complete isolation of the floor, from bearing walls, columns, nonbearing partitions, stairs, and utilities, should be provided, to allow the slab to move with minimum damage to the structural integrity of the building. A flexible felt



joint should be provided between the grade beam and the slab, to fill the void and prevent moisture infiltration.

- Provide the necessary gradient to prevent the ponding of water.
- Concrete slabs should include crack control joints for normal lineal shrinkage of the concrete materials. Where large areas of concrete slab are placed, with irregular projections or inserts within the slab area, stress concentrations will result, causing uncontrolled crack patterns. Where possible, crack control joints should be placed at stress locations where projections from a main slab or where inserts occur, in order to control the resultant crack pattern.
- All slabs should be a minimum thickness as set forth by the Structural Engineer, but should not be less than 5-inches in total thickness when placed.
- All concrete slabs-on-grade should be underlain by a 4-inch thick capillary break of "pea gravel" or clean crushed rock (no fines). It is recommended that Class 2 base rock not be employed as the capillary break material. If vapor transmission is undesirable, it is recommended that an impermeable membrane of 10-mil minimum thickness be placed upon the capillary break material, and overlain by 2 inches of clean sand, to assist in proper curing of the slab. The specified 4-inch thickness of the capillary break cannot be reduced, because of the use of sand.
- Reinforcement of the concrete slabs shall be as directed by the project Structural Engineer, but in no event should it consist of less than No. 3 bars at 18-inches each way, centered within the slab.

### *Retaining Walls*

The Project proposes to construct four types of new retaining walls; 1) at the base of a deep cut into the hillside (and thus into sandstone bedrock) on Lots 7, 8 and 9 on Tract 8297; 2) along the top of a cut slope and below an existing retaining wall on Lots 1, 2 and 3 on Tract 8296; 3) at the base of a 15 to 20-foot thick sliver fill along Lots 10 through 15 on Tract 8296, and 4) at the split level transition in pads 9 through 16 on Tract 8296. Each of these four distinct conditions and configurations require specific design parameters to ensure stability for each condition.

The Project does not propose fill or any other disturbance to the top of a rather steep area along the western property boundary of Tract 8296 that is common with the neighboring Care Facility, where the Care Facility's buildings are very close to a retaining wall with a height of 5 to 12 feet that is followed by a relatively steep slope.

### Geotechnical Recommendations

The Geotechnical Investigation Report recommends the following for construction of all proposed retaining walls within the Project:

- (5) All retaining walls shall have a drain blanket consisting of Class II Permeable material (conforming to Caltrans specifications) of minimum 12-inches in width or a Geo-composite drain, extending for the full height of the wall, except for 18-inches of compacted soil cover at the surface.
  - A 4-inch perforated sub-drain line (SDR 35) should be provided near the base of the drain blanket, with a suitable discharge location away from all structural improvements.
  - Where the retaining wall is used as part of a habitable structure, and in order to reduce the potential for moisture transmission through the retaining wall, it is recommended that the stem

wall be waterproofed, in accordance with manufacturer's specifications. This should include the heel of the footing and down face of the heel.

- A "can't strip" or equivalent should be provided on the exterior of the walls, at the joint between the retaining wall footing and the stem (wall).

(6) **Retaining Walls at the Base of Cut at Rear of Lots 7, 8 and 9 (Tract 8297).** A retaining wall designated to the base of a cut into the hillside that would expose bedrock, may be designed for a drained condition and to resist lateral pressures exerted from soils having an equivalent fluid weight of 40 pcf.

- The active lateral force may be resisted by a conventional footing with shear key, or piers.
- For conventional walls that extend to a minimum depth of 4 feet below current existing grades, a maximum toe bearing pressure of 2,500 psf combined with a passive force equal to the resistance provided by an equivalent fluid weight of 450 pcf, may be implemented.
- Additional lateral resistance may be provided by a friction factor of 0.45 between the bottom of the footing and the soil.

(7) **Retaining Wall at Top of Cut and Below Existing Retaining Wall on Lots 1, 2 And 3 (Tract 8296).**

There are three important issues to consider with this retaining wall; 1) the potential for the excavations to accommodate the proposed wall to undermine the existing wall; 2) the additional (surcharge) pressures being transmitted to the proposed wall from the existing wall above; and 3) the limited support to the wall foundation due to the sloping terrain in front of the wall. As such, it is recommended that a "soldier beam wall" option be selected for this application, as it is able to be constructed in phases. This would avoid the undermining of the wall above, and the drilled pier support can be designed neglecting the upper portion of pier embedment.

- The wall construction can begin with the excavations of slots to accommodate the drilling of the piers and installation of steel beam supports.
- Subsequently, additional excavations can be undertaken to place the perforated pipe, lagging and drain rock, on individual segments, prior to proceeding to the next segment.

(8) **Mechanically Stabilized Earth Retaining Walls at the Base of Fill, Lots 10 through 15 (Tract 8296).**

Detailed recommendation for modular concrete unit walls with geo-grid reinforced backfill (i.e., Keystone, Allan Block, etc.) have not yet been established, as the Project design has not yet reached that level of detail. This type of wall should be designed by the Soils Engineer of Record, for the Project.

(9) **Structural Retaining Walls at the Split Level Transition in Pads 9 through 16 (Tract 8296).** Walls in the interior foundation footprint used to retain a vertical configuration in the step between upper and lower pads on Lots 9 through 16 (Tract 8296) should be designed for a drained condition and to resist lateral pressures exerted from soils having an equivalent fluid weight of 55 pcf.

- The active lateral force may be resisted by a passive force commencing a minimum of one foot below the lowest adjacent grade in front of the wall, equal to the resistance provided by an equivalent fluid weight of 350 pcf.
- For conventional walls, a maximum toe bearing pressure of 2,000 psf may be implemented for dead load plus live load criteria. This value may be increased by one-third for seismic loading.
- Additional lateral resistance may be provided by a friction factor of 0.3 between the bottom of the footing and the soil.

These recommendations from the Geotechnical Investigation Report, if approved by the Director of Public Works, shall be incorporated in the final plans and specifications for the Project and would reduce the risk of instability due to Project construction methods to a less than significant level. **(LTS)**

### **Erosion or Loss of Topsoil**

Grading and construction associated with building the Project's proposed 31 new homes could lead to the erosion of topsoil. Potential impacts related to erosion have been fully addressed in Chapter 8: Hydrology and Water Quality of this Draft EIR. The Project will be required to include a Stormwater Pollution Prevention Plan (SWPPP) under the terms of the County's Construction General Permit (CGP), which includes measures to control the risk of soil erosion related to Project construction activities. This impact is considered less-than-significant. **(LTS)**

### **Expansive Soils**

Laboratory testing was performed pursuant to the Geotechnical Report on selected soil samples to identify their engineering properties, including test indicative of the expansion and creep potential of the soil (ASTM D-4943). Testing results yielded liquid limits of 32 and 42 and plasticity indexes of 19 and 27, which correspond to moderate to highly expansive and creep-susceptible clays. The detailed Geotechnical Recommendations presented above take these soils conditions into consideration, and would reduce potential hazards associated with expansive soils to a level of less than significant. **(LTS)**

### **Septic Tanks**

The Project does not involve construction of septic systems, and would have no impact related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. **(No Impact)**

## Hazards and Hazardous Materials

<b>Would the Project:</b>	<b>Potentially Significant</b>	<b>LTS with Mitigation</b>	<b>LTS</b>	<b>No Impact</b>
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Transport, Use or Disposal of Hazardous Materials

It is likely that equipment used at the site during construction activities could utilize substances considered by regulatory bodies as hazardous, such as diesel fuel and gasoline. However, all construction activities would be required to comply with Title 49 of the Code of Federal Regulations, US Department of Transportation (DOT), State of California, and local laws, ordinances and procedures, potential impacts related to the routine transport, use and disposal of hazardous materials. With required compliance with these regulations, the Project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and

would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. **(LTS)**

#### Mitigation Measures

None needed. However, it is recommended that the Project applicant and construction contractor implement feasible Best Management Practices (BMPs) during construction to ensure conformity with applicable regulations and further minimization of the potential negative effects of routine use of hazardous materials, including but not limited to:

- Follow manufacture's recommendations on use, storage, and disposal of chemical products used in construction;
- Avoid overtopping construction equipment fuel gas tanks;
- During routine maintenance of construction equipment, properly contain and remove grease and oils;
- Properly dispose of discarded containers of fuels and other chemicals.

#### **Presence of Hazardous Materials**

A search of relevant public agency databases containing records of past occurrences involving hazardous wastes was conducted for the Project site. On the basis of these database records, there would be no impact related to the potential exposure of construction workers or future residents to hazardous materials on the Project site. The Project would not have a significant environmental impact associated with emissions of hazardous emissions or handling of hazardous or acutely hazardous materials, substances or waste within a quarter mile of an existing or proposed school. The Project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 ("Cortese List"). **(No impact)**

#### **Safety Hazards Due to Nearby Airport or Airstrip**

The closest airport to the Project site is the Hayward Air Terminal, located approximately 3.5 miles to the west. The Project site is not within an airport land use plan, nor is the Project close enough for the airport to pose a unique safety hazard to residents or workers in the Project area. No private airstrips are located in the vicinity of the Project site. Therefore, the Project would have no impact related to nearby airports or private airstrips. The Project site is not located within an airport land use plan or within two miles of a public airport or private airstrip, and would not result in a safety hazard for people residing or working in the Project area. **(No Impact)**

#### **Emergency Response Plan**

There are no emergency response or evacuation plans in effect in the Project area. The Project would not impair implementation of, or physically interfere with an adopted emergency response plan or emergency evacuation plan. **(No Impact)**

#### **Exposure of People or Structures to Wildland Fires**

The Fairview area is considered a "local responsibility area" (LRA) with respect to fire protection, meaning that fire protection services are provided by a local as opposed to a state agency. The Project site is not identified on the State Fire Hazard Severity Zone map as being within a fire hazard severity

zone,<sup>5</sup> and consequently building code requirements that apply to developments within a fire hazard severity zone would not be required. Potential impacts resulting from exposure of people or structures to the risk of wildland fires is considered less-than-significant. **(LTS)**

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<sup>5</sup> [http://frap.cdf.ca.gov/webdata/maps/alameda/fhszs\\_map.1.pdf](http://frap.cdf.ca.gov/webdata/maps/alameda/fhszs_map.1.pdf) accessed August 16, 2011.

## Mineral Resources

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Loss of Mineral Resources and a Mineral Resource Recovery Site

The Project site contains no known mineral resources. The Conservation Element of the Alameda County General Plan does not identify any mineral resources in the vicinity. Therefore, the Project would have no impact with regard to mineral resources or result in the loss of availability of any locally important resource recovery site. **(No Impact)**

## Population and Housing

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
Induce substantial population growth in a manner not contemplated in the General Plan, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extensions of roads or other infrastructure), such that additional infrastructure is required but the impacts of such were not previously considered or analyzed?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere in excess of that contained in the City's Housing Element?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

### Growth Inducement

The Project is located within an already established planning area (Fairview Area) virtually surrounded by a developed urban environment within an unincorporated area. The Project would result in the construction of 31 new single family homes. Based on an average of 2.71 persons per household as estimated in the 2010 Census for Alameda County, it is estimated that the Project would result in approximately 84 additional residents. The addition of 84 new residents in an area designated by the Fairview Area Specific Plan for population growth does not qualify as substantial increase in population. The Project would not result in significant increases in population, demand for housing, or expansion of public or private services. Other than direct increase in development on the site analyzed in this document, the Project would not be anticipated to have a growth-inducing effect. **(LTS)**

### Housing and/or Population Displacement

The Project would develop 31 new housing units on a previously developed site where the residential units are now vacant. The existing vacant housing units will be demolished and subsequently replaced by new housing units. Therefore, the Project does not involve displacement of any housing units or displace any existing residents. **(No Impact)**



## Public Services

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the following public services:				
• Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
• Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■
• Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	■

### Fire Protection

The Project site is located within the Fairview Fire Protection District, a special district within Alameda County. Fire protection services are provided by the Hayward Fire Department through a contract with the District. The Project would add approximately 84 new residents and 31 new structures to an area already adequately served by fire protection resources. The addition of the relatively small number of new residences would not affect fire department service ratios or response times, nor would any new fire protection facilities need to be provided. **(No Impact)**

### Police Protection

The Alameda County Sheriff is responsible for police services on all unincorporated lands within the County, including the Project site. The Project would add approximately 84 new residents that would require police protection from the Sheriff. The addition of such a small number of residences would not affect County Sheriff service ratios or response times, nor would any new facilities be needed. Property taxes to be generated by the Project, when complete, would support the provision of police services by the County Sheriff. **(No impact)**

### Public Schools

The Project site is located within the Hayward Unified School District. The proposed Project would not generate enough students to adversely affect the service ratios of the School District, nor would it result in the need for additional schools to be built. The Project would be subject to and would be required to pay the appropriate amount pursuant to the County School Impact Fee applicable to new residential development in Alameda County. Payment of the fee would ensure that the Project would fund its incremental share of school improvements to accommodate the cumulative student demand for schools and school facilities resulting from the increase in population. **(No impact)**

## Recreation

Would the Project:	Potentially Significant	LTS with Mitigation	LTS	No Impact
Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Include recreational facilities or require the construction or expansion of recreational facilities which might have a substantial adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

### Park Usage and Construction or Expansion of Recreational Facilities

The Project would increase the use of neighborhood parks by increasing the population of park users in the area by approximately 84 persons. The corresponding increase in park deterioration as a result of 84 additional park patrons would not result in substantially accelerated deterioration of park facilities, nor would it require the expansion or construction of new park facilities elsewhere. An increase of 84 additional park patrons could potentially contribute to the cumulative demand for more park and recreation facilities. However, the Project would be subject to and would be required to pay the appropriate County Park Dedication Fees applicable to new residential development in Alameda County. Payment of the fee would ensure that the Project would fund its incremental share of improvements to accommodate the cumulative demand for park and recreation facilities resulting from the increase in population. Payment of the County Park Dedication Fee would result in a less-than-significant impact on recreational facilities.

The Project would not increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated. The Project does not include recreational facilities nor does it require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment. **(LTS)**

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## Alternatives

CEQA Guidelines Section 15126.6 requires an EIR to include a discussion of a reasonable range of alternatives to the proposed Project's design, configuration or location, which would attain most of the basic objectives of the Project, but would avoid or substantially lessen any significant effects of the Project. The CEQA Guidelines, while not requiring consideration of every conceivable alternative, does require that the EIR explain why specific project alternatives considered at one time were rejected in favor of the proposed Project. The selection of alternatives is to be guided by feasibility, the provision of reasonable choices and the promotion of informed decision-making and public participation. An EIR need not evaluate alternatives that would have effects that cannot be determined, or for which implementation would be remote and speculative.

The Guidelines also require that the EIR specifically evaluate a "no project" alternative for the purpose of comparing or contrasting the effects of approving the Project with the effects of not approving the Project. Analysis of the "no project" alternative must consider conditions as they were at the time of the notice of preparation, as well as conditions that would reasonably be expected to occur in the future without Project approval, based on existing plans and available infrastructure. An "environmentally superior" alternative must be identified in the EIR (pursuant to Section 15126.6 [e]), which may be the "no project" alternative. However, if the "no project" alternative is identified as the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

The alternatives addressed in this EIR were selected based on the following factors:

- The extent to which the alternative would accomplish most of the basic Project objectives.
- The extent to which the alternative would avoid or lessen any of the identified significant environmental effects of the Project (discussed in Chapters 4 through 12).
- The potential feasibility of the alternative.
- The extent to which the alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice.

The proposed Project is fully described in Chapter 3 of this EIR (Project Description). The environmental consequences of the Project are addressed in Chapters 4 through 13 of this EIR.

### Project Objectives

CEQA requires the analysis of alternatives that would feasibly attain "most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project." CEQA Guidelines (Section 15126.6 (a)) requires the discussion to focus on alternatives that are capable of avoiding or substantially lessening significant effects of the Project, even if these alternatives would impede to some degree the attainment of Project objectives, or would be more costly.

The following are the objectives of the proposed Project. Alternatives will be evaluated in part based on their ability to meet these objectives. The Project applicant's main objective in undertaking this Project is to:

1. Develop high quality market-rate single-family homes on a desirable site compatible with surrounding residential development.

The secondary objectives of the Project are:

2. Create an on-site stormwater control and detention system that meets legal requirements.
3. Limit disturbance to surrounding neighbors by avoiding off-haul of grading material.
4. Grade and develop the site so as to direct all impervious surface drainage through bio-filtration facilities and then to a detention basin located under the proposed street.

## Alternatives Analysis

The Project would result in potentially significant impacts associated with the following topics. Each of these impacts could be significant without implementation of mitigation measures, but would be reduced to a less than significant level if the mitigation measures recommended in this document are implemented.

- *Air Quality*: temporary increase in dust and hazardous air emissions during construction.
- *Biological Resources*: potential loss of habitat of special status species; adverse impacts to on-site or nearby nesting birds.
- *Cultural Resources*: potential discovery of as-yet unknown archaeological resources, paleontological resources and/or human remains during construction.
- *Hydrology and Water Quality*: potential inconsistency with currently effective water quality regulatory requirements.
- *Land Use*: conflict with policies of the Fairview Area Specific Plan adopted to protect the topography of the Fairview district.
- *Noise*: temporary construction-related noise and vibration impacts.
- *Transportation and Circulation*: temporary construction-related traffic impacts.

The alternatives analysis is presented as a comparative analysis to these potentially significant impacts associated with the Project. The following alternatives analysis compares the potentially significant environmental impacts of the Project as analyzed in detail in Chapters 4 through 13 of this EIR, with the potential effects of each alternative, and discusses feasibility of implementation and ability to meet Project objectives.

CEQA Guidelines (Section 15126.6(f)(1)) states that: *“the range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making. Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability,*

*availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives.”*

## **Selection of Alternatives**

Every possible alternative to the Project cannot be fully evaluated. The selected alternatives satisfy the requirement to consider and discuss “a range of reasonable alternatives to the project” pursuant to CEQA Guidelines section 15126.6. As discussed above, these alternatives were chosen as reasonable alternatives at this site and no additional alternatives were identified that would substantially contribute to a meaningful evaluation, analysis and comparison of the Project.

There are three alternatives presented below. Aside from the required “no project” alternative, a reduced density alternative is presented, and an alternative that would be more consistent with certain design-related policies, principles and guidelines of the Fairview Area Specific Plan that were adopted to preserve the area’s natural topography and land form characteristics. Each of these alternatives is a ‘stand-alone’ alternative, and each is compared to the Project in terms of how it would avoid or lessen impacts of the Project. The intent is to allow the reader and decision-makers to compare whether the alternatives would result in potential environmental benefits (i.e., would reduce or avoid potential environmental effects) as compared to the Project, and to identify the environmentally superior alternative.

### Alternative A - No Project, No Development

Alternative A, the No Project – No Development Alternative assumes the proposed Project is not approved and the site would remain in an undeveloped state, with no development of new roadways or new residences. Although the site is designated for residential use at the same density as currently proposed, the No Project Alternative assumes that development would not occur on this site for the foreseeable future.

### Alternative B - Reduced Density (25% Reduction)

Alternative B assumes the site would be developed generally as proposed, but with a 25% reduction in density (i.e., from 31 to 23 residential units) which would result in a reduction in magnitude of certain environmental effects.

### Alternative C - Greater Consistency with Fairview Specific Plan

Alternative C represents a conceptual development program for the Project sites that would be in greater conformance with the design principles and guidelines of the Fairview Area Specific Plan, particularly those guidelines that seek to retain existing natural topography and blend development into existing land forms.

## **Alternatives Rejected as Infeasible**

Section 15126.6(c) of the CEQA Guidelines requires an EIR to identify any alternatives that were considered by the lead agency but were rejected as infeasible, and to briefly explain the reasons underlying the lead agency’s determination.

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### Off-Site Alternative

The Project site is one of several undeveloped and residentially designated properties in the Fairview area of unincorporated Alameda County. The Project site is adjacent to already developed areas and is identified in the *Fairview Area Specific Plan* as a site on which residential development is anticipated. Furthermore, the Project site is within the control of the Project applicant and the applicant does not own or control any of these other undeveloped properties. Therefore, any off-site alternative would be a different Project, with a different applicant, and is not considered a feasible alternative for purposes of this environmental review.

### Scrub Habitat Preservation Alternative

An alternative was considered by Alameda County that would have involved creation of an open space parcel of approximately 1 acre in size within tract 8297 for the preservation of existing baccharis scrub vegetation. The intention of this alternative was to consider retention of a relatively small scrub habitat on this portion of the Project that currently has a relatively barrier-free connection to the open wooded canyons associated with the Five Canyons development to the east, which provide suitable (though not critical) habitat for Alameda whipsnake (AWS).

This alternative was rejected for a number of reasons. First, the scrub habitat on the Project site is characterized as relatively poor, is not designated as critical habitat for AWS, and individual AWS are not known to be present within the site. Secondly, the scrub habitat on the site is relatively small and located immediately adjacent to existing residential areas on the east, west and north, and planned future residential development to the south. The chance of a dispersing individual AWS entering the Project area via the barrier-free property line to the south is minimal. Finally, it is very unlikely that the Project area provides a source habitat for AWS. Rather, the scrub habitat on the Project site could more accurately be characterized as a sink habitat that would have difficulty sustaining a population of AWS. Creating a permanent sink habitat on the site may increase the chance of individuals entering the Project area, but would not increase the viability of the area for maintaining a local population, and therefore would not ultimately benefit the species and may do more harm than benefit.

## **Alternative A: No Project, No Development**

### **Description**

Under a “no development” alternative, the Project site would remain in an undeveloped state and no new development would occur for the foreseeable future. It is assumed the existing grazing of horses would remain on site. This alternative represents the possibility that no project is approved on this site.

### **Impact Analysis**

Under this alternative, there would be no environmental impacts because no new development would occur and the site would remain in its current natural state.

### **Ability to Accomplish Project Objectives and Feasibility**

A No Project/No Development alternative would not meet any of the Project objectives, as it would not create new housing opportunities in the Fairview area of unincorporated Alameda County.

This alternative represents the possibility that no project is approved on this site. However, there is no current proposal for the County or other agency to purchase this site or otherwise preserve it in an undeveloped state. This site is zoned to allow for residential development. Therefore, while this alternative analyzes a no development scenario, it is not necessarily reasonable or feasible to assume the site would remain undeveloped in the long term.

## **Alternative B: Reduced Density (25% Reduction)**

### **Description**

Alternative B presents a scenario in which the overall density of development at each of the Project sites would be reduced, thereby reducing certain construction-related disturbances and reducing certain environmental effects resulting from new housing in the area (i.e., air quality emissions, traffic, utility and public service demands). This alternative (see **Figure 14-1**) assumes the following:

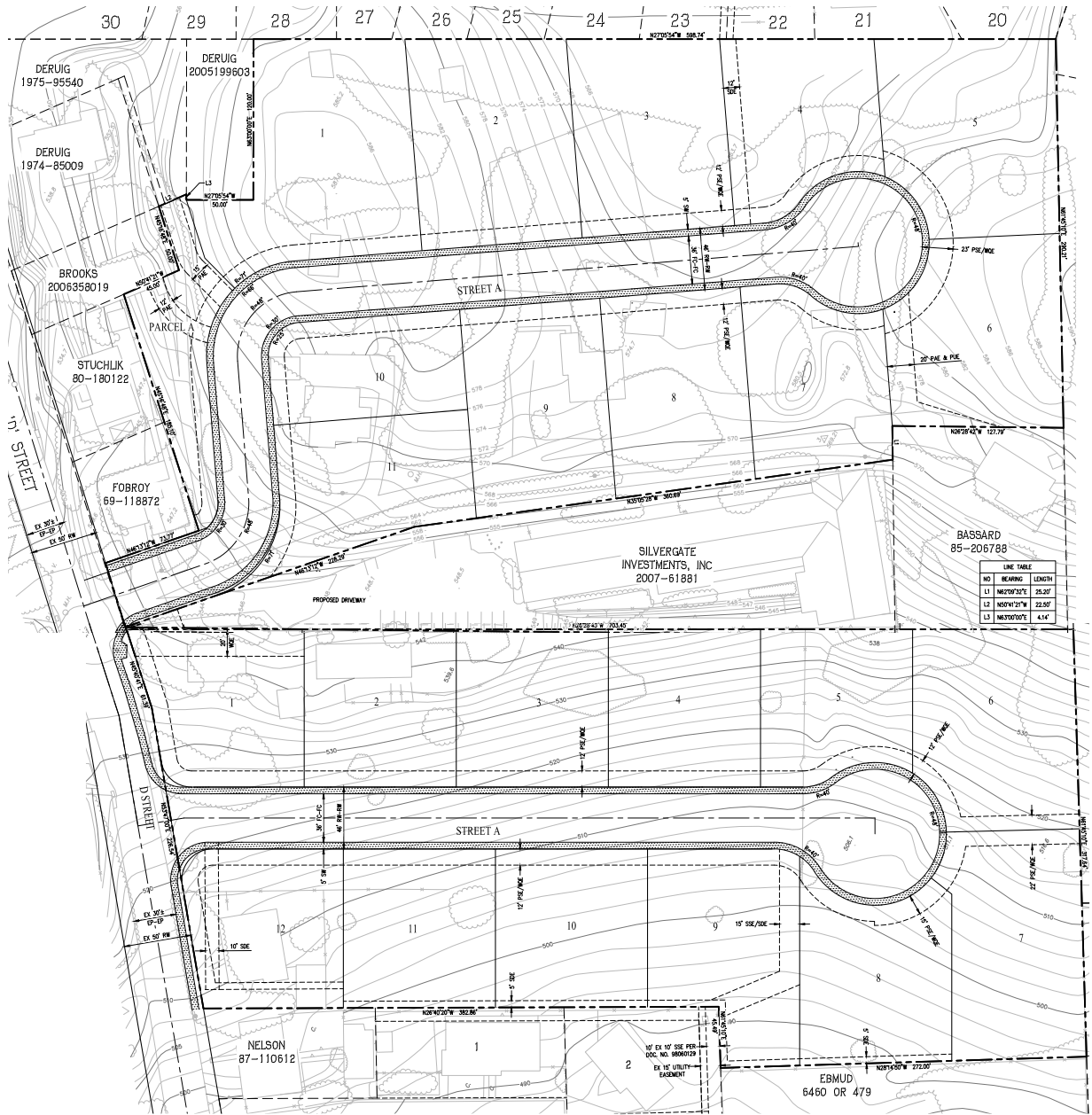
- The footprint of proposed development within both Tract 8296 and Tract 8297 would remain the same, with the same roadway alignments and utility service extensions. All existing structures within both tracts would be removed.
- The area within each footprint of development on both Tracts would still be constructed with new homes, but each new lot would be slightly larger. For example, Tract 8296 has approximately 3.9 acres allocated to proposed development of 16 new lots, at an average of approximately 10,600 square feet per lot. Under Alternative B, this same 3.9 acres would be allocated among 12 new lots (a 25% reduction in lots) with a larger average lot size of approximately 14,000 square feet. Similarly, Tract 8297 has approximately 4.24 acres allocated for the development of 15 new lots, at an average of about 11,700 square feet per lot. Under Alternative B, this same 4.24 acres would be allocated among 11 new lots (an approximate 25% reduction in lots) with average lot sizes of approximately 16,000 square feet per lot.

Rather than a total development of 31 new residential lots, this alternative would result in development of 23 new lots, with each lot being larger than the lot sizes as proposed under the Project. Rather than eliminating lots for open space, this alternative reduces the development potential by creating larger lots within the same development envelop of the Project.

### **Impact Analysis**

#### Air Quality and Greenhouse Gas Emissions

Operational air quality impacts and greenhouse gas emissions would be approximately 25% less than those identified under the proposed Project. However, the Project's air quality and GHG emissions are already below threshold levels, and Alternative B would only further reduce the already less than significant impacts of the Project. While Alternative B would reduce construction activities and associated construction-period emissions, standard mitigation for construction-period emissions would still be required to reduce construction emissions to less than significant levels, as required under the proposed Project.



**Figure 14-1**  
**Alternative B - Reduced Density**  
**(25% Reduction)**



Source: Carlson, Barbie and Gibson



### Biological Resources

Because the same extent of the Project site would be disturbed under Alternative B, impacts related to biological resources would be the same as those of the Project, including potential removal of special-status plants, potential unintended take of AWS, and potential disturbance of nesting birds. Therefore, mitigation measures as required of the Project would be required under Alternative B, and this alternative would not effectively avoid or reduce these potential effects.

### Cultural Resources

The same portions of the Project site would be disturbed under Alternative B, and the possibility of uncovering as-yet undiscovered or unknown cultural resources during construction would still be a possibility. Therefore, mitigation measures as identified for the Project would also be required under this alternative, and this alternative would not effectively avoid or reduce these potential effects.

### Hydrology/Water Quality

The reduced density of development under Alternative B could reduce the total amount of impervious surface and the resulting volume of future stormwater runoff. However, the larger lots could also simply enable larger homes to be constructed, resulting in a similar extent of impervious surfaces and the same stormwater runoff volume and pollutant characteristics as the Project. In any case, compliance with existing regulatory requirements and recommended mitigation measures would still be required to address stormwater quality during and post-construction, as well as flow control requirements to limit post-construction runoff to per-development conditions. Therefore, mitigation measures as required of the Project would be required under Alternative B, and this alternative would not effectively avoid or reduce potential hydrology and water quality effects.

### Land Use/Planning

This alternative is assumed to utilize the same street configuration, grading and lot preparation as the Project, and would therefore have the same adverse conflict with policies adopted to preserve the existing site topography, result in deep excavations and mass grading on 20 percent slope or greater.

### Noise

The reduced density under Alternative B would reduce the total amount of new construction, with a potential reduction in the overall duration of construction-period noise. However, impacts related to construction noise would still be anticipated, and compliance with existing regulatory requirements and recommended mitigation measures would still be required, and this alternative would not effectively avoid or reduce potential construction-period noise effects.

### Transportation and Circulation

Alternative B would reduce the number of lots and therefore would commensurately reduce the estimated daily and peak hour vehicle trips as compared to the Project. However, the Project's impacts related to traffic are below significant impact thresholds, and Alternative B would only further reduce the already less-than-significant traffic impacts of the Project.

### Aesthetics

As indicated in Chapter 4: Aesthetics, the Project's new homes are not objectively considered to be negative-appearing, would not substantially block a vista across the Project site, and would not result in a development character that would be substantially different than other surrounding properties in the area.

## Ability to Accomplish Project Objectives and Feasibility

The reduced density of development under Alternative B would meet all of the Project objectives, although to a lesser degree than would the proposed Project. It should also be noted that the financial feasibility of this Alternative has not been determined, as the less dense residential development would still need to fund construction of roadway and utility connections, as well as provide fees for County services.

## Alternative C - Greater Consistency with Fairview Specific Plan

As indicated in Chapter 9: Land Use, the Project is not consistent with several selected principles and guidelines of the Fairview Area Specific Plan that are applicable to the Project site, particularly those adopted to preserve the existing topography and blend development into existing land forms. These inconsistencies with principles and guidelines of the Fairview Area Specific Plan would result in:

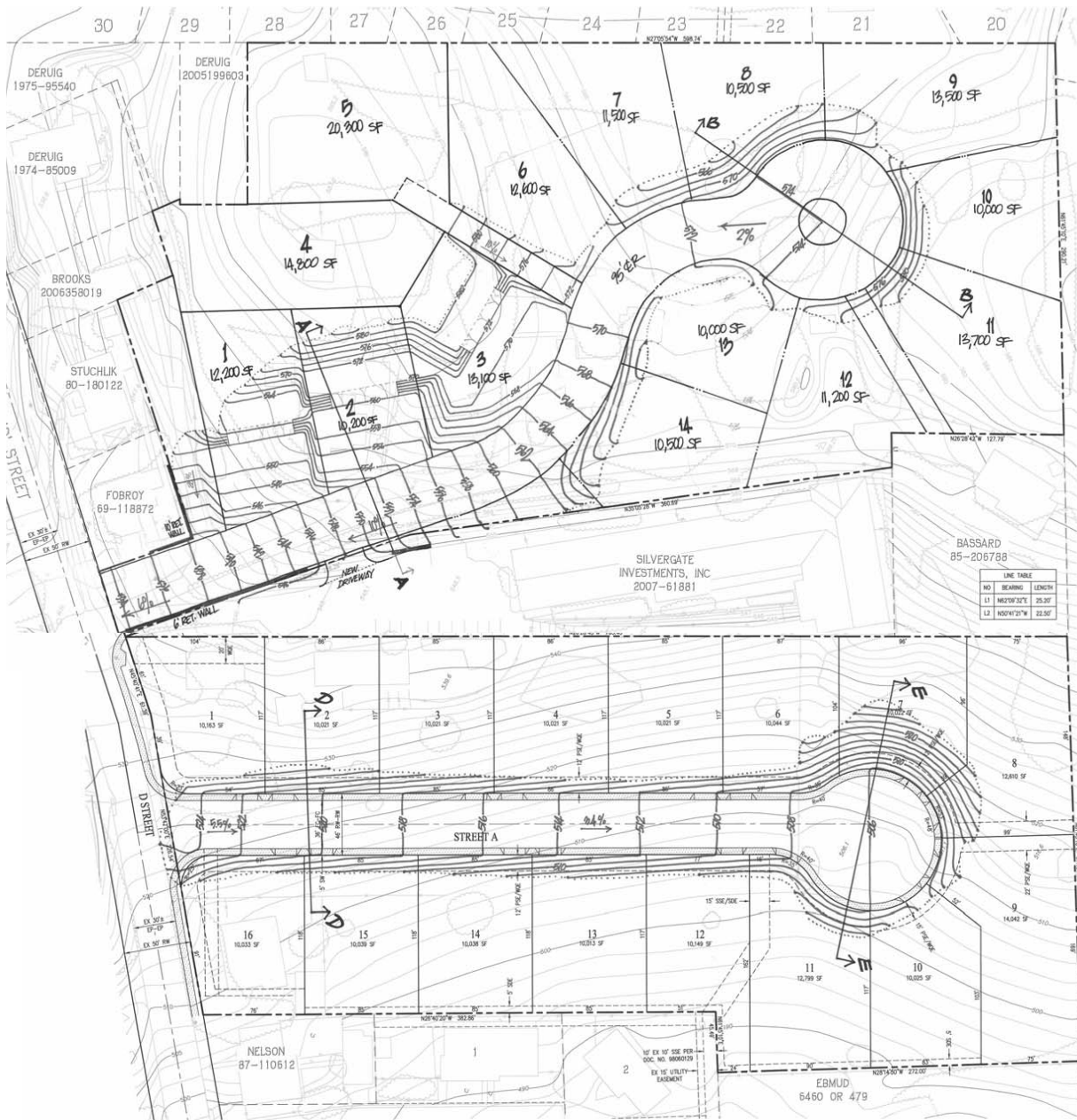
- Substantial regrading of the Project sites, with cuts and fills of up to 20 feet in certain locations, that would not retain natural topographic features;
- Mass site grading is proposed across areas where existing slope exceeds 20%, instead of individual lot grading;
- Flat padded lots that do not retain natural grade throughout most of the Project, instead of custom foundations;
- Grading that would result in new slopes with heights of greater than 10 feet between certain home sites, and 2:1 slopes that exceed 20 feet in horizontal distance;
- Rows of residences with similar setbacks and elevations.

While some of the conflicts listed above are design considerations that do not represent substantial adverse physical changes to the environment, the effects of excavations of more than 20 feet in depth on a prominent hill top, mass grading of 20% slopes, and long expanses of new 2:1 slopes, would adversely affect the contour of the land. The Fairview Area Specific Plan was adopted, in part, to prevent or avoid such substantial changes to the natural topography. Plan policies allow such substantial grading only where necessary for reasonable development of a property. Although major physical change to existing topography is not specifically identified in the CEQA Guidelines as an adverse effect on a natural resource or a CEQA threshold issue, the County recognizes such topographic changes as an environmental impact under the authority given to the County as lead agency to define significant impacts and thresholds.

## Description

Under Alternative C (see **Figure 14-2**), the extent of grading of the two Project sites would be substantially limited, and mass grading would occur only to the extent necessary to create acceptable road grades that meet County standards for local streets. Site improvements would avoid deep excavations and grading on 20 percent slopes or greater, and would minimize creation of new 2:1 slopes with heights greater than 10 feet, or distances greater than 20 feet. Rather than re-grading each site to accommodate new homes on relatively flat building pads, this alternative would employ custom foundation designs on both sites, or use stepped pier and grade beam foundations or split pad foundations that step down with the slope, to retain a more natural appearance of the topography.

14-2



**Figure 14-2**  
**Alternative C - Greater Consistency with**  
**Fairview Area Specific Plan**



Source: Alameda County Planning staff, and Carlson, Barbie and Gibson

On Tract 8297, Alternative C would reconfigure the new street to more closely follow existing contours and avoid the degree of mass grading required. Such street realignment on Tract 8297 may require that one or two new home sites within the Tract would be served by private easements for access. On Tract 8296, there could be more split pad lots on the uphill side of the new street (Lots 2 to 5 particularly, and possibly Lots 6 to 8). To the extent allowed by these relatively narrow sites, this alternative would seek to group or shape new home sites in clusters of varying patterns, and strive to complement natural landforms, rather than being designed in a linear pattern fronting a relatively straight internal roadway.

## **Impact Analysis**

Without a detailed design of such an alternative, a comparative environmental assessment of this alternative can only be conceptual. However, the following general conclusion can be drawn.

### Air Quality and Greenhouse Gas Emissions

Operational air quality impacts and greenhouse gas emissions would generally be the same as those identified for the proposed Project, which have been found to be below threshold levels for significant impacts. While this alternative may modestly reduce construction-period emissions associated with the Project's proposed mass grading, the necessary roadway grading and individual lot grading would likely generate a similar amount of air quality and GHG emissions, and standard mitigation would still be required to reduce construction emissions to less than significant levels, as required under the proposed Project.

### Biological Resources

This alternative would not reduce or avoid potential impacts related to biological resources, as new development (whether mass graded under the Project or with custom grading) could still potentially remove special-status plants, result in potential unintended take of AWS, and disturb nesting birds. Therefore, mitigation measures as required of the Project would be required under this alternative, and this alternative would not effectively avoid or reduce these potential effects.

### Cultural Resources

The possibility of uncovering as-yet undiscovered or unknown cultural resources during construction would still be a possibility, although the depth of excavations would be generally less. Therefore, mitigation measures as identified for the Project would also be required under this alternative, and this alternative would not effectively avoid or reduce these potential effects.

### Hydrology/Water Quality

This alternative would likely result in relatively similar total amounts of new impervious surface, with a similar resulting increase in the volume of future stormwater runoff. Compliance with existing regulatory requirements and recommended mitigation measures would still be required to address stormwater quality during and post-construction, as well as flow control requirements to limit post-construction runoff to pre-development conditions. It is likely that the stormwater control plan prepared for the Project would need to be modified to adequately address the post-construction water quality treatment requirements of this alternative. Alternative C would be required to comply with all regulatory requirements as also required of the Project, and this alternative would not serve to avoid or reduce potential hydrology and water quality effects more than the Project as proposed.

### Land Use/Planning

This alternative would (by definition) be more consistent with the design-related principles and guidelines of the Fairview Area Specific Plan, and therefore would provide for greater protection and

preservation of important natural features and natural topography, and would result in new development that is more sensitive to variations in topography. By retaining the natural topography to the extent feasible after construction of required road grades, this alternative would reduce the extent of cut and fill throughout both Tracts, would keep grading and site preparation activity to a minimum; would minimize the creation of new slopes along the property boundaries at 2:1 slope, and would not (to the extent feasible) result in new homes developed in a similar linear pattern fronting the Project's relatively straight internal roadways. It would avoid the need for Mitigation Measure Land Use-1 (Topography Preservation) for split pad lots or custom grading on four specified lots (Lots 1, 2, 8 and 15). However, this alternative would not result in development of a substantially more rural residential character, as the density of Alternative C would be the same or similar to that of the Project.

#### Noise

Construction-period noise associated with the mass grading operation of the Project would be reduced in extent, but individual lot grading activities could still occur, likely for individually less duration but possibly stretched out over a longer time period as new homes are developed with custom grading or pier and grade beam construction. Impacts related to construction noise would still be anticipated, and compliance with existing regulatory requirements and recommended mitigation measures would still be required. However, with less mass grading, which would be the primary generator of the most intensive noise and vibration effects, this alternative could potentially reduce, but not avoid construction-period noise effects.

#### Transportation and Circulation

This alternative would have the same or a similar number of lots and therefore would have the same or similar estimated daily and peak hour vehicle trips as compared to the Project. Since the Project's impacts related to traffic are below threshold levels, this alternative would have similarly less than significant effect on traffic congestion and intersection level of service.

#### Aesthetics

As indicated in Chapter 4: Aesthetics, the Project's new homes are not objectively considered to be negative-appearing, would not substantially block a vista across the Project site, and would not result in a development character that would be substantially different than other surrounding properties in the area.

This alternative would provide for greater consistency with principles and guidelines of the Fairview Area Specific Plan, and as a matter of policy, would result in new development that is more sensitive to variations in topography than does the Project.

### **Environmentally Superior Alternative**

Section 15126.6 of the CEQA Guidelines requires that an "environmentally superior" alternative be selected, and the reasons for such a selection disclosed. In general, the environmentally superior alternative is the alternative that would generate the least significant impacts. Identification of the environmentally superior alternative is an informational procedure, and the environmentally superior alternative may or may not be the alternative that best meets the goals or needs of the applicant or the County.

Alternative A, the No Project/No Development alternative, has no impacts as it does not propose any change to the site. The No Project Alternative would be environmentally superior to the Project because the potentially significant adverse impacts associated with the Project would be avoided. However, the

No Project alternative would fail to satisfy the most basic of the primary Project objectives. CEQA Guidelines Section 16126.6 (e)(2) provides that, if the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

As indicated in the other chapters of the Draft EIR, the proposed Project would not result in any significant and unavoidable impacts. All potential impacts of the Project are either less than significant or can be reduced to less than significant levels through compliance with mandatory regulatory requirements and/or with implementation of the mitigation measures contained in this Draft EIR. The Project, as well as Alternative B and Alternative C would each result in mostly similar potentially significant environmental effects that can be mitigated to less than significant levels through implementation of similar design features, compliance with the same regulatory requirements and implementation of similar mitigation measures identified for the Project.

- Alternative B would have almost identical development impacts as the Project, and only reduce post-development effects on traffic, air quality and noise in modest and relative terms, with limited potential for reduced effects on stormwater and runoff quality, and would not eliminate any specific impact or need for a particular mitigation measure. Therefore, the Project, Alternative B and Alternative C are relatively equal in their comparative environmental effects (i.e., less than significant), with only marginal differences.
- Alternative C would not reduce any post-construction impacts, but would reduce and/or avoid potentially significant conflicts with those Specific Plan policies and guidelines adopted to preserve the existing land contour, topography and natural landform of the sites. It could also potentially lessen the severity of construction noise and vibration impacts related to mass grading of the sites.

With respect to most environmental considerations, there is generally very limited environmental benefit that would result from reducing the density of development at the Project sites to below densities as allowed under the Fairview Area Specific Plan. Therefore, the Project and Alternative B are environmentally equal, and without substantially different consequences.

Given that the intent of the Fairview Area Specific Plan includes protecting and preserving important environmental resources and significant natural features, and promoting development that is sensitive to variations in topography and the rural residential character of the area, Alternative C – Greater Consistency with the Fairview Area Specific Plan is more fully consistent with the principles and guidelines of that Plan, and is environmentally superior to the Project.

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## Other CEQA Considerations

This chapter of the Draft EIR contains discussion of the following additional CEQA considerations:

- Mandatory Findings of Significance
- Significant Irreversible Modifications in the Environment
- Significant Unavoidable Impacts

### Mandatory Findings of Significance

Appendix G of the CEQA Guidelines (Environmental Checklist) contains a list of mandatory findings of significance that must be considered:

1. Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of California history or prehistory?
2. Does the Project have impacts that are individually limited, but cumulatively considerable?
3. Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

### Quality of the Environment

Project implementation would lead to development that could adversely affect the environment in specific ways discussed in this EIR, such as on air quality, special-status plants and animals and undetected cultural resources. However, these impacts of the Project are expected to be avoided or reduced to levels of less than significant with implementation of identified mitigation measures. Provided that all identified regulations are adhered to, and the mitigation measures contained within this document are implemented, the Project would not substantially degrade the quality of the environment.

### Cumulative Impacts

The cumulative context for analysis in this EIR is fully described in Chapter 9: Land Use of this Draft EIR. That cumulative context includes anticipated new development in the vicinity of the Project pursuant to buildout of the Fairview Area Specific Plan.

The analysis in each subject area of this EIR has considered the cumulative impact of recent past, current and reasonably anticipated future development, with notable attention to the topics of aesthetics, air quality, hydrology and traffic. Other future development in the immediate vicinity would be required to

appropriate levels of environmental review to determine any project-specific impacts, when and if such development were proposed.

Cumulative impacts of the Project are considered to be less than significant with mitigation. As discussed in the preceding chapters of this EIR, implementation of the Project would not cumulatively impact the environment provided all regulations of all applicable governing bodies are adhered to, and the mitigation measures contained within this document are implemented.

### **Adverse Effects on Human Beings**

The Project would not have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Impacts related to human beings could occur if the Project were located in area subject to adverse impacts from an existing or reasonably foreseeable natural hazard or adverse physical environmental condition. As discussed in the individual topic analyses in Chapters 4-12, no such natural hazards or environmental conditions exist in the Project area, nor would the Project expose people to significant new hazards. There would be no other adverse effects on human beings.

### **Significant Irreversible Environmental Changes**

Section 15126.2(c) of the CEQA Guidelines requires that an EIR identify any significant irreversible environmental changes that could be caused by a project. Significant irreversible environmental changes may include (1) changes in land use that commit future generations to similar uses (such as highway improvements that provide access to previously inaccessible area); (2) irreversible changes from environmental accidents; (3) an irretrievable commitment of resources; and (4) consumption of non-renewable resources. However, Section 15127 exempts this analysis from all projects except those in which the EIR is prepared in connection with any of the following activities:

- (a) The adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency;
- (b) The adoption by a Local Agency Formation Commission of a resolution making determinations;  
or
- (c) A project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act of 1969, 42 U.S.C. 4321-4347.

Although the Project does not meet the criteria given in Section 15127, the information is presented here for informational purposes.

### **Commitment to Changed Future Land Uses**

The Project is generally consistent with the pattern of existing residential land use in the vicinity. The Project would not constitute a change in land use which would commit future generations to a pattern of development in the immediate Project vicinity that would substantially alter the character of the area.



### **Irreversible Changes from Environmental Accidents**

No significant environmental damage, such as what could occur as a result of an accidental spill or explosion of hazardous materials, is anticipated due to implementation of the proposed project. Furthermore, compliance with federal, State and County regulations would reduce to a less-than-significant level the possibility that hazardous substances within the Project site would cause significant environmental damage.

### **Irretrievable Commitment of Resources and Use of Nonrenewable Resources**

An irretrievable commitment of resources could result if the Project caused the loss of agricultural or forested lands or the loss of access to mining reserves. However, this Project does not consume or limit access to agricultural, forested, or mineral resources.

Development of the Project area as proposed could result in the commitment of non-renewable resources (e.g., gravel and petroleum products) and slowly renewable resources (e.g., wood products) used in construction. Operation of the proposed Project would require a commitment of water and energy resources (e.g., petroleum products for vehicle operation, natural gas and electricity for lighting, heating, and cooling). However, the relative amount of resource use is low and would comply with applicable regulations.

Consumption of nonrenewable resources can include increased consumption of nonrenewable energy and consumption of resources used in construction. Construction of the Project would require the use of energy, including energy produced from nonrenewable sources. Energy consumption would also occur during the operational period of the Project due to the use of automobiles and appliances. However, the Project would incorporate energy-conserving features, as required by the Uniform Building Code and the California Energy Code Title 24.

### **Significant and Unavoidable Impacts**

No significant and unavoidable impacts have been identified. All impacts are either less than significant or can be reduced to that level through mitigation.



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## **References**

Alameda, County of, *Unincorporated Areas Community Climate Action Plan*, February 4, 2014

General Plan, *Safety Element*, 2014

Alameda County *Pedestrian Plan*, October 2012

Alameda County *Bicycle Master Plan for Unincorporated Areas*, 2006

- Fairview Area Plan* - part of the County General Plan, September 1997
- General Plan, *Noise Element*, July 1975
- General Plan, *Scenic Route Element of the General Plan*, May 1966
- Municipal Code
- Alameda Local Agency Formation Commission (LAFCO), *Final Municipal Service Review, Volume II – Utility Services*, Burr Consulting, November 10, 2005
- Association of Bay Area Governments (ABAG), Resilience Program Map 2016; accessed at:  
<http://gis.abag.ca.gov/website/Hazards/?hlyr=femaZones#nogo1>
- ABAG, Association of Bay Area Governments, <http://gis.abag.ca.gov/website/Landslides/viewer.html>
- Balance Hydrologics, Inc., *Summary of Preliminary Stormwater Infrastructure Sizing for the D Street Properties* (Tracts 8296 and 8297), September 2015
- Bay Area Air Quality Management District (BAAQMD), *Air Quality Standards and Attainment Status*, available at <http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status>
- BAAQMD, Air Pollution Summaries, accessed at  
<http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx>
- BAAQMD, *CEQA Guidelines*, May 2011
- BAAQMD, Source Inventory of Bay Area Greenhouse Gas Emissions, February 2010, available at  
<http://www.baaqmd.gov/Divisions/Planning-and-Research/Emission-Inventory/Greenhouse-Gases.aspx>
- BAAQMD, in association with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), *Bay Area 2010 Clean Air Plan*, September 2010
- BAAQMD, *CEQA Thresholds Options and Justification Report*, 2009
- BioMaAS Inc., *Field Survey and Analysis of the Habitat Value and Potential for Presence for Alameda Whipsnake*, October 2016
- Brekke, L.D., et al, “*Climate Change Impacts Uncertainty for Water Resources in the San Joaquin River Basin, California.*” *Journal of the American Water Resources Association*, 2004
- California Air Resources Board (CARB), Public Workshop to Discuss Establishing the 1990 Emissions Level and the California 2020 Limit and Developing Regulations to Require Reporting of Greenhouse Gas Emissions, December 2006,
- California Climate Action Team, 2006
- California Climate Change Center, *Our Changing Climate: Assessing the Risks to California*, July 2006
- California Department of Conservation, California Important Farmland Finder; available at:  
<http://maps.conservation.ca.gov/ciff>. accessed September 23, 2014
- California Department of Fish and Wildlife, California Natural Diversity Database, 2016
- California Department of Transportation (Caltrans), State Scenic Highway Mapping System, accessed at  
[http://www.dot.ca.gov/hq/LandArch/scenic\\_highways/index.htm](http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm)

- Caltrans, *Transportation and Construction Vibration Guidance Manual and Technical Noise Supplement*, September 2013
- Caltrans, *Guide for the Preparation of Traffic Impact Studies*, 2001
- California Energy Commission, *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2009*, December 2011
- California EPA, State Water Resources Board, Construction General Permit Fact Sheet, September 2009, accessed at [http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml)
- California Native Plant Society, Electronic Inventory, 2016
- Carlson Barbee & Gibson, Inc., Vesting Tentative Map , Preliminary Stormwater Management Plan for D Street Properties, March 2016
- Federal Emergency Management Agency (FEMA), Flood Insurance Rate Map (FIRM) Map No. 06001C0291G, August 2009
- Fredrickson, David A., *Spatial and Cultural Units in Central California Archaeology, Toward a New Taxonomic Framework for Central California: Essays by James A. Bennyhoff and David A. Fredrickson*, R. Hughes editor, 1994
- Harris, *Handbook of Acoustical Measurements and Noise Control*, 1998
- Illingworth & Rodkin, Inc., *Noise Analysis for the D Street Properties (Tracts 8296 and 8297)*, September 2015
- Intergovernmental Panel on Climate Change, *Climate Change 2007: Synthesis Report*, November 2007
- International Panel on Climate Change Special Report on Emissions Scenarios, 2000, [www.grida.no/climate/ipcc/emission/002.htm](http://www.grida.no/climate/ipcc/emission/002.htm)
- Justiniano & Associates, *Geotechnical Investigation Report and Updates, Proposed 31 Single Family Residences at 3231 & 324 7 D Street*, August 10, 2015
- Kiparsky, M. and P.H. Gleick, *Climate Change and California Water Resources: A Survey and Summary of the Literature*, July 2003
- Markham, Henry H., *Resources of California*. State Office, Sacramento, CA, 1893
- Moratto, Michael J., *California Archaeology*, 1984.
- Parmesan, C. and H. Galbraith, *Observed Impacts of Global Climate Change in the U.S.*, November 2004
- TJKM, Inc., Technical Traffic and Circulation Analysis for the D Street Properties (Tracts 8296 and 8297), October 2016
- U.S. Census Bureau, 2010
- U.S. Department of Transportation, Office of Planning and Environment - Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006
- U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2010*, Table 2-1: Recent Trends in U.S. Greenhouse Gas Emissions and Sinks, April 15, 2012,
- USEPA, *Legal Compilation on Noise*, Vol. 1, p. 2-104, 1973
- U.S. Fish and Wildlife Service, National Wetland Inventory, accessed at <http://www.fws.gov/wetlands/Data/mapper.html>

USFWS, Critical Habitat Portal, accessed at  
<http://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265ad4fe09893cf75b8dbfb77>

USFWS, Critical Habitat for the Alameda Striped Racer, October 2, 2006 and Draft Recovery Plan, 2011

Willard, Ruth Hendricks, *Alameda California Crossroads: An Illustrated History*, 1988

William Self Associates, Inc. (WSA), *Cultural Resources Assessment Report (CRAR)*, November 2015

Zander Associates, *Biological Site Reconnaissance Survey*, January 12, 2016 and *Sensitive Plant Surveys*, July 2016