RECON

# Noise Analysis for the Bella Mar Project San Diego, California

*Prepared for*
Red Tail Acquisitions LLC
2082 Michelson Drive, 4th Floor
Irvine, CA 92612

*Prepared by*
RECON Environmental, Inc.
3111 Camino del Rio North, Suite 600
San Diego, CA 92108-5726
P 619.308.9333

RECON Number 8575
December 21, 2020

Jessica Fleming,
Environmental Specialist,
Noise, Air Quality, and GHG

# TABLE OF CONTENTS

# TABLE OF CONTENTS (CONT.)

## FIGURES



## TABLES



## ATTACHMENTS

# Acronyms and Abbreviations

| | |
|---|---|
| Caltrans | California Department of Transportation |
| CEQA | California Environmental Quality Act |
| City | City of San Diego |
| CNEL | community noise equivalent level |
| dB | decibel |
| dB(A) | A-weighted decibel |
| FHWA | Federal Highway Administration |
| HVAC | heating, ventilation, and air conditioning |
| I-5 | Interstate 905 |
| $L_{eq}$ | one-hour equivalent noise level |
| LOS | Level of Service |
| $L_{pw}$ | sound power level |
| MHPA | Multi-Habitat Planning Area |
| MSCP | Multiple Species Conservation Program |
| SDCRAA | San Diego County Regional Airport Authority |
| SDMTS | San Diego Metropolitan Transit System |
| SEL | sound exposure level |

# Executive Summary

The Bella Mar project (project) site is located at 408 Hollister Street in the city of San Diego, California. The project site is located immediately west of Hollister Avenue, east of Interstate 5 (I-5), north of Conifer Avenue, and south of Louret Avenue, at the mouth of the Otay river valley in the city of San Diego. The 14.62-acre project site is currently undeveloped. The project proposes a rezone from AR-1-2 and OF-1-1 to RM-2-5 and the construction of 380 multi-family units.

This report discusses potential noise impacts from the construction and operation of the project. As part of this assessment, noise levels due to vehicle traffic were calculated and evaluated against City of San Diego (City) Municipal Code, General Plan Noise Element, and Significance Determination Thresholds. The project would also be reviewed for compatibility with the Brown Field Airport Land Use Compatibility Plan (ALUCP). In addition to compatibility, the potential for noise to impact adjacent receivers from future on-site sources and construction activity was assessed. Where impacts were identified, measures have been identified to comply with the City's noise standards and California Environmental Quality Act (CEQA) Significance Thresholds. A summary of the findings is provided below.

# Construction Noise

Project construction noise would be generated by diesel engine-driven construction equipment used for site preparation and grading, building construction, loading, unloading, and placing materials and paving. Construction noise would potentially result in short-term impacts to surrounding properties. A single-family residence is located immediately south of the project site. Additionally, Multi-Habitat Planning Area (MHPA) habitat is located north of the project site. The construction noise level limit at residential uses is 75 A-weighted decibels [dB(A)] one-hour equivalent noise level ($L_{eq}$). In addition, for occupied MHPA, although no formal standards have been issued by any agencies, a precedent set over many years is that noise sources associated with projects should not result in noise levels that exceed 60 dB(A) $L_{eq}$ or the existing ambient noise level if greater than 60 dB(A) $L_{eq}$ during the breeding season of federally listed threatened or endangered bird species known to occupy the MHPA lands.

As calculated in this analysis, construction noise levels are not anticipated to exceed 75 dB(A) $L_{eq}$ at the adjacent or on-site residential uses, or the existing ambient noise level at the adjacent MHPA habitat. Although the existing adjacent residences and MHPA would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. Therefore, construction activities would result in less than significant noise impacts.

# Vehicle Traffic Noise

## On-site Noise Compatibility

The main source of traffic noise at the project site is vehicle traffic on I-5 and Hollister Street. According to the General Plan Noise Element, multi-family residential uses are considered

"compatible" with exterior noise levels up to 60 community noise equivalent level (CNEL) and "conditionally compatible" with exterior noise levels up to 70 CNEL. The City's interior noise level standard for all residential uses is 45 CNEL.

As calculated in this analysis, noise levels at the common exterior use areas would range from 44 to 56, which would be compatible with City standards. However, noise levels at the second- and third-floor balconies closest to I-5 would exceed the City's "conditionally compatible" level of 70 CNEL. Therefore, the project would include noise attenuating design measures in the form of 3.5-foot barriers constructed around those balconies identified in Figure 8 of this analysis. With construction of these barriers, noise levels would be reduced to less than 70 CNEL. The following specific design parameters would be required:

**On-Site Noise Barriers.** Exterior noise levels at the second- and third-floor balconies identified as Receivers 5, 8, and 14 through 17 on Figure 8 shall be reduced to the City's "conditionally compatible" noise level of 70 CNEL for multi-family uses. Noise reduction for exterior traffic noise impacts can be accomplished through on-site noise barriers. Solid 3.5-foot balcony railings as identified on Figure 8 shall be constructed. The sound attenuation barriers must be solid and free of cracks or holes. It can be constructed of masonry, wood, plastic, fiberglass, steel, plexi-glass or a combination of those materials, as long as there are no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch total thickness or have a density of at least 3.5 pounds per square foot.

The interior noise level standard for residential uses is 45 CNEL. Exterior noise levels at the residential building façades would be as high as 76 CNEL at the buildings located closest to I-5. A noise reduction of up to 31 decibels (dB) would be required to achieve an interior noise level of 45 CNEL or less. Prior to the issuance of building permits, as a condition of approval, a site-specific interior noise analysis would be prepared demonstrating that the window, door, and wall components would achieve a necessary sound transmission class rating required to reduce interior noise levels to 45 CNEL or less. The following condition of approval would be required:

**Interior Noise.** As a condition of approval, interior noise levels shall be reduced to the City's threshold of 45 CNEL or less in all habitable rooms for the buildings identified on Figure 9. Sound-resistant construction for walls shall achieve a combined sound transmission class rating up to 31 dB. Appropriate means of air circulation and provision of fresh air shall be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system shall meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

# Off-site Vehicle Traffic Noise

The project would increase traffic volumes on local roadways. However, the project would not substantially alter the vehicle classification mix on local or regional roadways nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be increased traffic volumes. A substantial noise

increase is defined as an increase of 3 dB above existing conditions as stated in the City's CEQA significance standards.

As calculated in this analysis, direct off-site noise level increases due to the project would be less than 1 dB. Therefore, direct off-site noise impacts associated with the project would be less than significant. Similar to direct traffic noise impacts, a cumulative traffic noise impact occurs when the noise level would exceed the applicable standard and a substantial noise level increase compared to existing noise occurs. As shown, the total horizon (year 2050) with project increase over the existing condition would range from 0.9 dB to 3.0 dB. A 3 dB increase would occur along Hollister Street between Main Street and Charles Avenue. However, the project's contribution to the cumulative noise increase would be 0.4 dB. Additionally, there are no sensitive receivers located adjacent to this roadway segment. The land uses adjacent to this roadway segment include a storage facility and industrial uses. The total future noise level would be less than the noise compatibility standards for these land uses. Therefore, the project would result in a less than cumulatively considerable off-site noise level increase, and cumulative traffic noise impacts associated with the project would be less than significant.

# Aircraft Noise

Brown Field is located approximately five miles east of the project site. The Brown Field ALUCP (San Diego County Regional Airport Authority 2010) establishes land use noise compatibility guidelines. The 60 CNEL noise contour defines the noise impact area for Brown Field, and all land uses located outside the 60 CNEL noise contour would be consistent with the ALUCP noise compatibility policies. Based on the noise contours contained in the Brown Field ALUCP, the project site is located approximately 3.5 miles outside the 60 CNEL contour for Brown Field. Thus, noise levels due to aircraft operations at Brown Field would be well less than 60 CNEL, and noise impacts would be less than significant.

# On-site Generated Noise

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of any residential complex, such as vehicles arriving and leaving, children at play, and landscape maintenance machinery. None of these noise sources is anticipated to violate the City's Noise Abatement and Control Ordinance or result in a substantial permanent increase in existing noise levels. However, the project would include rooftop heating, ventilation, and air conditioning (HVAC) units that have the potential to produce noise in excess of City limits. Rooftop HVAC noise levels were modeled at the adjacent property lines. On-site generated noise levels would range from 38 to 43 dB(A) $L_{eq}$ at the property lines, which would be less than the most restrictive noise level limit of 45 dB(A) $L_{eq}$. Noise levels would not exceed the applicable Noise Abatement and Control Ordinance limits at the property lines. Noise levels would also be less than 60 dB(A) $L_{eq}$ at the adjacent MHPA.

# 1.0 Introduction

## 1.1 Project Description

The Bella Mar project (project) site is located at 408 Hollister Street in the city of San Diego, California. The project site is located immediately west of Hollister Avenue, east of Interstate 5, north of Conifer Avenue, and south of Louret Avenue, at the mouth of the Otay River valley in the city of San Diego. The 14.62-acre project site is currently undeveloped. Figure 1 shows the regional location and Figure 2 shows an aerial photograph of the project site and vicinity.

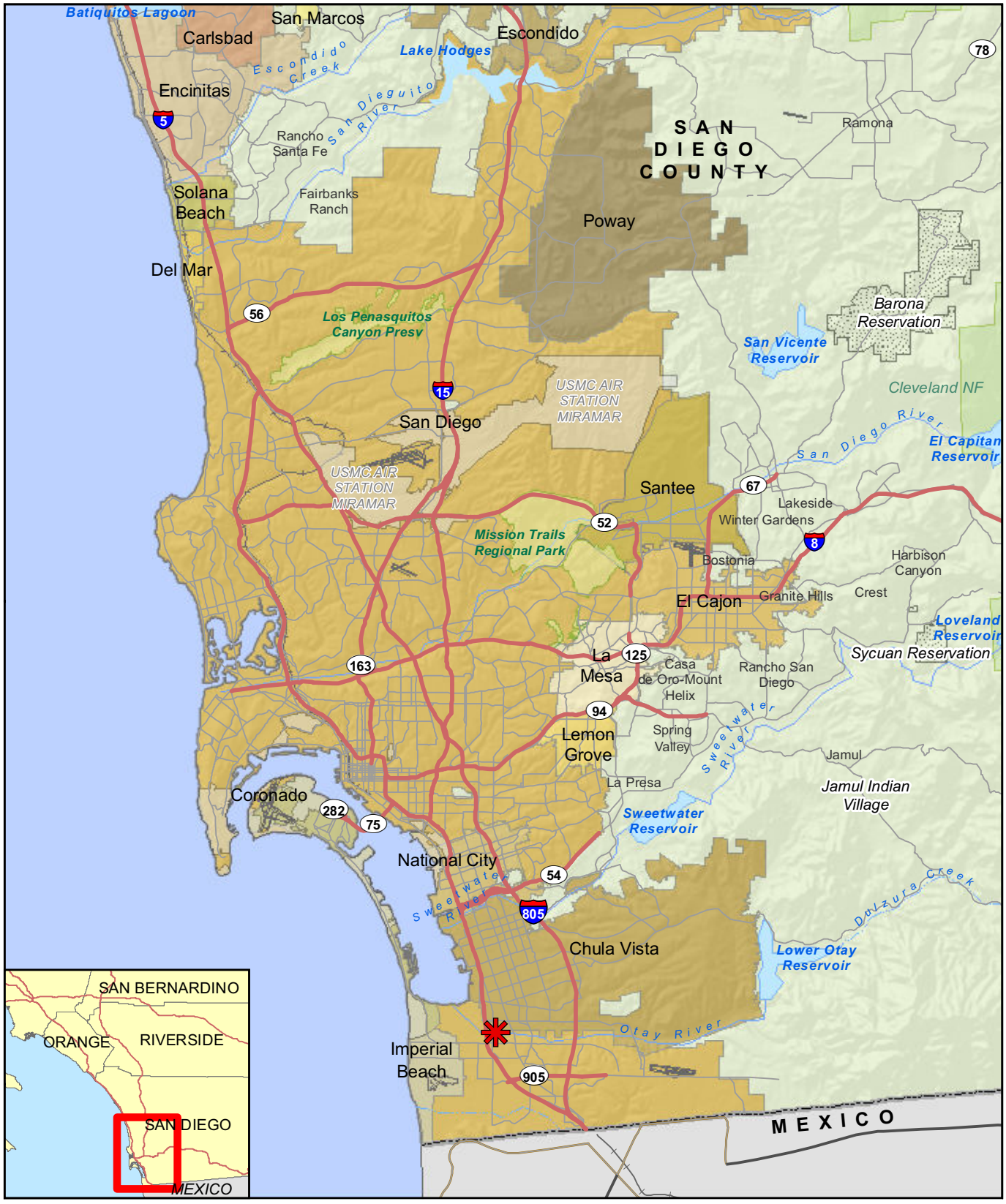
The project proposes a rezone from AR-1-2 and OF-1-1 to RM-2-5 and the construction of 380 multi-family units. The development would consist of two neighborhoods, a north neighborhood and south neighborhood. The north neighborhood would contain 14 separate, three- and four-story buildings with a total of 280 market rate dwelling units, in addition to a 1,500-square-foot option leasing building and a 2,500-square-foot club/cabana area. The south neighborhood comprises a single building with both three- and four-story elements, consisting of 100 affordable housing dwelling units, in addition to a 4,500-square-foot community building. Figure 3 shows the proposed site plan.

## 1.2 Fundamentals of Noise

Sound levels are described in units called the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease.

Additionally, in technical terms, sound levels are described as either a "sound power level" or a "sound pressure level," which while commonly confused are two distinct characteristics of sound. Both share the same unit of measure, the dB. However, sound power, expressed as $L_{pw}$, is the energy converted into sound by the source. The $L_{pw}$ is used to estimate how far a noise will travel and to predict the sound levels at various distances from the source. As sound energy travels through the air, it creates a sound wave that exerts pressure on receivers such as an eardrum or microphone and is the sound pressure level. Noise measurement instruments only measure sound pressure, and noise level limits used in standards are generally sound pressure levels.

The human ear is not equally sensitive to all frequencies within the sound spectrum. To accommodate this phenomenon, the A-scale, which approximates the frequency response of the average young ear when listening to most ordinary everyday sounds, was devised. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the "A-weighted" noise scale is used for measurements and standards involving the human perception of noise. Noise levels using A-weighted measurements are designated with the notation dB(A).




Project Location

# FIGURE 1
Regional Location

RECON

M:\JOBS5\8575\common_gis\fig1.mxd 3/13/2019 bma

Image Source: Nearmap (flown February 2019)


0 Feet 300

Project Boundary

Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig2.mxd 3/13/2019 bma

# FIGURE 2

## Project Location on Aerial Photograph

Image Source: Nearmap (flown February 2019)


Project Boundary

Site Plan Lines

Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig3_nos.mxd 7/15/2019 bma

FIGURE 3

Site Plan

The impact of noise is not a function of loudness alone. The time of day when noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the one-hour equivalent noise level ($L_{eq}$), the community noise equivalent level (CNEL), and the sound exposure level (SEL). The CNEL is a 24-hour equivalent sound level. The CNEL calculation applies an additional 5 dB(A) penalty to noise occurring during evening hours, between 7:00 p.m. and 10:00 p.m., and an additional 10 dB(A) penalty is added to noise occurring during the night, between 10:00 p.m. and 7:00 a.m. These increases for certain times are intended to account for the added sensitivity of humans to noise during the evening and night. The SEL is a noise level over a stated period of time or event and normalized to one second.

Sound from a small, localized source (approximating a "point" source) radiates uniformly outward as it travels away from the source in a spherical pattern, known as geometric spreading. The sound level decreases or drops off at a rate of 6 dB(A) for each doubling of the distance.

Traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 dB(A) for each doubling of distance.

The propagation of noise is also affected by the intervening ground, known as ground absorption. A hard site (such as parking lots or smooth bodies of water) receives no additional ground attenuation, and the changes in noise levels with distance (drop-off rate) are simply the geometric spreading of the source. A soft site (such as soft dirt, grass, or scattered bushes and trees) receives an additional ground attenuation value of 1.5 dB(A) per doubling of distance. Thus, a point source over a soft site would attenuate at 7.5 dB(A) per doubling of distance.

Human perception of noise has no simple correlation with acoustical energy. A change in noise levels is generally perceived as follows: 3 dB(A) barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise (California Department of Transportation [Caltrans] 2013).

# 2.0 Applicable Standards

## 2.1 City of San Diego General Plan

The City of San Diego's (City's) Noise Element of the General Plan specifies compatibility standards for different land use categories (Table 1). Multi-family residential uses are considered "compatible" with exterior noise levels up to 60 CNEL and "conditionally compatible" with exterior noise levels up to 70 CNEL. The City's interior noise level standard for all residential uses is 45 CNEL.

**Table 1**
**City of San Diego Land Use – Noise Compatibility Guidelines**

| Land Use Category | Exterior Noise Exposure [dB(A) CNEL] 60 | 65 | 70 | 75 |
|---|---|---|---|---|
| *Parks and Recreational* | | | | |
| Parks, Active and Passive Recreation | | | | |
| Outdoor Spectator Sports, Golf Courses; Water Recreational Facilities; Indoor Recreation Facilities | | | | |
| *Agricultural* | | | | |
| Crop Raising and Farming; Community Gardens, Aquaculture, Dairies; Horticulture Nurseries and Greenhouses; Animal Raising, Maintaining and Keeping; Commercial Stables | | | | |
| *Residential* | | | | |
| Single Dwelling Units; Mobile Homes | | **45** | | |
| Multiple Dwelling Units<br>**For uses affected by aircraft noise, refer to Policies NE-D.2. & NE-D.3.* | | **45** | **45** | |
| *Institutional* | | | | |
| Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Child Care Facilities | | **45** | | |
| Other Educational Facilities including Vocational/Trade Schools and Colleges and Universities | | **45** | **45** | |
| Cemeteries | | | | |
| *Retail Sales* | | | | |
| Building Supplies/Equipment; Food, Beverage, and Groceries; Pets and Pet Supplies; Sundries, Pharmaceutical, and Convenience Sales; Wearing Apparel and Accessories | | | **50** | **50** |
| *Commercial Services* | | | | |
| Building Services; Business Support; Eating and Drinking; Financial Institutions; Maintenance & Repair; Personal Services; Assembly and Entertainment (includes public and religious assembly); Radio and Television Studios; Golf Course Support | | | **50** | **50** |
| Visitor Accommodations | | **45** | **45** | **45** |
| *Offices* | | | | |
| Business and Professional; Government; Medical, Dental, and Health Practitioner; Regional and Corporate Headquarters | | | **50** | **50** |
| *Vehicle and Vehicular Equipment Sales and Services Use* | | | | |
| Commercial or Personal Vehicle Repair and Maintenance; Commercial or Personal Vehicle Sales and Rentals; Vehicle Equipment and Supplies Sales and Rentals; Vehicle Parking | | | | |
| *Wholesale, Distribution, Storage Use Category* | | | | |
| Equipment and Materials Storage Yards; Moving and Storage Facilities; Warehouse; Wholesale Distribution | | | | |
| *Industrial* | | | | |
| Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking and Transportation Terminals; Mining and Extractive Industries | | | | |
| Research and Development | | | | **50** |

| | | | |
|---|---|---|---|
| | **Compatible** | **Indoor Uses** | Standard construction methods should attenuate exterior noise to an acceptable indoor noise level. |
| | | **Outdoor Uses** | Activities associated with the land use may be carried out. |
| **45, 50** | **Conditionally Compatible** | **Indoor Uses** | Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas. |
| | | **Outdoor Uses** | Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable. |
| | **Incompatible** | **Indoor Uses** | New construction should not be undertaken. |
| | | **Outdoor Uses** | Severe noise interference makes outdoor activities unacceptable. |

SOURCE: City of San Diego 2015.

## 2.2 CEQA Significance Thresholds

The noise section of the City's Significance Determination Thresholds for the California Environmental Quality Act (CEQA) identifies thresholds for traffic noise (City of San Diego 2016). These noise thresholds are summarized in Table 2. According to these thresholds, exposure of multi-family residential uses to noise levels in excess of 65 CNEL would be considered a significant impact. This exterior noise level is applied at exterior usable areas.

## 2.3 City of San Diego Municipal Code

### 2.3.1 On-Site Generated Noise

Section 59.5.0401 of the City's Noise Abatement and Control Ordinance states that:

A. It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit.

B. The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts.

The applicable noise limits of the City's Noise Abatement and Control Ordinance are summarized in Table 3.

A single-family residence is located south of the project site. The proposed density of the project would be greater than 1 unit per 2,000 square feet. Therefore, the applicable limits between the project site and the single-family residential use are 55 dB(A) $L_{eq}$ during the daytime hours, 50 dB(A) $L_{eq}$ during the evening hours, and 45 dB(A) $L_{eq}$ during the nighttime hours.

**Table 2**
**Traffic Noise Significance Thresholds**
**[dB(A) CNEL]**

| Structure or Proposed Use that would be Impacted by Traffic Noise | Interior Space | Exterior Useable Space* | General Indication of Potential Significance |
|---|---|---|---|
| Single-family detached | 45 dB | 65 dB | Structure or outdoor useable area is <50 feet from the center of the closest (outside) lane on a street with existing or future ADTs >7,500 |
| Multi-family, school, library, hospital, day care center, hotel, motel, park, convalescent home | Development Services Department ensures 45 dB pursuant to Title 24 | 65 dB | |
| Office, church, business, professional uses | n/a | 70 dB | Structure or outdoor useable area is <50 feet from the center of the closest lane on a street with existing or future ADTs >20,000 |
| Commercial, retail, industrial, outdoor spectator sports uses | n/a | 75 dB | Structure or outdoor useable area is <50 feet from the center of the closest lane on a street with existing or future ADTs >40,000 |

SOURCE: City of San Diego 2016.
ADT = average daily trips; dB = decibel
*If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.

| Table 3<br>Applicable Noise Level Limits | | |
|---|---|---|
| Land Use | Time of Day | One-Hour Average Sound Level [dB(A) $L_{eq}$] |
| Single-family Residential | 7:00 a.m. to 7:00 p.m.<br>7:00 p.m. to 10:00 p.m.<br>10:00 p.m. to 7:00 a.m. | 50<br>45<br>40 |
| Multi-family Residential (up to a maximum density of 1 unit/2,000 square feet) | 7:00 a.m. to 7:00 p.m.<br>7:00 p.m. to 10:00 p.m.<br>10:00 p.m. to 7:00 a.m. | 55<br>50<br>45 |
| All other Residential | 7:00 a.m. to 7:00 p.m.<br>7:00 p.m. to 10:00 p.m.<br>10:00 p.m. to 7:00 a.m. | 60<br>55<br>50 |
| Commercial | 7:00 a.m. to 7:00 p.m.<br>7:00 p.m. to 10:00 p.m.<br>10:00 p.m. to 7:00 a.m. | 65<br>60<br>60 |
| Industrial or Agricultural | Anytime | 75 |
| SOURCE: City of San Diego Noise Abatement and Control Ordinance Section 59.5.0401.<br>dB(A) $L_{eq}$ = A-weighted decibels equivalent noise level | | |

### 2.3.2 Construction Noise

## 2.4 Brown Field Airport Land Use Compatibility Plan

The San Diego County Regional Airport Authority (SDCRAA), serving as the Airport Land Use Commission, is responsible for the management and development of the Airport Land Use Compatibility Plan (ALUCP) for each public use and military airport in San Diego County. The project site is within the Airport Influence Area (AIA) for Brown Field, located approximately five miles east of the project site. The Brown Field ALUCP (SDCRAA 2010) establishes land use noise compatibility guidelines. As stated in the ALUCP, the 60 CNEL contour defines the noise impact area for Brown Field and is the threshold for evaluation. All land uses located outside the 60 CNEL noise contour are consistent with the noise compatibility policies. Residential land uses are conditionally compatible with noise exterior noise levels ranging from 60 to 65 CNEL, and incompatible with noise levels above 65 CNEL. Additionally, residential uses are required to be capable of attenuating exterior noise to and interior noise level of 45 CNEL.

## 2.5 California Code of Regulations

Interior noise levels for habitable rooms are regulated also by Title 24 of the California Code of Regulations California Noise Insulation Standards. Title 24, Chapter 12, Section 1207.4, of the California Building Code requires that interior noise levels attributable to exterior sources not exceed 45 CNEL in any habitable room (California Code of Regulations 2016). A habitable room is a room used for living, sleeping, eating, or cooking. Bathrooms, closets, hallways, utility spaces, and similar areas are not considered habitable rooms for this regulation (24 California Code of Regulations, Chapter 12, Section 1207.4 2016).

## 2.6 Sensitive Habitat/MHPA Land Use Adjacency Guidelines

The U.S. Fish and Wildlife Service and other resource agencies, such as the U.S. Army Corps of Engineers and California Department of Fish and Wildlife, require limitation of noise levels to the habitats of threatened and endangered birds. Although no formal standards have been issued by these agencies, the precedent set over many years is that projects shall not result in noise levels that exceed 60 dB(A) $L_{eq}$, or the existing ambient noise level if greater than 60 dB(A) $L_{eq}$, at designated Multi-Habitat Planning Area (MHPA) habitat or a known nesting site for a federally listed threatened or endangered bird species during the breeding season. Based on this precedent, during the breeding seasons, the City requires that noise levels generated by a project shall not exceed 60 dB(A) $L_{eq}$ at the edge of the occupied habitat or the existing ambient level if the ambient level is above 60 dB(A) $L_{eq}$ (City of San Diego 2012 and 2016). Likewise, the City has regulations to protect its MHPA lands. The project has the potential for indirect impacts to the adjacent MHPA along the northern boundary and is therefore required to adhere to Multiple Species Conservation Program (MSCP) Section 1.4.3 (City of San Diego 1997), land uses adjacent guidelines to ensure minimal impacts to the MHPA. With respect to noise, due to the site's location adjacent to or within the MHPA where the Qualified Biologist has identified potential nesting habitat for listed avian species, construction noise that exceeds the maximum levels allowed shall be avoided during the breeding seasons for least Bell's vireo (*Vireo bellii pusillus*) (March 15 to September 15) (RECON 2019). If protocol surveys are not conducted in suitable habitat during the breeding season for the aforementioned listed species, presence shall be assumed with implementation of noise attenuation measures which shall include assurance that construction noise.

# 3.0 Existing Conditions

Existing noise levels at the project site were measured on September 19, 2018, using one Larson-Davis LxT Sound Expert Sound Level Meters, serial number 3827. The following parameters were used:

| | |
|---|---|
| Filter: | A-weighted |
| Response: | Slow |
| Time History Period: | 5 seconds |

The meter was calibrated before and after each measurement. The meter was set 5 feet above the ground level for each measurement.

Noise measurements were taken to obtain typical ambient noise levels at the project site and in the vicinity. The weather was warm and sunny. Three 15-minute measurements were taken, as described below. The primary noise source was vehicle traffic on Interstate 5 (I-5). Other noise sources included vehicle traffic on Hollister Street and the San Diego Metropolitan Transit System (SDMTS) Blue Line Trolley. The measurement locations are shown on Figure 4, and detailed data is contained in Attachment 1.

Measurement 1 was located near the west end of the project site, approximately 100 feet east of the edge of I-5. The main source of noise at this location was vehicle traffic on I-5. During the 15-minute measurement period, vehicle traffic on northbound I-5 was counted. The average measured noise level was 72.7 dB(A) $L_{eq}$.

Measurement 2 was located near the center of the site, approximately 500 feet east of I-5. The main source of noise at this location was vehicle traffic on I-5. The average measured noise level was 67.3 dB(A) $L_{eq}$.

Measurement 3 was located near the eastern property line, approximately 50 feet from the centerline of Hollister Street. The main source of noise at this location was vehicle traffic on I-5. Secondary sources of noise included vehicle traffic on Hollister Street and two passing trolleys on the SDMTS Blue Line. During the 15-minute measurement period, vehicle traffic on Hollister Street was counted. The average measured noise level was 65.3 dB(A) $L_{eq}$.

Noise measurements are summarized in Table 4, and vehicle traffic counts are summarized in Table 5.

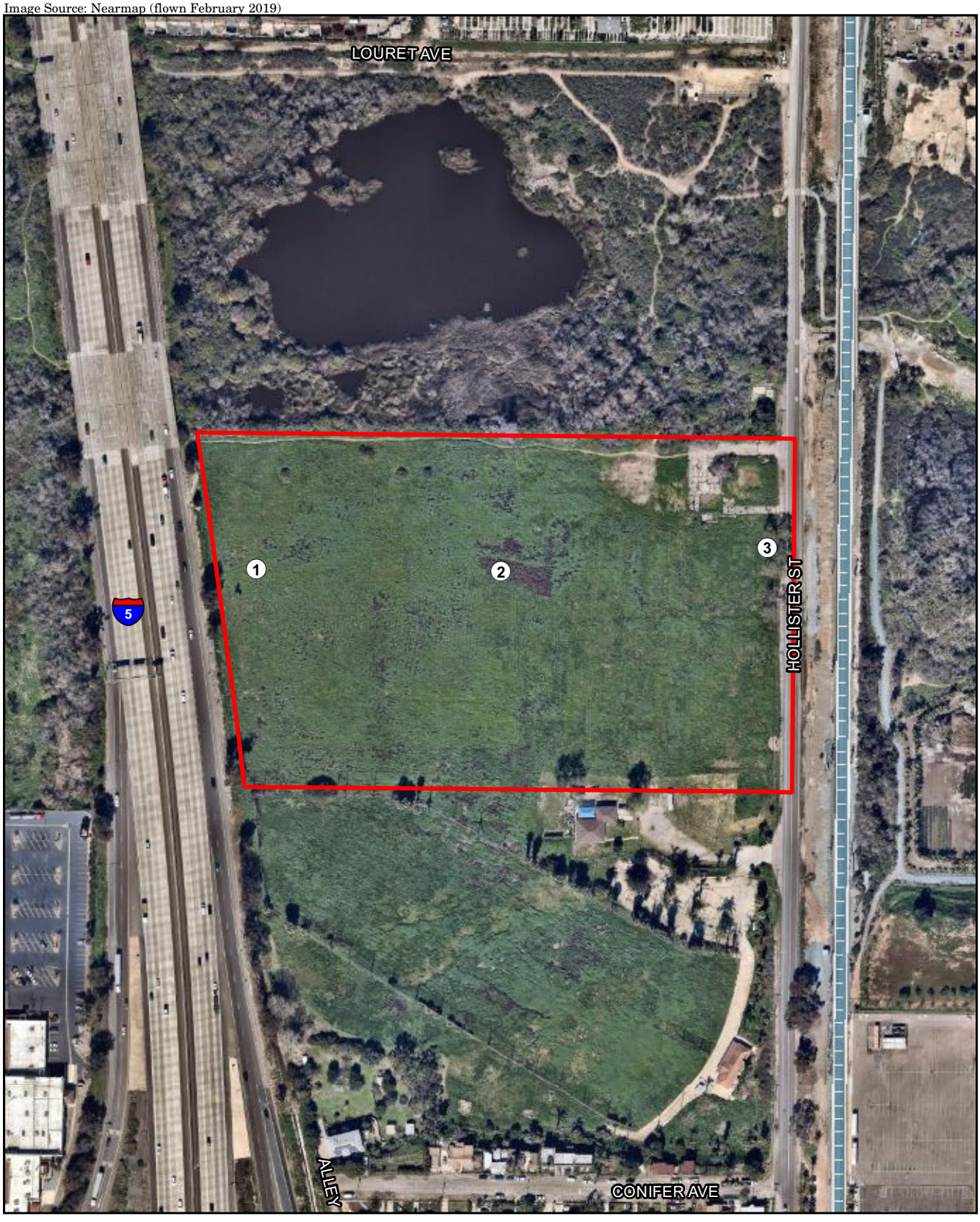
**Table 4**
**Noise Measurements**

| Measurement | Location | Time | Noise Sources | $L_{eq}$ | $L_{90}$ |
|---|---|---|---|---|---|
| 1 | Western property line; 100 feet east of I-5 | 1:09 P.M. – 1:24 P.M. | Vehicle traffic on I-5 | 72.7 | 70.9 |
| 2 | Center of project site; 500 feet east of I-5 | 1:38 P.M. – 1:53 P.M. | Vehicle traffic on I-5 | 67.3 | 65.2 |
| 3 | Eastern property line; 50 feet east of Hollister Street | 2:02 P.M. – 2:17 P.M. | Vehicle traffic on I-5 and Hollister Street; Trolley passes | 65.3 | 59.4 |
| Note: Noise measurement data is contained in Attachment 1. | | | | | |

**Table 5**
**15-minute Traffic Counts**

| Measurement | Roadway | Direction | Autos | Medium Trucks | Heavy Trucks | Buses | Motorcycles |
|---|---|---|---|---|---|---|---|
| 1 | I-5 | Northbound | 1,149 | 16 | 12 | 4 | 2 |
| 3 | Hollister Street | Northbound | 44 | 2 | 0 | 1 | 1 |
| | | Southbound | 39 | 3 | 0 | 2 | 0 |

Image Source: Nearmap (flown February 2019)




Measurement Locations

Project Boundary

Trolley Line

0 Feet 300

RECON

M:\JOBS5\8575\common_gis\fig4_nos.mxd 3/13/2019 bma

FIGURE 4

Noise Measurement Locations

# 4.0 Analysis Methodology

Noise level predictions and contour mapping were developed using noise modeling software, SoundPlan Essential, version 4.1 (Navcon Engineering 2018). SoundPLAN calculates noise propagation based on the International Organization for Standardization method (ISO 9613-2 – Acoustics, Attenuation of Sound during Propagation Outdoors). The model calculates noise levels at selected receiver locations using input parameter estimates such as total noise generated by each noise source; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. The model outputs can be developed as noise level contour maps or noise levels at specific receivers. In all cases, receivers were modeled at 5 feet above ground elevation, which represents the average height of the human ear.

## 4.1 Construction Noise Analysis

Project construction noise would be generated by diesel engine-driven construction equipment used for site preparation and grading, building construction, loading, unloading, and placing materials and paving. Diesel engine-driven trucks also would bring materials to the site and remove the soils from excavation.

Construction equipment with a diesel engine typically generates maximum noise levels from 80 to 90 dB(A) $L_{eq}$ at a distance of 50 feet (Federal Highway Administration [FHWA] 2006). Table 6 summarizes typical construction equipment noise levels.

**Table 6**
**Typical Construction Equipment Noise Levels**

| Equipment | Noise Level at 50 Feet [dB(A) $L_{eq}$][1] | Typical Duty Cycle[2] |
|---|---|---|
| Auger Drill Rig | 85 | 20% |
| Backhoe | 80 | 40% |
| Blasting | 94 | 1% |
| Chain Saw | 85 | 20% |
| Clam Shovel | 93 | 20% |
| Compactor (ground) | 80 | 20% |
| Compressor (air) | 80 | 40% |
| Concrete Mixer Truck | 85 | 40% |
| Concrete Pump | 82 | 20% |
| Concrete Saw | 90 | 20% |
| Crane (mobile or stationary) | 85 | 20% |
| Dozer | 85 | 40% |
| Dump Truck | 84 | 40% |
| Excavator | 85 | 40% |
| Front End Loader | 80 | 40% |
| Generator (25 kilovolt ampts or less) | 70 | 50% |
| Generator (more than 25 kilovolt amps) | 82 | 50% |
| Grader | 85 | 40% |
| Hydra Break Ram | 90 | 10% |
| Impact Pile Driver (diesel or drop) | 95 | 20% |

| Table 6<br>Typical Construction Equipment Noise Levels | | |
|---|---|---|
| Equipment | Noise Level at 50 Feet [dB(A) $L_{eq}$][1] | Typical Duty Cycle[2] |
| In situ Soil Sampling Rig | 84 | 20% |
| Jackhammer | 85 | 20% |
| Mounted Impact Hammer (hoe ram) | 90 | 20% |
| Paver | 85 | 50% |
| Pneumatic Tools | 85 | 50% |
| Pumps | 77 | 50% |
| Rock Drill | 85 | 20% |
| Roller | 74 | 40% |
| Scraper | 85 | 40% |
| Tractor | 84 | 40% |
| Vacuum Excavator (vac-truck) | 85 | 40% |
| Vibratory Concrete Mixer | 80 | 20% |
| Vibratory Pile Driver | 95 | 20% |
| SOURCE: FHWA 2006.<br>[1]Noise levels based on those specified in FHWA Road Construction Noise Model.<br>[2]Amount of time equipment operates at full power. | | |

During excavation, grading, and paving operations, equipment moves to different locations and goes through varying load cycles, and there are breaks for the operators and for non-equipment tasks, such as measurement. Although maximum noise levels may be 80 to 90 dB(A) at a distance of 50 feet during most construction activities, hourly average noise levels from the grading phase of construction would be less. For this analysis, the simultaneous operation of a grader, dozer, loader, excavator, and dump truck was modeled. This equipment would generate an average hourly noise level of 87 dB(A) $L_{eq}$ at 50 feet from the center of construction activity.

# 4.2 Traffic Noise Analysis

## 4.2.1 On-site Noise Compatibility

### 4.2.1.1 Vehicle Traffic

The SoundPLAN program uses the FHWA Traffic Noise Model algorithms and reference levels to calculate traffic noise levels at selected receiver locations. The model uses various input parameters, such as projected hourly average traffic rates; vehicle mix, distribution, and speed; roadway lengths and gradients; distances between sources, barriers, and receivers; and shielding provided by intervening terrain, barriers, and structures. Receivers, roadways, and barriers were input into the model using three-dimensional coordinates. The locations of future buildings were obtained from project drawings.

The main source of traffic noise at the project site is vehicle traffic on I-5 and Hollister Street. For the purpose of the future traffic noise compatibility analysis, the noisiest condition is represented as the maximum level of service (LOS) C traffic volume. This condition represents a condition where the maximum number of vehicles are using the roadway at the

maximum speed. LOS A and B categories allow full travel speed but do not have as many vehicles, while LOS E and F have a greater number of vehicles, but due to the traffic volume travel at reduced speeds, thus generating less noise.

I-5 is an 8-lane freeway (4 lanes in each direction) adjacent to the project site. Additionally, there is a 2-lane on-ramp and a 2-lane off-ramp. Freeways have a capacity of 1,800 vehicles per hour per mainline and 1,200 vehicles per hour per auxiliary lanes, and the maximum LOS C volume was calculated as 80 percent capacity. Vehicle classification mixes were obtained from the Caltrans truck counts (2016). Caltrans does not provide counts for buses or motorcycles. One percent of the total automobiles were modeled as buses and one percent were modeled as motorcycles.

For Hollister Street, SANDAG projects that the future traffic volume would be greater than the maximum LOS C volume. As a conservative analysis, the SANDAG future projected volume of 13,700 ADT was used to determine noise compatibility. The peak hour volume was calculated as 10 percent of the total ADT. The same vehicle classification mix modeled for the freeway was modeled for Hollister Street.

Table 7 summarizes the traffic parameters used in this compatibility analysis.

**Table 7**
**Traffic Parameters**

| Roadway | Classification | Maximum LOS C Peak Hour Volume | Speed (mph) | Vehicle Mix (percent) | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Auto | Medium Truck | Heavy Truck | Bus | Motorcycle |
| I-5 NB | 4-Lane Freeway | 5,760 | 65/55* | 94.1 | 2.4 | 1.6 | 1.0 | 1.0 |
| I-5 SB | 4-Lane Freeway | 5,760 | 65/55* | 94.1 | 2.4 | 1.6 | 1.0 | 1.0 |
| I-5 On-Ramp | 2-Lane Ramp | 1,920 | 65/55* | 94.1 | 2.4 | 1.6 | 1.0 | 1.0 |
| I-5 Off-Ramp | 2-Lane Ramp | 1,920 | 65/55* | 94.1 | 2.4 | 1.6 | 1.0 | 1.0 |
| Hollister Street | 2-Lane Collector | 1,370 | 30 | 94.1 | 2.4 | 1.6 | 1.0 | 1.0 |

LOS = level of service; mph = miles per hour; I-5 = Interstate 5; NB = northbound; SB = southbound
*Freeway speed limit is 65 mph for all vehicles except trucks, Truck speed limit is 55 mph

#### 4.2.1.2 Trolley Traffic

The SDMTS Blue Line trolley is located east of the project site. Noise generated by the trolley was modeled using the SoundPLAN program. SoundPLAN calculates trolley noise levels based on trolley speed, length, and the number of pass-bys that occur during the daytime, evening, and nighttime hours. The trolleys were modeled at 35 miles per hour. This is based on the distances between trolley stations and the average timing between stations obtained from published trolley schedules. Adjacent to the project site, there are 135 daytime pass-bys, 20 evening pass-bys, and 51 nighttime pass-bys on weekdays. There are fewer trolley pass-bys on Saturdays and Sundays; therefore, the worst-case weekday scenario was modeled.

### 4.2.2 Off-site Vehicle Traffic Noise

Off-site traffic noise was modeled using the FHWA Traffic Noise Prediction Model algorithms and reference levels. Traffic noise levels were calculated at 50 feet from the centerline of the

affected roadways to determine the noise level increase associated with the project. The model uses various input parameters, such as traffic volumes, vehicle mix, distribution, and speed.

The study area of the Transportation Impact Analysis prepared for the project included the following local roadway segments: Main Street, Hollister Street, and Palm Avenue. Traffic noise levels were calculated based on the total average daily traffic volume on each roadway segment. For modeling purposes, "hard" ground conditions were used for the analysis of future conditions, since a majority of the project area is paved and the hard site provides the most conservative impact assessment.

Existing, near-term (year 2021), and horizon (year 2050) traffic volumes with and without the project were obtained from the Transportation Impact Analysis (Kimley-Horn 2019). Table 8 summarizes the traffic volumes for the analyzed segments of Main Street, Hollister Street, and Palm Avenue. Modeled noise levels do not account for shielding provided by intervening barriers and structures.

**Table 8**
**Traffic Volumes**

| Roadway Segment | Existing | Existing + Project | Near-Term | Near-Term + Project | Horizon | Horizon + Project |
|---|---|---|---|---|---|---|
| Main Street | | | | | | |
| I-5 Northbound Ramps to Hollister Street | 26,312 | 27,178 | 28,333 | 29,199 | 31,815 | 32,681 |
| Hollister Street | | | | | | |
| Main Street to Charles Avenue | 6,372 | 7,455 | 6,857 | 7,940 | 11,675 | 12,758 |
| Charles Avenue to Project Site | 6,372 | 7,455 | 6,857 | 7,911 | 11,277 | 12,360 |
| Project Site to Palm Avenue | 6,639 | 7,722 | 7,098 | 8,181 | 11,525 | 12,608 |
| Palm Avenue | | | | | | |
| I-5 Northbound Ramps to Hollister Street | 22,262 | 23,128 | 22,955 | 23,822 | 28,671 | 29,537 |

SOURCE: Kimley-Horn 2019.

# 4.3 On-site Generated Noise Analysis

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of any residential complex, such as vehicles arriving and leaving, children at play, and landscape maintenance machinery. None of these noise sources is anticipated to violate the City's Noise Abatement and Control Ordinance or result in a substantial permanent increase in existing noise levels. However, the project would include rooftop heating, ventilation, and air conditioning (HVAC) units that have the potential to produce noise in excess of City limits (see Table 3).

It is not known at this time which manufacturer, brand, or model of unit or units would be selected for use in the project. For the purposes of this analysis, to determine what general noise levels the HVAC units would generate, it was assumed that the rooftop units would be similar to a Trane split system unit with a sound power level of 72 dB(A). The unit specification sheets are included in Attachment 2.

# 5.0 Future Acoustical Environment and Impacts

## 5.1 Construction Noise

Noise associated with the grading, building, and paving for the project would potentially result in short-term impacts to surrounding properties. A single-family residence is located immediately south of the project site. Additionally, MHPA land is located north of the project site. A variety of noise-generating equipment would be used during the construction phase of the project, such as graders, excavators, backhoes, front-end loaders, and concrete saws, along with others. The exact number and pieces of construction equipment required are not known at this time. Although maximum noise levels may be 85 to 90 dB(A) at a distance of 50 feet during most construction activities, hourly average noise levels would be lower when taking into account the equipment usage factors. The loudest phase of construction would be the grading/excavation phase. Construction noise levels were calculated based on two graders, a dozer, loader, excavator, and dump truck being active simultaneously.

Construction noise is considered a point source and would attenuate at approximately 6 dB(A) for every doubling of distance. Average hourly noise levels due to simultaneous activity would be 87 dB(A) $L_{eq}$ at 50 feet. To reflect the nature of grading and construction activities, equipment was modeled as an area source distributed over the project footprint. The total sound energy of the area source was modeled with all pieces of equipment operating simultaneously. Noise levels were modeled at a series of 15 receivers located at the adjacent uses and MHPA. The results are summarized in Table 9. Modeled receiver locations and construction noise contours are shown in Figure 5. SoundPLAN data is contained in Attachment 3.

As shown, construction noise levels are not anticipated to exceed 75 dB(A) $L_{eq}$ at the adjacent residential use. Although the existing adjacent residence would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. As construction activities associated with the project would comply with noise level limits from Noise Abatement and Control Ordinance Section 59.5.0404, temporary increases in noise levels from construction activities would be less than significant.

As also shown in Table 9, construction noise levels at the adjacent MHPA habitat (Receivers 9 through 13) would range from 62 to 65 dB(A) $L_{eq}$. The project area is dominated by vehicle traffic noise from I-5. Existing ambient noise levels range from 65 to 73 dB(A) $L_{eq}$ (see Table 4). As discussed in Section 2.5, during the breeding season, construction noise levels should not exceed 60 dB(A) $L_{eq}$ or existing ambient noise level if above 60 dB(A) $L_{eq}$. Construction noise levels would not exceed the existing ambient noise levels. Therefore, noise impacts to sensitive habitat would be less than significant.

Image Source: Nearmap (flown February 2019)


**Construction Noise**

- 50 dB(A) Leq
- 55 dB(A) Leq
- 60 dB(A) Leq
- 65 dB(A) Leq
- 70 dB(A) Leq
- 75 dB(A) Leq
- Modeled Receivers
- Project Boundary
- Trolley Line

0 Feet 300

RECON

M:\JOBS5\8575\common_gis\fig5_nos.mxd 3/13/2019 bma

# FIGURE 5

## Construction Noise Contours

| Table 9<br>Construction Noise Levels at Off-site Receivers | | |
|---|---|---|
| Receiver | Land Use | Construction Noise Level [dB(A) $L_{eq}$] |
| 1 | Residential | 70 |
| 2 | Residential | 71 |
| 3 | Residential | 72 |
| 4 | Residential | 71 |
| 5 | I-5 ROW | 71 |
| 6 | I-5 ROW | 66 |
| 7 | I-5 ROW | 68 |
| 8 | I-5 ROW | 67 |
| 9 | MHPA | 62 |
| 10 | MHPA | 64 |
| 11 | MHPA | 65 |
| 12 | MHPA | 65 |
| 13 | MHPA | 64 |
| 14 | Hollister Street ROW/Trolley | 66 |
| 15 | Hollister Street ROW/Trolley | 68 |
| dB(A) $L_{eq}$ = A-weighted decibels equivalent noise level<br>I-5 = Interstate 5; ROW = right-of-way; MHPA = multi-habitat planning area | | |

# 5.2 Vehicle Traffic Noise

## 5.2.1 On-site Noise Compatibility

Vehicle traffic noise level contours across the project site were calculated using SoundPLAN. These contours take into account shielding provided by proposed buildings, topography, and proposed grading. These noise contours are shown in Figure 6. As shown, first-floor noise levels would exceed the City's "compatible" noise level of 60 CNEL at the western and eastern portions of the project site closest to I-5 and Hollister Street, and could exceed the City's "conditionally compatible" noise level of 70 CNEL at the western portion of the project site closest to I-5.

To determine exterior noise levels at the exterior use areas and building façades, noise levels were modeled at 35 specific receiver locations, as shown in Figure 6. Exterior noise levels were modeled at first- through fourth-floor elevations. The results are summarized in Table 10. SoundPLAN data are provided in Attachment 4.

**Table 10**
**Future Vehicle Traffic Noise Levels**

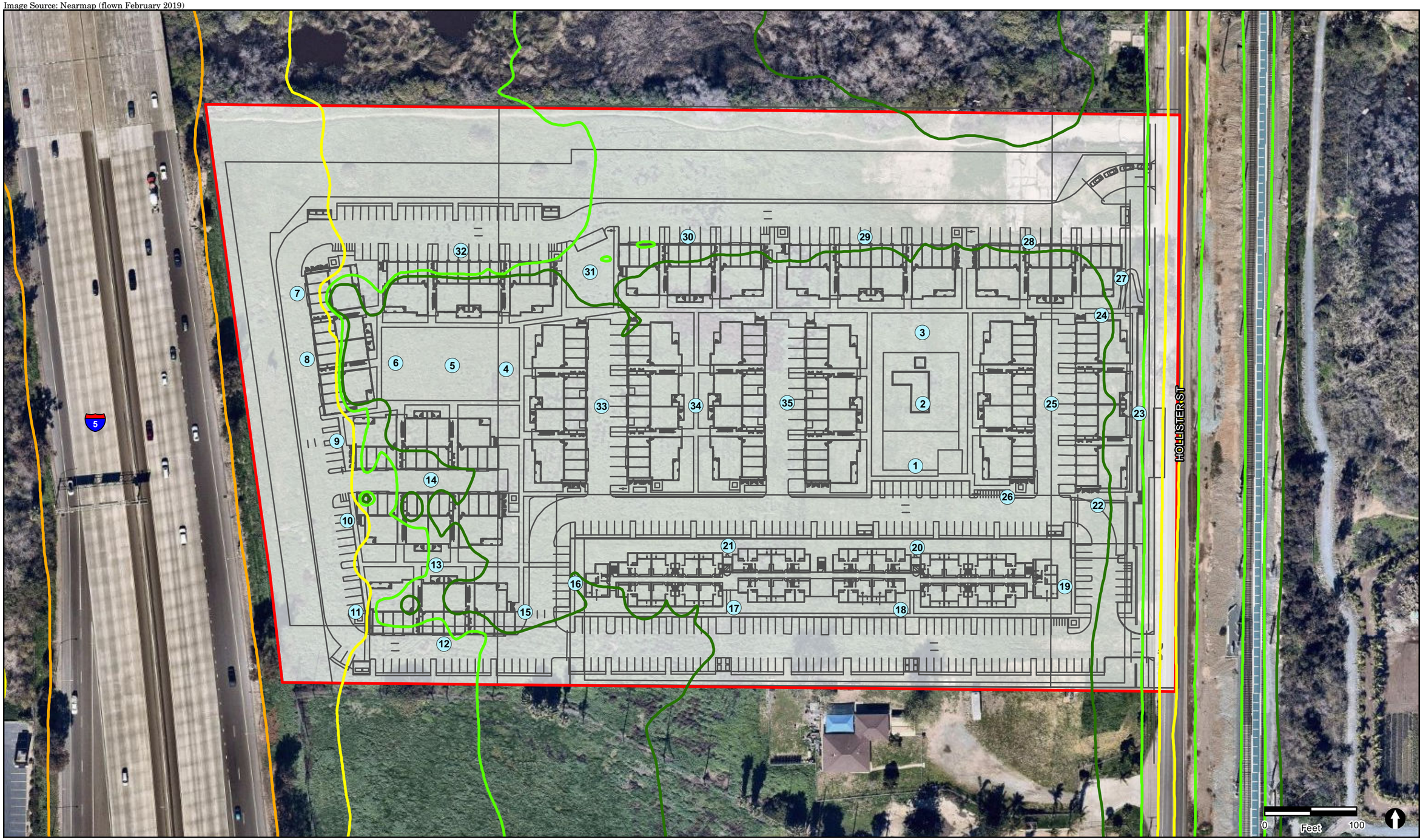
| Receiver | Location | Exterior Noise Level (CNEL) | | | |
|---|---|---|---|---|---|
| | | First Floor | Second Floor | Third Floor | Fourth Floor |
| 1 | Common Exterior Use Area | 47 | 48 | 50 | 52 |
| 2 | Common Exterior Use Area | 44 | 45 | 47 | 50 |
| 3 | Common Exterior Use Area | 45 | 47 | 48 | 51 |
| 4 | Common Exterior Use Area | 53 | 56 | 57 | 59 |
| 5 | Common Exterior Use Area | 55 | 59 | 60 | 61 |
| 6 | Common Exterior Use Area | 56 | 58 | 58 | 60 |
| 7 | Building Façade | **73** | **75** | **76** | **76** |
| 8 | Building Façade | **73** | **75** | **76** | **76** |
| 9 | Building Façade | **72** | **74** | **75** | **75** |
| 10 | Building Façade | **72** | **74** | **75** | **75** |
| 11 | Building Façade | **71** | **74** | **75** | **75** |
| 12 | Building Façade | 66 | 69 | **70** | **70** |
| 13 | Building Façade | 65 | 67 | 68 | 69 |
| 14 | Building Façade | 63 | 65 | 65 | 66 |
| 15 | Building Façade | 53 | 56 | 57 | 59 |
| 16 | Building Façade | 61 | 64 | 64 | 65 |
| 17 | Building Façade | 58 | 61 | 62 | 63 |
| 18 | Building Façade | 56 | 60 | 61 | 62 |
| 19 | Building Façade | 58 | 60 | 60 | 60 |
| 20 | Building Façade | 48 | 50 | 52 | 53 |
| 21 | Building Façade | 50 | 53 | 54 | 56 |
| 22 | Building Façade | 59 | 60 | 60 | 61 |
| 23 | Building Façade | 64 | 65 | 65 | 65 |
| 24 | Building Façade | 59 | 60 | 60 | 60 |
| 25 | Building Façade | 47 | 49 | 49 | 51 |
| 26 | Building Façade | 52 | 54 | 55 | 56 |
| 27 | Building Façade | 62 | 63 | 63 | 63 |
| 28 | Building Façade | 61 | 63 | 64 | 64 |
| 29 | Building Façade | 62 | 64 | 65 | 65 |
| 30 | Building Façade | 64 | 66 | 66 | 66 |
| 31 | Building Façade | 65 | 67 | 67 | 67 |
| 32 | Building Façade | 67 | 69 | 69 | 69 |
| 33 | Building Façade | 53 | 55 | 56 | 58 |
| 34 | Building Façade | 43 | 44 | 45 | 51 |
| 35 | Building Façade | 43 | 43 | 44 | 48 |

**Bold** = Exceeds 70 CNEL

As shown, noise levels at the common exterior use areas (Receivers 1 through 6) would range from 44 to 56, which would be compatible with the City standards (see Table 1). Noise levels at the building façades facing I-5 would exceed the City's "conditionally compatible" level of 70 CNEL. Exterior noise impacts at balconies in these locations would be potentially significant.

To refine the analysis further, exterior noise levels were modeled at each proposed first-floor patio and second- and third-floor balcony locations to determine compatibility with the City's "conditionally compatible" exterior standard of 70 CNEL.

Image Source: Nearmap (flown February 2019)




**Traffic Noise**

60 CNEL
65 CNEL
70 CNEL
75 CNEL
Modeled Receivers
Site Plan Lines
Project Boundary
Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig6_nos.mxd 7/15/2019 bma

FIGURE 6
Vehicle and Trolley
Traffic Noise Contours

Modeled first-floor patio receivers are shown in Figure 7 and first-floor patio noise levels are summarized in Table 11. As shown, noise levels at the patios would be considered acceptable provided that interior noise levels are reduced to 45 CNEL or less. All other patio locations would be located further away from I-5 or would be shielded from adjacent roadways by the proposed buildings, and would be less than 70 CNEL.

**Table 11**
**Future Vehicle Traffic Noise Levels at First-Floor Patios**

| Receiver | First-Floor Exterior Noise Level (CNEL) |
|---|---|
| 1 | 68 |
| 2 | 63 |
| 3 | 65 |
| 4 | 69 |
| 5 | 67 |
| 6 | 63 |

Modeled second- and third-floor balcony receivers are shown in Figure 8 and balcony noise levels are summarized in Table 12 As shown, noise levels at the balconies closest to I-5 would exceed the City's "conditionally compatible" level of 70 CNEL. Noise levels were modeled with incorporation of 3.5-high barriers around these balconies as shown in Figure 8. With construction of these barriers, noise levels would be reduced to less than 70 CNEL. All other balcony locations would be located further away from I-5 or would be shielded from adjacent roadways by the proposed buildings, and would be less than 70 CNEL. Note that only the affordable housing building would be four stories and include fourth-floor balconies; however, as shown in Table 10, noise levels at this building would not exceed 70 CNEL (Receivers 16 through 21).

**Table 12**
**Future Vehicle Traffic Noise Levels at Second- and Third-Floor Balconies**

| Receiver | Second-Floor Exterior Noise Level (CNEL) | | Third-Floor Exterior Noise Level (CNEL) | | Barrier Height (Feet) |
|---|---|---|---|---|---|
| | Without Barrier | With Barrier | Without Barrier | With Barrier | |
| 1 | 64 | 64 | 65 | 65 | -- |
| 2 | 62 | 62 | 63 | 63 | -- |
| 3 | 66 | 66 | 67 | 67 | -- |
| 4 | 66 | 66 | 67 | 67 | -- |
| 5 | **71** | 66 | **72** | 65 | 3.5 |
| 6 | 66 | 66 | 67 | 67 | -- |
| 7 | 69 | 69 | 70 | 70 | -- |
| 8 | **72** | 67 | **73** | 66 | 3.5 |
| 9 | 64 | 64 | 65 | 65 | -- |
| 10 | 57 | 57 | 57 | 57 | -- |
| 11 | 57 | 57 | 58 | 58 | -- |
| 12 | 65 | 65 | 66 | 66 | -- |
| 13 | 69 | 69 | 70 | 70 | -- |
| 14 | **73** | 67 | **74** | 66 | 3.5 |
| 15 | **73** | 68 | **74** | 66 | 3.5 |
| 16 | **73** | 68 | **74** | 66 | 3.5 |
| 17 | **73** | 67 | **74** | 66 | 3.5 |

| Table 12<br>Future Vehicle Traffic Noise Levels at Second- and Third-Floor Balconies | | | | | |
|---|---|---|---|---|---|
| | Second-Floor<br>Exterior Noise Level (CNEL) | | Third-Floor<br>Exterior Noise Level (CNEL) | | Barrier Height (Feet) |
| Receiver | Without Barrier | With Barrier | Without Barrier | With Barrier | |
| 18 | 66 | 66 | 66 | 66 | -- |
| 19 | 66 | 66 | 66 | 66 | -- |
| 20 | 67 | 67 | 68 | 68 | -- |
| 21 | 66 | 66 | 66 | 66 | -- |
| 22 | 66 | 66 | 66 | 66 | -- |
| 23 | 61 | 61 | 61 | 61 | -- |
| 24 | 65 | 65 | 65 | 65 | -- |
| 25 | 62 | 62 | 62 | 62 | -- |
| 26 | 63 | 63 | 63 | 63 | -- |
| 27 | 64 | 64 | 64 | 64 | -- |
| 28 | 62 | 62 | 62 | 62 | -- |
| 29 | 62 | 62 | 62 | 62 | -- |
| 30 | 64 | 64 | 64 | 64 | -- |
| **Bold** = Exceeds 65 CNEL | | | | | |

Therefore, the project would include noise attenuating design measures in the form of 3.5-foot-high barriers constructed around those balconies identified in Figure 8 of this analysis. With construction of these barriers, noise levels would be reduced to less than 70 CNEL or less. The following specific design parameters would be required:

**On-Site Noise Barriers.** Exterior noise levels at the second- and third-floor balconies identified as Receivers 5, 8, and 14 through 17 on Figure 8 shall be reduced to the City's "conditionally compatible" noise level of 70 CNEL for multi-family uses. Noise reduction for exterior traffic noise impacts can be accomplished through on-site noise barriers. Solid 3.5-foot balcony railings as identified on Figure 8 shall be constructed.

The sound attenuation barriers must be solid and free of cracks or holes. It can be constructed of masonry, wood, plastic, fiberglass, steel, plexi-glass, or a combination of those materials, as long as there are no cracks or gaps, through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch total thickness or have a density of at least 3.5 pounds per square foot.

Interior noise levels can be reduced through standard construction techniques. When windows are closed, standard construction techniques provide various exterior-to-interior noise level reductions depending on the type of structure and window. According to the FHWA's Highway Traffic Noise Analysis and Abatement Guidance, buildings with masonry façades and double-glazed windows can be estimated to provide a noise level reduction of 35 dB, while light-frame structures with double-glazed windows may provide noise level reductions of 20 to 25 dB (FHWA 2011).

Image Source: Nearmap (flown February 2019)


0 Feet 50

Patio Recievers

Site Plan Lines

Project Boundary

RECON

\\serverfs01\gis\JOBS5\8575\common_gis\fig7_nos.mxd 9/23/2019 fmm

# FIGURE 7

First-Floor Patio Receivers

Image Source: Nearmap (flown February 2019)


Balcony Receivers

Balcony Barriers

Site Plan Lines

Project Boundary

0 Feet 50

RECON

\\serverfs01\gis\JOBS5\8575\common_gis\fig8_nos.mxd 9/23/2019 fmm

# FIGURE 8
## Second- and Third-Floor Balcony Receivers and Barriers

The interior noise level standard for residential uses is 45 CNEL. As shown in Tables 10 and 12, exterior noise levels at the residential building façades would be as high as 76 CNEL at the buildings located closest to I-5. A noise reduction of up to 31 dB would be required to achieve an interior noise level of 45 CNEL or less. Prior to the issuance of building permits, as a condition of approval, a site-specific interior noise analysis would be prepared demonstrating that the window, door, and wall components would achieve a necessary sound transmission class rating required to reduce interior noise levels to 45 CNEL or less. The units that would require the interior noise analysis are indicated in Figure 9. To reduce interior noise levels in these buildings, the following condition of approval would be required:

**Interior Noise.** As a condition of approval, interior noise levels shall be reduced to the City's threshold of 45 CNEL or less in all habitable rooms for the buildings identified on Figure 9. Sound-resistant construction for walls shall achieve a combined sound transmission class rating up to 31 dB. Appropriate means of air circulation and provision of fresh air shall be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system shall meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

### 5.2.2 Off-Site Vehicle Traffic Noise

The project would increase traffic volumes on local roadways. However, the project would not substantially alter the vehicle classifications mix on local or regional roadways nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be increased traffic volumes. While changes in noise levels would occur along any roadway where project-related traffic occurs, for noise assessment purposes, noise level increases are assumed to be greatest nearest the project site, as this location would represent the greatest concentration of project-related traffic. A substantial noise increase is defined as an increase of 3 dB above existing conditions as stated in the City's CEQA significance standards.

Table 13 presents a conservative assessment of traffic noise levels based on the existing, existing plus project, near-term (year 2021), near-term plus project, horizon (year 2050), and horizon plus project noise levels generated by traffic. Table 13 also summarizes the traffic noise level increases due to the project. Noise level calculations are contained in Attachment 5.

As shown in Table 13, direct off-site noise level increases due to the project would be less than 1 dB. Therefore, direct off-site noise impacts associated with the project would be less than significant.

Image Source: Nearmap (flown February 2019)


Units Requiring Interior Noise Reduction

Site Plan Lines

Project Boundary

Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig9_nos.mxd 7/15/2019 bma

FIGURE 9

Units Requiring Interior Noise Reduction

**Table 13**
**Traffic Noise Levels with and without Project and Ambient Noise Increase**
**(CNEL)**

| Roadway Segment | Existing | | | Near-Term (Year 2021) | | | Horizon (Year 2050) | | | Total Increase Over Existing |
|---|---|---|---|---|---|---|---|---|---|---|
| | Without Project | With Project | Increase | Without Project | With Project | Increase | Without Project | With Project | Increase | |
| Main Street | | | | | | | | | | |
| I-5 Northbound Ramps to Hollister Street | 71.8 | 71.9 | 0.1 | 72.1 | 72.2 | 0.1 | 72.6 | 72.7 | 0.1 | 0.9 |
| Hollister Street | | | | | | | | | | |
| Main Street to Charles Avenue | 63.6 | 64.2 | 0.6 | 63.9 | 64.5 | 0.6 | 66.2 | 66.6 | 0.4 | 3.0 |
| Charles Avenue to Project Site | 63.6 | 64.2 | 0.6 | 63.9 | 64.5 | 0.6 | 66.0 | 66.4 | 0.4 | 2.8 |
| Project Site to Palm Avenue | 63.7 | 64.4 | 0.7 | 64.0 | 64.6 | 0.6 | 66.1 | 66.5 | 0.4 | 2.8 |
| Palm Avenue | | | | | | | | | | |
| I-5 Northbound Ramps to Hollister Street | 72.2 | 72.4 | 0.2 | 72.4 | 72.5 | 0.1 | 73.3 | 73.5 | 0.2 | 1.3 |

CNEL = community noise equivalent level

Similar to direct traffic noise impacts, a cumulative traffic noise impact occurs when the noise level would exceed the applicable standard and a substantial noise level increase compared to existing noise occurs. As shown, the total horizon (year 2050) with project increase over the existing condition would range from 0.9 dB to 3.0 dB. A 3 dB increase would occur along Hollister Street between Main Street and Charles Avenue. However, the project's contribution to the cumulative noise increase would be 0.4 dB. Additionally, there are no sensitive receivers located adjacent to this roadway segment. The land uses adjacent to this roadway segment include a storage facility and industrial uses. The total future noise level would be less than the noise compatibility standards for these land uses. Therefore, the project would result in a less than cumulatively considerable off-site noise level increase, and cumulative traffic noise impacts associated with the project would be less than significant.

## 5.3 Aircraft Noise

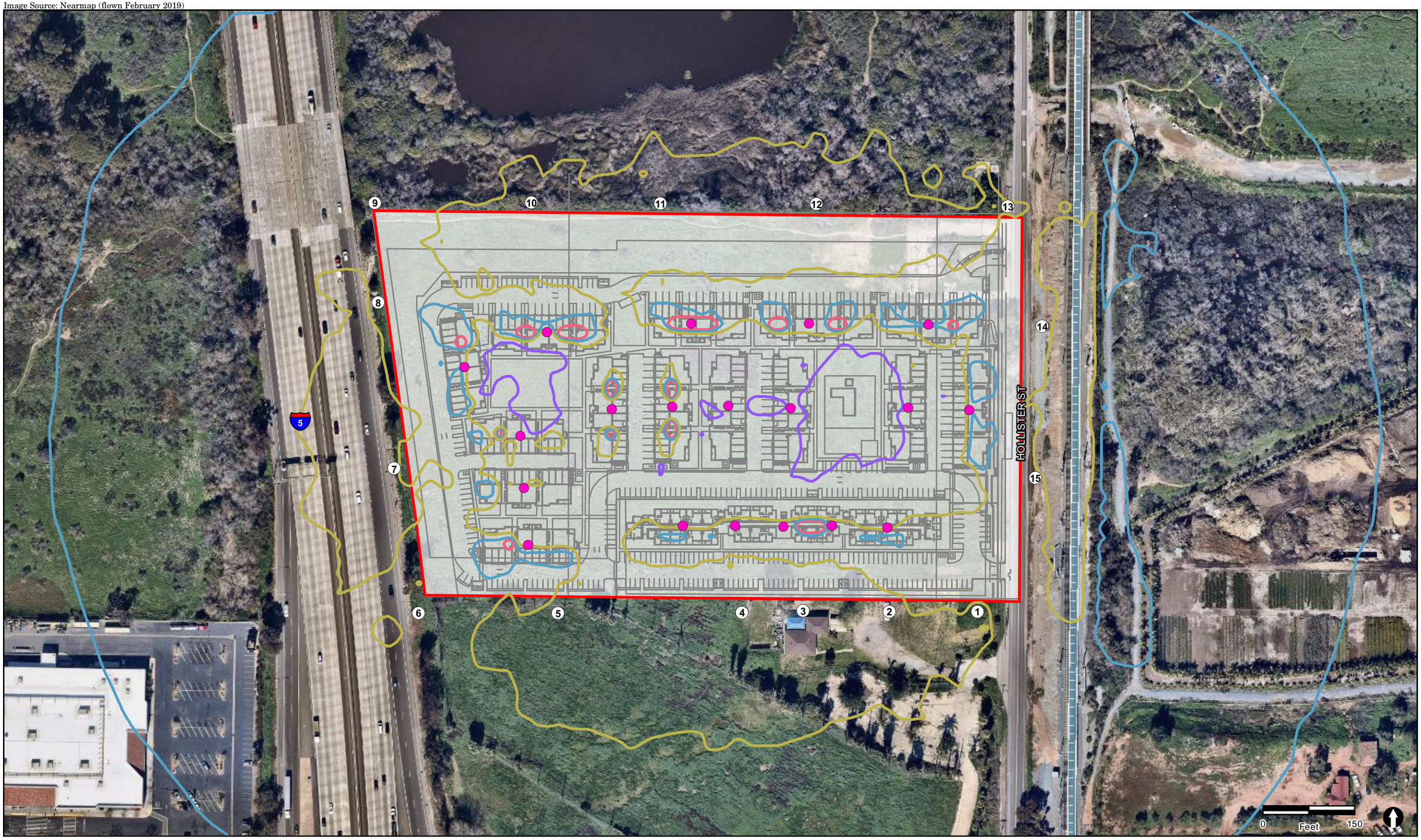
Brown Field is located approximately five miles east of the project site. As discussed in Section 2.4, the 60 CNEL noise contour defines the noise impact area for Brown Field, and all land uses located outside the 60 CNEL noise contour, would be consistent with the ALUCP noise compatibility policies. Based on the noise contours contained in the Brown Field ALUCP, the project site is located approximately 3.5 miles outside the 60 CNEL contour for Brown Field. Thus, noise levels due to aircraft operations at Brown Field would be well less than 60 CNEL, and noise impacts would be less than significant.

## 5.4 On-site Generated Noise

The primary noise sources on-site would be rooftop HVAC equipment. Using the on-site noise source parameters discussed in Section 4.3, noise levels were modeled at a series of 15 receivers located at the property line. The exact location of each HVAC unit is not known at this time. Units were modeled at the center of the rooftop of the market-rate buildings and along the length of the affordable housing building. Noise generated by HVAC equipment would occur on an intermittent basis, primarily during the day and evening hours and less frequently during the nighttime hours. For a worst-case analysis, it was assumed that the HVAC units would operate continuously.

Modeled receivers and HVAC noise contours are shown in Figure 10. Modeled data is included in Attachment 6. Future projected noise levels are summarized in Table 14.

Image Source: Nearmap (flown February 2019)




**HVAC Noise**

- 30 dB(A) Leq
- 35 dB(A) Leq
- 40 dB(A) Leq
- 45 dB(A) Leq
- HVAC Units
- Modeled Receivers
- Site Plan Lines
- Project Boundary
- Trolley Line

RECON

M:\JOBS5\8575\common_gis\fig10_nos.mxd 7/15/2019 bma

FIGURE 10

HVAC Noise Contours

| Table 14<br>HVAC Noise Levels at Adjacent Property Lines | | |
|---|---|---|
| Receiver | Land Use | HVAC Noise Level [dB(A) $L_{eq}$] |
| 1 | Residential | 40 |
| 2 | Residential | 42 |
| 3 | Residential | 43 |
| 4 | Residential | 43 |
| 5 | I-5 ROW | 41 |
| 6 | I-5 ROW | 40 |
| 7 | I-5 ROW | 41 |
| 8 | I-5 ROW | 39 |
| 9 | MHPA | 38 |
| 10 | MHPA | 41 |
| 11 | MHPA | 41 |
| 12 | MHPA | 41 |
| 13 | MHPA | 40 |
| 14 | Hollister Street ROW/Trolley | 39 |
| 15 | Hollister Street ROW/Trolley | 40 |
| dB(A) $L_{eq}$ = A-weighted decibels equivalent noise level<br>I-5 = Interstate 5; ROW = right-of-way; MHPA = multi-habitat planning area | | |

# 6.0 Conclusions

## 6.1 Construction Noise

As shown in Table 9, construction noise levels are not anticipated to exceed 75 dB(A) $L_{eq}$ at the adjacent residential uses. Although the existing adjacent residences would be exposed to construction noise levels that could be heard above ambient conditions, the exposure would be temporary. As construction activities associated with the project would comply with noise level limits from Noise Abatement and Control Ordinance Section 59.5.0404, temporary increases in noise levels from construction activities would be less than significant.

At the adjacent sensitive habitat, construction noise levels would range from 62 to 65 dB(A) $L_{eq.}$ Existing ambient noise levels range from 65 to 73 dB(A) $L_{eq}$. Because construction noise levels would not exceed the existing ambient noise levels, noise impacts to the habitat would be less than significant.

## 6.2 Vehicle Traffic Noise

### 6.2.1 On-site Noise Compatibility

The main source of traffic noise at the project site is vehicle traffic on I-5 and Hollister Street. According to the General Plan Noise Element, multi-family residential uses are considered "compatible" with exterior noise levels up to 60 CNEL and "conditionally compatible" with

exterior noise levels up to 70 CNEL. The City's interior noise level standard for all residential uses is 45 CNEL.

As shown in Table 10, noise levels at the common exterior use areas would range from 44 to 56, which would be compatible with the City standards. However, noise levels at the second- and third-floor balconies closest to I-5 would exceed the City's "conditionally compatible" level of 70 CNEL. Noise levels were modeled with incorporation of 3.5-foot-high barriers around these balconies as shown in Figure 8. With construction of these barriers, noise levels would be reduced to less than 70 CNEL. The following noise attenuations measures would be required:

**On-Site Noise Barriers.** Exterior noise levels at the second- and third-floor balconies identified as Receivers 5, 8, and 14 through 17 on Figure 8 shall be reduced to the City's "conditionally compatible" noise level of 70 CNEL for multi-family uses. Noise reduction for exterior traffic noise impacts can be accomplished through on-site noise barriers. Solid 3.5-foot balcony railings as identified on Figure 8 shall be constructed. The sound attenuation barriers must be solid and free of cracks or holes. It can be constructed of masonry, wood, plastic, fiberglass, steel, plexi-glass, or a combination of those materials, as long as there are no cracks or gaps, through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it can be tongue and groove and must be at least one-inch total thickness or have a density of at least 3.5 pounds per square foot.

The interior noise level standard for residential uses is 45 CNEL. As shown in Tables 10 and 12, exterior noise levels at the residential building façades would be as high as 76 CNEL at the buildings located closest to I-5. A noise reduction of up to 31 dB would be required to achieve an interior noise level of 45 CNEL or less. Prior to the issuance of building permits, as a condition of approval, a site-specific interior noise analysis would be prepared demonstrating that the window, door, and wall components would achieve a necessary sound transmission class rating required to reduce interior noise levels to 45 CNEL or less. The following condition of approval would be required:

**Interior Noise.** As a condition of approval, interior noise levels shall be reduced to the City's threshold of 45 CNEL or less in all habitable rooms for the buildings identified on Figure 9. Sound-resistant construction for walls shall achieve a combined sound transmission class rating up to 31 dB. Appropriate means of air circulation and provision of fresh air shall be provided to allow windows to remain closed for extended intervals of time so that acceptable interior noise levels can be maintained. The mechanical ventilation system shall meet the criteria of the International Building Code (Chapter 12, Section 1203.3 of the 2001 California Building Code).

### 6.2.2 Off-site Vehicle Traffic Noise

The project would increase traffic volumes on local roadways. However, the project would not substantially alter the vehicle classifications mix on local or regional roadways, nor would the project alter the speed on an existing roadway or create a new roadway. Thus, the primary factor affecting off-site noise levels would be increased traffic volumes. A substantial noise

increase is defined as an increase of 3 dB above existing conditions as stated in the City's CEQA significance standards.

As shown in Table 13, direct off-site noise level increases due to the project would be less than 1 dB. Therefore, direct off-site noise impacts associated with the project would be less than significant. Similar to direct traffic noise impacts, a cumulative traffic noise impact occurs when the noise level would exceed the applicable standard and a substantial noise level increase compared to existing noise occurs. As shown, the total horizon (year 2050) with project increase over the existing condition would range from 0.9 dB to 3.0 dB. A 3 dB increase would occur along Hollister Street between Main Street and Charles Avenue. However, the project's contribution to the cumulative noise increase would be 0.4 dB. Additionally, there are no sensitive receivers located adjacent to this roadway segment. The land uses adjacent to this roadway segment include a storage facility and industrial uses. The total future noise level would be less than the noise compatibility standards for these land uses. Therefore, the project would result in a less than cumulatively considerable off-site noise level increase, and cumulative traffic noise impacts associated with the project would be less than significant.

## 6.3 Aircraft Noise

Brown Field is located approximately five miles east of the project site. Based on the noise contours contained in the Brown Field ALUCP, the project site is located approximately 3.5 miles outside the 60 CNEL contour for Brown Field. Thus, noise levels due to aircraft operations at Brown Field would be well less than 60 CNEL, and noise impacts would be less than significant.

## 6.4 On-site Generated Noise

The noise sources on the project site after completion of construction are anticipated to be those that would be typical of any residential complex, such as vehicles arriving and leaving and landscape maintenance machinery. None of these noise sources is anticipated to violate the City's Noise Abatement and Control Ordinance. However, the project would include rooftop HVAC units that have the potential to produce noise in excess of City limits. Rooftop HVAC noise levels were modeled at the adjacent property lines. As shown in Table 14, on-site generated noise levels would range from 38 to 43 dB(A) $L_{eq}$. Noise levels would not exceed the applicable limits at the property lines. Noise levels would also be less than 60 dB(A) $L_{eq}$ at the adjacent MHPA.

# 7.0 References Cited

California Code of Regulations

2016 2016 California Building Code, California Code of Regulations, Title 24, Chapter 12 Interior Environment, Section 1207, Sound Transmission, accessed at http://www.bsc.ca.gov/codes.aspx.

California Department of Transportation (Caltrans)

2013 Technical Noise Supplement. November.

2016 2016 Annual Average Daily Truck Traffic on the California State Highway System.

Federal Highway Administration (FHWA)

2006 Roadway Construction Noise Model User's Guide. FHWA-HEP-05-054, SOT-VNTSC-FHWA-05-01. Final Report. January.

2011 Highway Traffic Noise: Analysis and Abatement Guidance. FHWA-HEP-10-025. December.

Kimley-Horn

2019 Bella Mar Transportation Impact Analysis. February 2019.

Navcon Engineering, Inc.

2018 SoundPLAN Essential version 4.1.

San Diego, City of

2012 Final City of San Diego Biology Guidelines for the Environmentally Sensitive Lands Regulations (ESL), the Open Space Residential (OR-1-2) Zone, and the California Environmental Quality Act (CEQA). June.

2015 City of San Diego General Plan Amendments. Resolution Number R- 309817 Final Environmental Impact Report No. 104495 Addendum R-309818. Adopted by City Council on June 29.

2016 Significance Determination Thresholds for the California Environmental Quality Act (CEQA). July.

San Diego County Regional Airport Authority (SDCRAA)

2010 Brown Field Municipal Airport Land Use Compatibility Plan. January 25, 2010.

RECON Environmental, Inc. (RECON)

2019 Biological Technical Report for the Bella Mar Project San Diego, California. July.

# ATTACHMENTS

# ATTACHMENT 1

# Noise Measurement Data

| Summary | |
|---|---|
| Filename | LxT_Data.030 |
| Serial Number | 3827 |
| Model | SoundExpert™ LxT |
| Firmware Version | 2.301 |
| User | |
| Location | |
| Job Description | |
| Note | |
| Measurement Description | |
| Start | 2018/09/19 13:09:21 |
| Stop | 2018/09/19 13:24:23 |
| Duration | 0:15:01.6 |
| Run Time | 0:15:01.6 |
| Pause | 0:00:00.0 |
| | |
| Pre Calibration | 2018/09/19 13:06:25 |
| Post Calibration | None |
| Calibration Deviation | --- |

| Overall Settings | |
|---|---|
| RMS Weight | A Weighting |
| Peak Weight | A Weighting |
| Detector | Slow |
| Preamp | PRMLxT1L |
| Microphone Correction | Off |
| Integration Method | Linear |
| OBA Range | Normal |
| OBA Bandwidth | 1/1 and 1/3 |
| OBA Freq. Weighting | A Weighting |
| OBA Max Spectrum | At Lmax |
| Overload | 121.8 dB |

| | A | C | Z |
|---|---|---|---|
| Under Range Peak | 78.1 | 75.1 | 80.1 dB |
| Under Range Limit | 26.0 | 25.2 | 32.0 dB |
| Noise Floor | 16.3 | 16.1 | 22.0 dB |

| Results | | |
|---|---|---|
| LAeq | 72.7 dB | |
| LAE | 102.3 dB | |
| EA | 1.881 mPa²h | |
| LApeak (max) | 2018/09/19 13:23:55 | 99.7 dB |
| LASmax | 2018/09/19 13:23:55 | 81.9 dB |
| LASmin | 2018/09/19 13:20:20 | 68.0 dB |
| SEA | -99.9 dB | |

| | | |
|---|---|---|
| LAS > 85.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |

| Community Noise | Ldn | LDay 07:00-22:00 | LNight 22:00-07:00 | Lden | LDay 07:00-19:00 | LEvening 19:00-22:00 | LNight 22:00-07:00 |
|---|---|---|---|---|---|---|---|
| | 72.7 | 72.7 | -99.9 | 72.7 | 72.7 | -99.9 | -99.9 |

| | |
|---|---|
| LCeq | 76.8 dB |
| LAeq | 72.7 dB |
| LCeq - LAeq | 4.1 dB |
| LAleq | 73.6 dB |
| LAeq | 72.7 dB |
| LAleq - LAeq | 0.9 dB |
| # Overloads | 0 |
| Overload Duration | 0.0 s |
| # OBA Overloads | 0 |
| OBA Overload Duration | 0.0 s |

| Statistics | |
|---|---|
| LAS5.00 | 74.3 dB |
| LAS10.00 | 74.0 dB |
| LAS33.30 | 73.1 dB |
| LAS50.00 | 72.6 dB |
| LAS66.60 | 72.0 dB |
| LAS90.00 | 70.9 dB |

| Summary | |
|---|---|
| Filename | LxT_Data.032 |
| Serial Number | 3827 |
| Model | SoundExpert™ LxT |
| Firmware Version | 2.301 |
| User | |
| Location | |
| Job Description | |
| Note | |
| Measurement Description | |
| Start | 2018/09/19 13:38:09 |
| Stop | 2018/09/19 13:53:21 |
| Duration | 0:15:12.2 |
| Run Time | 0:15:12.2 |
| Pause | 0:00:00.0 |
| | |
| Pre Calibration | 2018/09/19 13:37:39 |
| Post Calibration | None |
| Calibration Deviation | --- |

| Overall Settings | |
|---|---|
| RMS Weight | A Weighting |
| Peak Weight | A Weighting |
| Detector | Slow |
| Preamp | PRMLxT1L |
| Microphone Correction | Off |
| Integration Method | Linear |
| OBA Range | Normal |
| OBA Bandwidth | 1/1 and 1/3 |
| OBA Freq. Weighting | A Weighting |
| OBA Max Spectrum | At Lmax |
| Overload | 121.7 dB |

| | A | C | Z |
|---|---|---|---|
| Under Range Peak | **78.0** | 75.0 | 80.0 dB |
| Under Range Limit | **26.0** | 25.2 | 32.0 dB |
| Noise Floor | 16.2 | 16.1 | 22.0 dB |

| Results | | |
|---|---|---|
| LAeq | 67.3 dB | |
| LAE | 96.9 dB | |
| EA | 549.229 µPa²h | |
| LApeak (max) | 2018/09/19 13:40:06 | 96.1 dB |
| LASmax | 2018/09/19 13:40:06 | 76.4 dB |
| LASmin | 2018/09/19 13:42:32 | 62.3 dB |
| SEA | -99.9 dB | |

| | | |
|---|---|---|
| LAS > 85.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |

| Community Noise | Ldn | LDay 07:00-22:00 | LNight 22:00-07:00 | Lden | LDay 07:00-19:00 | LEvening 19:00-22:00 | LNight 22:00-07:00 |
|---|---|---|---|---|---|---|---|
| | 67.3 | 67.3 | -99.9 | 67.3 | 67.3 | -99.9 | -99.9 |
| LCeq | 72.1 dB | | | | | | |
| LAeq | 67.3 dB | | | | | | |
| LCeq - LAeq | 4.8 dB | | | | | | |
| LAleq | 68.6 dB | | | | | | |
| LAeq | 67.3 dB | | | | | | |
| LAleq - LAeq | 1.3 dB | | | | | | |
| # Overloads | 0 | | | | | | |
| Overload Duration | 0.0 s | | | | | | |
| # OBA Overloads | 0 | | | | | | |
| OBA Overload Duration | 0.0 s | | | | | | |

| Statistics | |
|---|---|
| LAS5.00 | 69.6 dB |
| LAS10.00 | 68.9 dB |
| LAS33.30 | 67.5 dB |
| LAS50.00 | 66.9 dB |
| LAS66.60 | 66.4 dB |
| LAS90.00 | 65.2 dB |

| Summary | |
|---|---|
| Filename | LxT_Data.033 |
| Serial Number | 3827 |
| Model | SoundExpert™ LxT |
| Firmware Version | 2.301 |
| User | |
| Location | |
| Job Description | |
| Note | |
| Measurement Description | |
| Start | 2018/09/19 14:02:13 |
| Stop | 2018/09/19 14:17:36 |
| Duration | 0:15:23.3 |
| Run Time | 0:15:23.3 |
| Pause | 0:00:00.0 |
| | |
| Pre Calibration | 2018/09/19 14:00:47 |
| Post Calibration | None |
| Calibration Deviation | --- |

| Overall Settings | |
|---|---|
| RMS Weight | A Weighting |
| Peak Weight | A Weighting |
| Detector | Slow |
| Preamp | PRMLxT1L |
| Microphone Correction | Off |
| Integration Method | Linear |
| OBA Range | Normal |
| OBA Bandwidth | 1/1 and 1/3 |
| OBA Freq. Weighting | A Weighting |
| OBA Max Spectrum | At Lmax |
| Overload | 121.8 dB |

| | A | C | Z |
|---|---|---|---|
| Under Range Peak | 78.1 | 75.1 | 80.1 dB |
| Under Range Limit | 26.0 | 25.2 | 32.0 dB |
| Noise Floor | 16.3 | 16.1 | 22.0 dB |

| Results | | |
|---|---|---|
| LAeq | 65.3 dB | |
| LAE | 95.0 dB | |
| EA | 349.581 µPa²h | |
| LApeak (max) | 2018/09/19 14:11:00 | 100.1 dB |
| LASmax | 2018/09/19 14:11:01 | 86.3 dB |
| LASmin | 2018/09/19 14:02:13 | 57.1 dB |
| SEA | -99.9 dB | |

| | | |
|---|---|---|
| LAS > 85.0 dB (Exceedence Counts / Duration) | 1 | 2.7 s |
| LAS > 115.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 135.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 137.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |
| LApeak > 140.0 dB (Exceedence Counts / Duration) | 0 | 0.0 s |

| Community Noise | Ldn | LDay 07:00-22:00 | LNight 22:00-07:00 | Lden | LDay 07:00-19:00 | LEvening 19:00-22:00 | LNight 22:00-07:00 |
|---|---|---|---|---|---|---|---|
| | 65.3 | 65.3 | -99.9 | 65.3 | 65.3 | -99.9 | -99.9 |

| | |
|---|---|
| LCeq | 71.1 dB |
| LAeq | 65.3 dB |
| LCeq - LAeq | 5.8 dB |
| LAleq | 66.8 dB |
| LAeq | 65.3 dB |
| LAleq - LAeq | 1.5 dB |
| # Overloads | 0 |
| Overload Duration | 0.0 s |
| # OBA Overloads | 0 |
| OBA Overload Duration | 0.0 s |

| Statistics | |
|---|---|
| LAS5.00 | 66.8 dB |
| LAS10.00 | 64.7 dB |
| LAS33.30 | 62.6 dB |
| LAS50.00 | 61.9 dB |
| LAS66.60 | 61.0 dB |
| LAS90.00 | 59.4 dB |

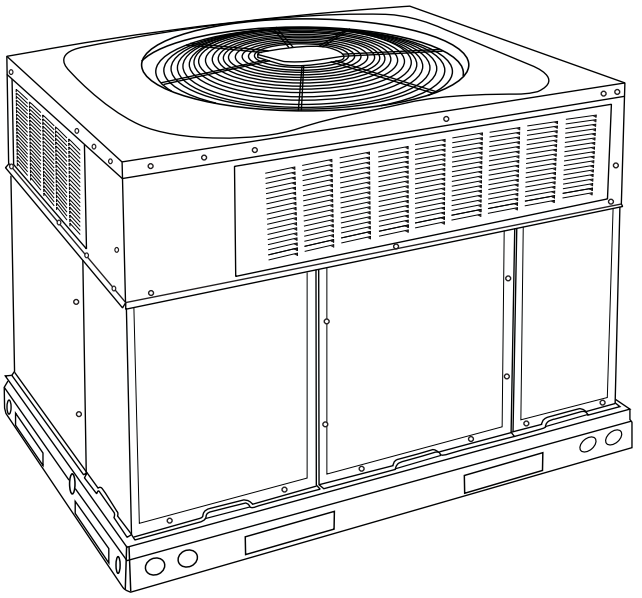
# ATTACHMENT 2

# HVAC Specifications

**50VG–A**
**Performance™ 16 SEER 2–Stage Packaged Air Conditioner System with Puron® (R–410A) Refrigerant**
**Single and Three Phase**
**2 to 5 Nominal Tons (Sizes 24–60)**

Carrier
turn to the experts

# Product Data



A09033

**Fig. 1 - Unit 50VG-A**

Single-Packaged Products with Energy-Saving Features and Puron® refrigerant.

- 15.0-16.0 SEER / 12.0-12.5 EER
- Factory-Installed TXV
- Multi-speed ECM Blower Motor - Standard
- Sound levels as low as 72dBA
- Two Stages of Cooling
- Dehumidification Feature

## FEATURES/BENEFITS

One-piece cooling unit with optional electric heater, low sound levels, easy installation, low maintenance, and dependable performance.

**Puron Environmentally Sound Refrigerant** is Carrier's unique refrigerant designed to help protect the environment. Puron is an HFC refrigerant which does not contain chlorine that can harm the ozone layer. Puron refrigerant is in service in millions of systems proving highly reliable, environmentally sound performance.

**Easy Installation**

Factory-assembled package is a compact, fully self-contained, electric cooling unit that is prewired, pre-piped, and pre-charged for minimum installation expense. These units are available in a variety of standard cooling sizes with voltage options to meet residential and light commercial requirements. Units are lightweight and install easily on a rooftop or at ground level. The high tech composite base eliminates rust problems associated with ground level applications.

**Innovative Unit Base Design**

On the inside a high-tech composite material will not rust and incorporates a sloped drain pan which improves drainage and helps inhibit mold, algae and bacterial growth. On the outside metal base rails provide added stability as well as easier handling and rigging.

**Convertible duct configuration**

Unit is designed for use in either downflow or horizontal applications. Each unit is converted from horizontal to downflow and includes horizontal duct covers. Downflow operation is provided in the field to allow vertical ductwork connections. The basepan seals on the bottom openings to ensure a positive seal in the vertical airflow mode.

**Efficient operation High-efficiency design** offers SEER (Seasonal Energy Efficiency Ratios) of up to 16.0. (See page 4.)

**Durable, dependable components**

**Scroll Compressors** have 2 stages of cooling and are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Each compressor also has vibration isolation to provide quieter operation. All compressors have internal high pressure and overcurrent protection.

**Multi-speed ECM Blower Motor** is standard on all 50VG-A.

**Direct-drive PSC (Permanent Split Capacitor) condenser-fan motors** are designed to help reduce energy consumption and provide for cooing operation down to 40°F (4.4°C) outdoor temperature. Motormaster® II low ambient kit is available as a field-installed accessory.

**Thermostatic Expansion Valve** - A hard shutoff, balance port TXV maintains a constant superheat at the evaporator exit (cooling cycle) resulting in higher overall system efficiency.

**Refrigerant system** is designed to provide dependability. Liquid filter driers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full refrigerant charge. Refrigerant service connections make checking operating pressures easier.

**High and Low Pressure Switches** provide added reliability for the compressor.

**Indoor and Outdoor coils** are computer-designed for optimum heat transfer and efficiency. The indoor coil is fabricated from copper tube and aluminum fins and is located inside the unit for protection against damage. The outdoor coil is internally mounted on the top tier of the unit.

**Low sound ratings** ensure a quiet indoor and outdoor environment with sound ratings as low as 72dBA. (See Page 4.)

**Easy to service cabinets** provide easy 3 panel accessibility to serviceable components during maintenance and installation. The basepan with integrated drain pan provides easy ground level installation with a mounting pad. A nesting feature ensures a positive basepan to roof curb seal when the unit is roof mounted. A convenient 3/4-in. (19.05 mm) wide perimeter flange makes frame mounting on a rooftop easy.

# AHRI* CAPACITIES

## Cooling Capacities and Efficiencies

| Unit Model 50VG-A | Nominal Tons | Standard CFM (High / Low Stage) | Net Cooling Capacities - Btuh (High Stage) | EER @A** | SEER† |
|---|---|---|---|---|---|
| 24 | 2 | 800 / 600 | 23000 | 12.0 | 15.0 |
| 30 | 2-1/2 | 1000 / 750 | 29000 | 12.0 | 15.0 |
| 36 | 3 | 1200 / 900 | 35400 | 12.5 | 16.0 |
| 42 | 3-1/2 | 1400 / 1050 | 42000 | 12.5 | 16.0 |
| 48 | 4 | 1600 / 1200 | 47500 | 12.3 | 16.0 |
| 60 | 5 | 1750 / 1200 | 57000 | 12.3 | 16.0 |



LEGEND
**dB–**Sound Levels (decibels)
**db**—Dry Bulb
**SEER**—Seasonal Energy Efficiency Ratio
**wb**—Wet Bulb
**COP**–Coefficient of Performance
* Air Conditioning, Heating & Refrigeration Institute.
**At "A" conditions–80°F (26.7°C) indoor db/67°F (19.4°C) indoor wb & 95°F (35°C) outdoor db.
† Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or AHRI Standards 210/240.

Notes:
1. Ratings are net values, reflecting the effects of circulating fan heat. Ratings are based on:
**Cooling Standard:** 80°F (26.7°C) db, 67°F wb (19.4°C) indoor entering–air temperature and 95°F db (35°C) outdoor entering–air temperature.
2. Before purchasing this appliance, read important energy cost and efficiency information available from AHRIdirectory.org.

### A-WEIGHTED SOUND POWER LEVEL (dBA)

| Model 50VG-A | Sound Ratings (dBA) | TYPICAL OCTAVE BAND SPECTRUM (dBA without tone adjustment) | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 |
| 24 | 73 | 60.0 | 62.5 | 68.5 | 68.5 | 64.0 | 60.0 | 53.0 |
| 30 | 77 | 57.5 | 67.0 | 73.5 | 72.0 | 67.0 | 61.0 | 52.5 |
| 36 | 73 | 62.5 | 65.5 | 67.5 | 68.0 | 65.5 | 60.0 | 52.5 |
| 42 | 73 | 60.5 | 63.5 | 68.0 | 68.0 | 66.0 | 60.5 | 53.0 |
| 48 | 72 | 60.0 | 63.5 | 66.0 | 67.0 | 63.5 | 58.5 | 49.5 |
| 60 | 75 | 69.0 | 67.0 | 69.0 | 68.0 | 65.0 | 61.5 | 54.0 |

NOTE: Tested in accordance with AHRI Standard 270 (not listed in AHRI).

# ATTACHMENT 3

# SoundPLAN Data – Construction Noise

8575 Bella Mar
SoundPLAN Data - Construction

| Source name | Reference | Level Leq1 dB(A) | Corrections Cwall dB(A) | CI dB(A) | CT dB(A) |
|---|---|---|---|---|---|
| Construction | Lw/unit | 118 | - | - | - |

8575 Bella Mar
SoundPLAN Data - Construction

| No. | Coordinates X | Y | Floor | Height | Limit Leq1 | Level w/o NP Leq1 | Level w NP Leq1 | Difference Leq1 | Conflict Leq1 |
|---|---|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) | dB | dB |
| 1 | 492088.22 | 3605567.87 | 1.Fl | 7.00 | - | 70.0 | 0 | -70.0 | - |
| 2 | 492044.23 | 3605567.54 | 1.Fl | 7.00 | - | 71.1 | 0 | -71.1 | - |
| 3 | 492001.24 | 3605567.54 | 1.Fl | 7.00 | - | 71.5 | 0 | -71.5 | - |
| 4 | 491970.81 | 3605566.55 | 1.Fl | 7.00 | - | 71.2 | 0 | -71.2 | - |
| 5 | 491879.20 | 3605565.56 | 1.Fl | 6.90 | - | 71.1 | 0 | -71.1 | - |
| 6 | 491809.74 | 3605565.23 | 1.Fl | 7.20 | - | 65.8 | 0 | -65.8 | - |
| 7 | 491797.18 | 3605636.99 | 1.Fl | 7.70 | - | 68.0 | 0 | -68.0 | - |
| 8 | 491788.58 | 3605719.68 | 1.Fl | 7.20 | - | 67.3 | 0 | -67.3 | - |
| 9 | 491786.59 | 3605769.29 | 1.Fl | 5.90 | - | 61.8 | 0 | -61.8 | - |
| 10 | 491864.65 | 3605769.95 | 1.Fl | 5.00 | - | 64.2 | 0 | -64.2 | - |
| 11 | 491928.81 | 3605769.95 | 1.Fl | 6.00 | - | 65.2 | 0 | -65.2 | - |
| 12 | 492006.53 | 3605770.28 | 1.Fl | 6.20 | - | 65.0 | 0 | -65.0 | - |
| 13 | 492101.78 | 3605769.62 | 1.Fl | 7.80 | - | 64.2 | 0 | -64.2 | - |
| 14 | 492119.31 | 3605710.09 | 1.Fl | 7.60 | - | 66.4 | 0 | -66.4 | - |
| 15 | 492116.33 | 3605634.68 | 1.Fl | 7.50 | - | 67.5 | 0 | -67.5 | - |

# ATTACHMENT 4

# SoundPLAN Data – Vehicle Traffic Noise

| Station km | ADT Veh/24h | Traffic values Vehicles type | Vehicle name | day Veh/h | evening Veh/h | night Veh/h | Speed km/h | Control device | Constr. Speed km/h | Affect. veh. % | Road surface | Gradient Min / Max % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hollister Street | | Traffic direction: | In entry direction | | | | | | | | | |
| 0+000 | 16440 | Total | - | 1370 | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Automobiles | - | 1288 | - | - | 48 | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Medium trucks | - | 33 | - | - | 48 | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Heavy trucks | - | 22 | - | - | 48 | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Buses | - | 14 | - | - | 48 | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Motorcycles | - | 14 | - | - | 48 | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 0+000 | 16440 | Auxiliary vehicle | - | - | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.818181818 |
| 1+127 | - | - | - | - | - | - | | | | | | |
| I-5 Northbound | | Traffic direction: | In entry direction | | | | | | | | | |
| 0+000 | 69120 | Total | - | 5760 | - | - | - | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Automobiles | - | 5414 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Medium trucks | - | 138 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Heavy trucks | - | 92 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Buses | - | 58 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Motorcycles | - | 58 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 0+000 | 69120 | Auxiliary vehicle | - | - | - | - | - | none | - | - | Average (of DGAC and PCC) | -0.846153846 |
| 1+100 | - | - | - | - | - | - | | | | | | |
| I-5 Southbound | | Traffic direction: | In entry direction | | | | | | | | | |
| 0+000 | 69120 | Total | - | 5760 | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Automobiles | - | 5414 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Medium trucks | - | 138 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Heavy trucks | - | 92 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Buses | - | 58 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Motorcycles | - | 58 | - | - | 105 | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 0+000 | 69120 | Auxiliary vehicle | - | - | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.5 |
| 1+102 | - | - | - | - | - | - | | | | | | |
| I-5 On-Ramp | | Traffic direction: | In entry direction | | | | | | | | | |
| 0+000 | 23040 | Total | - | 1920 | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Automobiles | - | 1805 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Medium trucks | - | 46 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Heavy trucks | - | 31 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Buses | - | 19 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Motorcycles | - | 19 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+000 | 23040 | Auxiliary vehicle | - | - | - | - | - | none | - | - | Average (of DGAC and PCC) | -2.064705882 |
| 0+754 | - | - | - | - | - | - | | | | | | |
| I-5 Off-Ramp | | Traffic direction: | In entry direction | | | | | | | | | |
| 0+000 | 23040 | Total | - | 1920 | - | - | - | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Automobiles | - | 1805 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Medium trucks | - | 46 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Heavy trucks | - | 31 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Buses | - | 19 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Motorcycles | - | 19 | - | - | 89 | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+000 | 23040 | Auxiliary vehicle | - | - | - | - | - | none | - | - | Average (of DGAC and PCC) | -0.220338983 |
| 0+655 | - | - | - | - | - | - | | | | | | |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| Track | | Coordinates of track axis | | | Track | Curve | Multiple | Corrected | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Station | X | Y | Z | | type | radius | reflections | Emission level | | |
| km | | | | | [dB] | [dB] | [dB] | day | Evening | night |
| Trolley | Rail track: | Direction: | Section: 1 | Km: 0+000 | | | | | | |
| Train type | Number of trains | | | | Speed | Length per train | Max | Emission level | | |
| | day | Evening | night | | km/h | m | | day | Evening | night |
| | | | | | | | | dB(A) | dB(A) | dB(A) |
| | 0 | 135 | 20 | 51 | 48 | 76 | yes | 57.1 | 54.8 | 54.1 |
| 0+000 | 492135.27 | 3605130.18 | 13.58 | - | - | - | - | 57.1 | 54.8 | |
| 1+124 | 492135.58 | 3606254.51 | 12.72 | - | - | - | - | 57.1 | 54.8 | |

Rail

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| No. | Coordinates X | Y | Floor | Height | Limit Day | Level w/o NP Day | Level w NP Day | Difference Day | Conflict Day |
|---|---|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) | dB | dB |
| 1 | 492022.17 | 3605647.47 | 1.Fl | 9.27 | - | 46.8 | 0 | -46.8 | - |
| 1 | 492022.17 | 3605647.47 | 2.Fl | 12.07 | - | 48.3 | 0 | -48.3 | - |
| 1 | 492022.17 | 3605647.47 | 3.Fl | 14.87 | - | 49.8 | 0 | -49.8 | - |
| 1 | 492022.17 | 3605647.47 | 4.Fl | 17.67 | - | 52.1 | 0 | -52.1 | - |
| 2 | 492024.48 | 3605667.91 | 1.Fl | 9.28 | - | 44.3 | 0 | -44.3 | - |
| 2 | 492024.48 | 3605667.91 | 2.Fl | 12.08 | - | 44.9 | 0 | -44.9 | - |
| 2 | 492024.48 | 3605667.91 | 3.Fl | 14.88 | - | 46.7 | 0 | -46.7 | - |
| 2 | 492024.48 | 3605667.91 | 4.Fl | 17.68 | - | 50.3 | 0 | -50.3 | - |
| 3 | 492024.10 | 3605691.60 | 1.Fl | 9.32 | - | 45.2 | 0 | -45.2 | - |
| 3 | 492024.10 | 3605691.60 | 2.Fl | 12.12 | - | 46.5 | 0 | -46.5 | - |
| 3 | 492024.10 | 3605691.60 | 3.Fl | 14.92 | - | 48.1 | 0 | -48.1 | - |
| 3 | 492024.10 | 3605691.60 | 4.Fl | 17.72 | - | 51.3 | 0 | -51.3 | - |
| 4 | 491886.26 | 3605678.44 | 1.Fl | 8.34 | - | 52.6 | 0 | -52.6 | - |
| 4 | 491886.26 | 3605678.44 | 2.Fl | 11.14 | - | 55.9 | 0 | -55.9 | - |
| 4 | 491886.26 | 3605678.44 | 3.Fl | 13.94 | - | 57.1 | 0 | -57.1 | - |
| 4 | 491886.26 | 3605678.44 | 4.Fl | 16.74 | - | 58.9 | 0 | -58.9 | - |
| 5 | 491868.40 | 3605679.57 | 1.Fl | 8.16 | - | 55.3 | 0 | -55.3 | - |
| 5 | 491868.40 | 3605679.57 | 2.Fl | 10.96 | - | 59.1 | 0 | -59.1 | - |
| 5 | 491868.40 | 3605679.57 | 3.Fl | 13.76 | - | 60.0 | 0 | -60.0 | - |
| 5 | 491868.40 | 3605679.57 | 4.Fl | 16.56 | - | 60.9 | 0 | -60.9 | - |
| 6 | 491849.59 | 3605680.32 | 1.Fl | 8.46 | - | 55.8 | 0 | -55.8 | - |
| 6 | 491849.59 | 3605680.32 | 2.Fl | 11.26 | - | 57.7 | 0 | -57.7 | - |
| 6 | 491849.59 | 3605680.32 | 3.Fl | 14.06 | - | 58.4 | 0 | -58.4 | - |
| 6 | 491849.59 | 3605680.32 | 4.Fl | 16.86 | - | 59.8 | 0 | -59.8 | - |
| 7 | 491816.87 | 3605703.07 | 1.Fl | 7.97 | - | 72.6 | 0 | -72.6 | - |
| 7 | 491816.87 | 3605703.07 | 2.Fl | 10.77 | - | 74.9 | 0 | -74.9 | - |
| 7 | 491816.87 | 3605703.07 | 3.Fl | 13.57 | - | 75.6 | 0 | -75.6 | - |
| 7 | 491816.87 | 3605703.07 | 4.Fl | 16.37 | - | 75.9 | 0 | -75.9 | - |
| 8 | 491820.25 | 3605681.26 | 1.Fl | 7.98 | - | 72.7 | 0 | -72.7 | - |
| 8 | 491820.25 | 3605681.26 | 2.Fl | 10.78 | - | 74.9 | 0 | -74.9 | - |
| 8 | 491820.25 | 3605681.26 | 3.Fl | 13.58 | - | 75.7 | 0 | -75.7 | - |
| 8 | 491820.25 | 3605681.26 | 4.Fl | 16.38 | - | 76.0 | 0 | -76.0 | - |
| 9 | 491830.41 | 3605654.18 | 1.Fl | 8.23 | - | 71.6 | 0 | -71.6 | - |
| 9 | 491830.41 | 3605654.18 | 2.Fl | 11.03 | - | 73.6 | 0 | -73.6 | - |
| 9 | 491830.41 | 3605654.18 | 3.Fl | 13.83 | - | 74.5 | 0 | -74.5 | - |
| 9 | 491830.41 | 3605654.18 | 4.Fl | 16.63 | - | 74.8 | 0 | -74.8 | - |
| 10 | 491834.05 | 3605627.86 | 1.Fl | 8.23 | - | 71.5 | 0 | -71.5 | - |
| 10 | 491834.05 | 3605627.86 | 2.Fl | 11.03 | - | 73.7 | 0 | -73.7 | - |
| 10 | 491834.05 | 3605627.86 | 3.Fl | 13.83 | - | 74.6 | 0 | -74.6 | - |
| 10 | 491834.05 | 3605627.86 | 4.Fl | 16.63 | - | 74.9 | 0 | -74.9 | - |
| 11 | 491836.99 | 3605597.58 | 1.Fl | 8.09 | - | 71.3 | 0 | -71.3 | - |
| 11 | 491836.99 | 3605597.58 | 2.Fl | 10.89 | - | 73.7 | 0 | -73.7 | - |
| 11 | 491836.99 | 3605597.58 | 3.Fl | 13.69 | - | 74.6 | 0 | -74.6 | - |
| 11 | 491836.99 | 3605597.58 | 4.Fl | 16.49 | - | 75.1 | 0 | -75.1 | - |
| 12 | 491866.33 | 3605587.24 | 1.Fl | 7.83 | - | 66.0 | 0 | -66.0 | - |
| 12 | 491866.33 | 3605587.24 | 2.Fl | 10.63 | - | 68.8 | 0 | -68.8 | - |
| 12 | 491866.33 | 3605587.24 | 3.Fl | 13.43 | - | 69.8 | 0 | -69.8 | - |
| 12 | 491866.33 | 3605587.24 | 4.Fl | 16.23 | - | 70.4 | 0 | -70.4 | - |
| 13 | 491863.51 | 3605613.37 | 1.Fl | 8.38 | - | 64.5 | 0 | -64.5 | - |
| 13 | 491863.51 | 3605613.37 | 2.Fl | 11.18 | - | 66.9 | 0 | -66.9 | - |
| 13 | 491863.51 | 3605613.37 | 3.Fl | 13.98 | - | 67.8 | 0 | -67.8 | - |
| 13 | 491863.51 | 3605613.37 | 4.Fl | 16.78 | - | 68.5 | 0 | -68.5 | - |
| 14 | 491861.63 | 3605641.58 | 1.Fl | 8.40 | - | 62.6 | 0 | -62.6 | - |
| 14 | 491861.63 | 3605641.58 | 2.Fl | 11.20 | - | 64.5 | 0 | -64.5 | - |
| 14 | 491861.63 | 3605641.58 | 3.Fl | 14.00 | - | 65.2 | 0 | -65.2 | - |
| 14 | 491861.63 | 3605641.58 | 4.Fl | 16.80 | - | 66.0 | 0 | -66.0 | - |
| 15 | 491893.22 | 3605597.95 | 1.Fl | 8.61 | - | 52.9 | 0 | -52.9 | - |
| 15 | 491893.22 | 3605597.95 | 2.Fl | 11.41 | - | 56.0 | 0 | -56.0 | - |
| 15 | 491893.22 | 3605597.95 | 3.Fl | 14.21 | - | 57.3 | 0 | -57.3 | - |
| 15 | 491893.22 | 3605597.95 | 4.Fl | 17.01 | - | 59.2 | 0 | -59.2 | - |
| 16 | 491909.77 | 3605607.54 | 1.Fl | 9.24 | - | 60.5 | 0 | -60.5 | - |
| 16 | 491909.77 | 3605607.54 | 2.Fl | 12.04 | - | 63.5 | 0 | -63.5 | - |
| 16 | 491909.77 | 3605607.54 | 3.Fl | 14.84 | - | 64.4 | 0 | -64.4 | - |
| 16 | 491909.77 | 3605607.54 | 4.Fl | 17.64 | - | 65.1 | 0 | -65.1 | - |
| 17 | 491962.42 | 3605599.83 | 1.Fl | 9.42 | - | 57.5 | 0 | -57.5 | - |
| 17 | 491962.42 | 3605599.83 | 2.Fl | 12.22 | - | 60.9 | 0 | -60.9 | - |
| 17 | 491962.42 | 3605599.83 | 3.Fl | 15.02 | - | 62.1 | 0 | -62.1 | - |
| 17 | 491962.42 | 3605599.83 | 4.Fl | 17.82 | - | 62.7 | 0 | -62.7 | - |
| 18 | 492017.71 | 3605599.65 | 1.Fl | 9.42 | - | 56.3 | 0 | -56.3 | - |

Receivers

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 18 | 492017.71 | 3605599.65 | 2.Fl | 12.22 | - | 59.8 | 0 | -59.8 | - |
| 18 | 492017.71 | 3605599.65 | 3.Fl | 15.02 | - | 61.3 | 0 | -61.3 | - |
| 18 | 492017.71 | 3605599.65 | 4.Fl | 17.82 | - | 61.9 | 0 | -61.9 | - |
| 19 | 492072.05 | 3605607.73 | 1.Fl | 9.45 | - | 57.9 | 0 | -57.9 | - |
| 19 | 492072.05 | 3605607.73 | 2.Fl | 12.25 | - | 59.5 | 0 | -59.5 | - |
| 19 | 492072.05 | 3605607.73 | 3.Fl | 15.05 | - | 59.9 | 0 | -59.9 | - |
| 19 | 492072.05 | 3605607.73 | 4.Fl | 17.85 | - | 60.2 | 0 | -60.2 | - |
| 20 | 492022.97 | 3605620.33 | 1.Fl | 9.42 | - | 47.9 | 0 | -47.9 | - |
| 20 | 492022.97 | 3605620.33 | 2.Fl | 12.22 | - | 50.1 | 0 | -50.1 | - |
| 20 | 492022.97 | 3605620.33 | 3.Fl | 15.02 | - | 51.6 | 0 | -51.6 | - |
| 20 | 492022.97 | 3605620.33 | 4.Fl | 17.82 | - | 53.0 | 0 | -53.0 | - |
| 21 | 491960.35 | 3605620.52 | 1.Fl | 9.29 | - | 49.5 | 0 | -49.5 | - |
| 21 | 491960.35 | 3605620.52 | 2.Fl | 12.09 | - | 52.8 | 0 | -52.8 | - |
| 21 | 491960.35 | 3605620.52 | 3.Fl | 14.89 | - | 54.2 | 0 | -54.2 | - |
| 21 | 491960.35 | 3605620.52 | 4.Fl | 17.69 | - | 55.5 | 0 | -55.5 | - |
| 22 | 492082.77 | 3605634.81 | 1.Fl | 9.69 | - | 58.7 | 0 | -58.7 | - |
| 22 | 492082.77 | 3605634.81 | 2.Fl | 12.49 | - | 60.4 | 0 | -60.4 | - |
| 22 | 492082.77 | 3605634.81 | 3.Fl | 15.29 | - | 60.4 | 0 | -60.4 | - |
| 22 | 492082.77 | 3605634.81 | 4.Fl | 18.09 | - | 60.7 | 0 | -60.7 | - |
| 23 | 492096.31 | 3605665.28 | 1.Fl | 8.95 | - | 64.0 | 0 | -64.0 | - |
| 23 | 492096.31 | 3605665.28 | 2.Fl | 11.75 | - | 65.2 | 0 | -65.2 | - |
| 23 | 492096.31 | 3605665.28 | 3.Fl | 14.55 | - | 65.0 | 0 | -65.0 | - |
| 23 | 492096.31 | 3605665.28 | 4.Fl | 17.35 | - | 64.6 | 0 | -64.6 | - |
| 24 | 492083.53 | 3605697.81 | 1.Fl | 9.60 | - | 58.6 | 0 | -58.6 | - |
| 24 | 492083.53 | 3605697.81 | 2.Fl | 12.40 | - | 60.0 | 0 | -60.0 | - |
| 24 | 492083.53 | 3605697.81 | 3.Fl | 15.20 | - | 60.2 | 0 | -60.2 | - |
| 24 | 492083.53 | 3605697.81 | 4.Fl | 18.00 | - | 60.4 | 0 | -60.4 | - |
| 25 | 492067.17 | 3605668.28 | 1.Fl | 9.58 | - | 47.1 | 0 | -47.1 | - |
| 25 | 492067.17 | 3605668.28 | 2.Fl | 12.38 | - | 48.5 | 0 | -48.5 | - |
| 25 | 492067.17 | 3605668.28 | 3.Fl | 15.18 | - | 49.2 | 0 | -49.2 | - |
| 25 | 492067.17 | 3605668.28 | 4.Fl | 17.98 | - | 51.4 | 0 | -51.4 | - |
| 26 | 492052.81 | 3605637.34 | 1.Fl | 9.59 | - | 51.9 | 0 | -51.9 | - |
| 26 | 492052.81 | 3605637.34 | 2.Fl | 12.39 | - | 54.1 | 0 | -54.1 | - |
| 26 | 492052.81 | 3605637.34 | 3.Fl | 15.19 | - | 55.1 | 0 | -55.1 | - |
| 26 | 492052.81 | 3605637.34 | 4.Fl | 17.99 | - | 56.0 | 0 | -56.0 | - |
| 27 | 492089.92 | 3605710.03 | 1.Fl | 9.65 | - | 62.0 | 0 | -62.0 | - |
| 27 | 492089.92 | 3605710.03 | 2.Fl | 12.45 | - | 62.8 | 0 | -62.8 | - |
| 27 | 492089.92 | 3605710.03 | 3.Fl | 15.25 | - | 63.0 | 0 | -63.0 | - |
| 27 | 492089.92 | 3605710.03 | 4.Fl | 18.05 | - | 63.0 | 0 | -63.0 | - |
| 28 | 492059.27 | 3605721.88 | 1.Fl | 9.68 | - | 61.0 | 0 | -61.0 | - |
| 28 | 492059.27 | 3605721.88 | 2.Fl | 12.48 | - | 63.0 | 0 | -63.0 | - |
| 28 | 492059.27 | 3605721.88 | 3.Fl | 15.28 | - | 63.5 | 0 | -63.5 | - |
| 28 | 492059.27 | 3605721.88 | 4.Fl | 18.08 | - | 63.6 | 0 | -63.6 | - |
| 29 | 492004.92 | 3605723.20 | 1.Fl | 9.12 | - | 62.0 | 0 | -62.0 | - |
| 29 | 492004.92 | 3605723.20 | 2.Fl | 11.92 | - | 64.3 | 0 | -64.3 | - |
| 29 | 492004.92 | 3605723.20 | 3.Fl | 14.72 | - | 64.7 | 0 | -64.7 | - |
| 29 | 492004.92 | 3605723.20 | 4.Fl | 17.52 | - | 64.7 | 0 | -64.7 | - |
| 30 | 491946.25 | 3605722.82 | 1.Fl | 8.76 | - | 64.2 | 0 | -64.2 | - |
| 30 | 491946.25 | 3605722.82 | 2.Fl | 11.56 | - | 66.0 | 0 | -66.0 | - |
| 30 | 491946.25 | 3605722.82 | 3.Fl | 14.36 | - | 66.3 | 0 | -66.3 | - |
| 30 | 491946.25 | 3605722.82 | 4.Fl | 17.16 | - | 66.3 | 0 | -66.3 | - |
| 31 | 491913.90 | 3605710.97 | 1.Fl | 8.81 | - | 65.0 | 0 | -65.0 | - |
| 31 | 491913.90 | 3605710.97 | 2.Fl | 11.61 | - | 66.6 | 0 | -66.6 | - |
| 31 | 491913.90 | 3605710.97 | 3.Fl | 14.41 | - | 66.7 | 0 | -66.7 | - |
| 31 | 491913.90 | 3605710.97 | 4.Fl | 17.21 | - | 66.7 | 0 | -66.7 | - |
| 32 | 491871.03 | 3605717.55 | 1.Fl | 8.60 | - | 66.9 | 0 | -66.9 | - |
| 32 | 491871.03 | 3605717.55 | 2.Fl | 11.40 | - | 68.9 | 0 | -68.9 | - |
| 32 | 491871.03 | 3605717.55 | 3.Fl | 14.20 | - | 69.1 | 0 | -69.1 | - |
| 32 | 491871.03 | 3605717.55 | 4.Fl | 17.00 | - | 69.2 | 0 | -69.2 | - |
| 33 | 491918.04 | 3605666.40 | 1.Fl | 8.71 | - | 52.5 | 0 | -52.5 | - |
| 33 | 491918.04 | 3605666.40 | 2.Fl | 11.51 | - | 55.1 | 0 | -55.1 | - |
| 33 | 491918.04 | 3605666.40 | 3.Fl | 14.31 | - | 56.3 | 0 | -56.3 | - |
| 33 | 491918.04 | 3605666.40 | 4.Fl | 17.11 | - | 57.8 | 0 | -57.8 | - |
| 34 | 491949.26 | 3605666.78 | 1.Fl | 8.82 | - | 42.8 | 0 | -42.8 | - |
| 34 | 491949.26 | 3605666.78 | 2.Fl | 11.62 | - | 43.5 | 0 | -43.5 | - |
| 34 | 491949.26 | 3605666.78 | 3.Fl | 14.42 | - | 45.4 | 0 | -45.4 | - |
| 34 | 491949.26 | 3605666.78 | 4.Fl | 17.22 | - | 51.4 | 0 | -51.4 | - |
| 35 | 491979.53 | 3605667.91 | 1.Fl | 8.00 | - | 43.0 | 0 | -43.0 | - |
| 35 | 491979.53 | 3605667.91 | 2.Fl | 10.80 | - | 43.1 | 0 | -43.1 | - |
| 35 | 491979.53 | 3605667.91 | 3.Fl | 13.60 | - | 44.1 | 0 | -44.1 | - |
| 35 | 491979.53 | 3605667.91 | 4.Fl | 16.40 | - | 47.8 | 0 | -47.8 | - |

| Source name | | Traffic lane | | Level w/o NP Day dB(A) | Level w NP Day dB(A) |
|---|---|---|---|---|---|
| 1 | 1.Fl | 46.8 | 0.0 | | |
| Hollister Street | | - | | 42.8 | - |
| I-5 Northbound | | - | | 37.2 | - |
| I-5 Off-Ramp | | - | | 29.0 | - |
| I-5 On-Ramp | | - | | 30.6 | - |
| I-5 Southbound | | - | | 36.9 | - |
| Trolley | | - | | 42.3 | - |
| 1 | 2.Fl | 48.3 | 0.0 | | |
| Hollister Street | | - | | 44.6 | - |
| I-5 Northbound | | - | | 40.1 | - |
| I-5 Off-Ramp | | - | | 31.5 | - |
| I-5 On-Ramp | | - | | 33.1 | - |
| I-5 Southbound | | - | | 39.7 | - |
| Trolley | | - | | 41.9 | - |
| 1 | 3.Fl | 49.8 | 0.0 | | |
| Hollister Street | | - | | 45.9 | - |
| I-5 Northbound | | - | | 42.8 | - |
| I-5 Off-Ramp | | - | | 33.9 | - |
| I-5 On-Ramp | | - | | 35.4 | - |
| I-5 Southbound | | - | | 42.5 | - |
| Trolley | | - | | 41.5 | - |
| 1 | 4.Fl | 52.1 | 0.0 | | |
| Hollister Street | | - | | 46.7 | - |
| I-5 Northbound | | - | | 46.6 | - |
| I-5 Off-Ramp | | - | | 37.0 | - |
| I-5 On-Ramp | | - | | 37.8 | - |
| I-5 Southbound | | - | | 46.4 | - |
| Trolley | | - | | 42.1 | - |
| 2 | 1.Fl | 44.3 | 0.0 | | |
| Hollister Street | | - | | 36.1 | - |
| I-5 Northbound | | - | | 35.5 | - |
| I-5 Off-Ramp | | - | | 26.8 | - |
| I-5 On-Ramp | | - | | 28.5 | - |
| I-5 Southbound | | - | | 35.3 | - |
| Trolley | | - | | 41.8 | - |
| 2 | 2.Fl | 44.9 | 0.0 | | |
| Hollister Street | | - | | 37.4 | - |
| I-5 Northbound | | - | | 37.4 | - |
| I-5 Off-Ramp | | - | | 28.3 | - |
| I-5 On-Ramp | | - | | 30.0 | - |
| I-5 Southbound | | - | | 37.2 | - |
| Trolley | | - | | 41.1 | - |
| 2 | 3.Fl | 46.7 | 0.0 | | |
| Hollister Street | | - | | 39.0 | - |
| I-5 Northbound | | - | | 40.9 | - |
| I-5 Off-Ramp | | - | | 31.4 | - |
| I-5 On-Ramp | | - | | 33.0 | - |
| I-5 Southbound | | - | | 40.7 | - |
| Trolley | | - | | 40.4 | - |
| 2 | 4.Fl | 50.3 | 0.0 | | |
| Hollister Street | | - | | 40.2 | - |
| I-5 Northbound | | - | | 45.8 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Off-Ramp | | - | | 35.7 | - |
| I-5 On-Ramp | | - | | 36.5 | - |
| I-5 Southbound | | - | | 45.8 | - |
| Trolley | | - | | 41.0 | - |
| 3 | 1.Fl | 45.2 | 0.0 | | |
| Hollister Street | | - | | 37.4 | - |
| I-5 Northbound | | - | | 38.4 | - |
| I-5 Off-Ramp | | - | | 27.2 | - |
| I-5 On-Ramp | | - | | 29.0 | - |
| I-5 Southbound | | - | | 36.5 | - |
| Trolley | | - | | 41.7 | - |
| 3 | 2.Fl | 46.5 | 0.0 | | |
| Hollister Street | | - | | 39.4 | - |
| I-5 Northbound | | - | | 41.2 | - |
| I-5 Off-Ramp | | - | | 28.7 | - |
| I-5 On-Ramp | | - | | 30.3 | - |
| I-5 Southbound | | - | | 38.9 | - |
| Trolley | | - | | 41.1 | - |
| 3 | 3.Fl | 48.1 | 0.0 | | |
| Hollister Street | | - | | 40.6 | - |
| I-5 Northbound | | - | | 43.6 | - |
| I-5 Off-Ramp | | - | | 31.8 | - |
| I-5 On-Ramp | | - | | 33.4 | - |
| I-5 Southbound | | - | | 41.9 | - |
| Trolley | | - | | 40.4 | - |
| 3 | 4.Fl | 51.3 | 0.0 | | |
| Hollister Street | | - | | 42.1 | - |
| I-5 Northbound | | - | | 47.3 | - |
| I-5 Off-Ramp | | - | | 36.1 | - |
| I-5 On-Ramp | | - | | 37.0 | - |
| I-5 Southbound | | - | | 46.4 | - |
| Trolley | | - | | 41.2 | - |
| 4 | 1.Fl | 52.6 | 0.0 | | |
| Hollister Street | | - | | 25.9 | - |
| I-5 Northbound | | - | | 49.6 | - |
| I-5 Off-Ramp | | - | | 39.4 | - |
| I-5 On-Ramp | | - | | 43.6 | - |
| I-5 Southbound | | - | | 47.2 | - |
| Trolley | | - | | 38.1 | - |
| 4 | 2.Fl | 55.9 | 0.0 | | |
| Hollister Street | | - | | 28.0 | - |
| I-5 Northbound | | - | | 52.7 | - |
| I-5 Off-Ramp | | - | | 43.5 | - |
| I-5 On-Ramp | | - | | 46.1 | - |
| I-5 Southbound | | - | | 51.3 | - |
| Trolley | | - | | 37.6 | - |
| 4 | 3.Fl | 57.1 | 0.0 | | |
| Hollister Street | | - | | 29.8 | - |
| I-5 Northbound | | - | | 53.8 | - |
| I-5 Off-Ramp | | - | | 44.9 | - |
| I-5 On-Ramp | | - | | 47.2 | - |
| I-5 Southbound | | - | | 52.6 | - |
| Trolley | | - | | 37.0 | - |
| 4 | 4.Fl | 58.9 | 0.0 | | |
| Hollister Street | | - | | 32.9 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Northbound | | - | | 55.5 | - |
| I-5 Off-Ramp | | - | | 46.7 | - |
| I-5 On-Ramp | | - | | 48.6 | - |
| I-5 Southbound | | - | | 54.7 | - |
| Trolley | | - | | 38.6 | - |
| 5 | 1.Fl | 55.3 | 0.0 | | |
| Hollister Street | | - | | 25.7 | - |
| I-5 Northbound | | - | | 52.4 | - |
| I-5 Off-Ramp | | - | | 41.5 | - |
| I-5 On-Ramp | | - | | 45.3 | - |
| I-5 Southbound | | - | | 50.4 | - |
| Trolley | | - | | 38.0 | - |
| 5 | 2.Fl | 59.1 | 0.0 | | |
| Hollister Street | | - | | 27.2 | - |
| I-5 Northbound | | - | | 56.3 | - |
| I-5 Off-Ramp | | - | | 45.4 | - |
| I-5 On-Ramp | | - | | 48.5 | - |
| I-5 Southbound | | - | | 54.5 | - |
| Trolley | | - | | 37.6 | - |
| 5 | 3.Fl | 60.0 | 0.0 | | |
| Hollister Street | | - | | 29.5 | - |
| I-5 Northbound | | - | | 57.1 | - |
| I-5 Off-Ramp | | - | | 46.7 | - |
| I-5 On-Ramp | | - | | 49.4 | - |
| I-5 Southbound | | - | | 55.6 | - |
| Trolley | | - | | 36.9 | - |
| 5 | 4.Fl | 60.9 | 0.0 | | |
| Hollister Street | | - | | 32.7 | - |
| I-5 Northbound | | - | | 57.8 | - |
| I-5 Off-Ramp | | - | | 47.9 | - |
| I-5 On-Ramp | | - | | 50.2 | - |
| I-5 Southbound | | - | | 56.7 | - |
| Trolley | | - | | 39.6 | - |
| 6 | 1.Fl | 55.8 | 0.0 | | |
| Hollister Street | | - | | 23.9 | - |
| I-5 Northbound | | - | | 53.9 | - |
| I-5 Off-Ramp | | - | | 34.6 | - |
| I-5 On-Ramp | | - | | 37.7 | - |
| I-5 Southbound | | - | | 50.9 | - |
| Trolley | | - | | 38.2 | - |
| 6 | 2.Fl | 57.7 | 0.0 | | |
| Hollister Street | | - | | 25.0 | - |
| I-5 Northbound | | - | | 56.3 | - |
| I-5 Off-Ramp | | - | | 37.8 | - |
| I-5 On-Ramp | | - | | 40.2 | - |
| I-5 Southbound | | - | | 51.3 | - |
| Trolley | | - | | 37.7 | - |
| 6 | 3.Fl | 58.4 | 0.0 | | |
| Hollister Street | | - | | 28.0 | - |
| I-5 Northbound | | - | | 56.8 | - |
| I-5 Off-Ramp | | - | | 39.7 | - |
| I-5 On-Ramp | | - | | 41.9 | - |
| I-5 Southbound | | - | | 52.7 | - |
| Trolley | | - | | 37.2 | - |
| 6 | 4.Fl | 59.8 | 0.0 | | |

| | | | | | |
|---|---|---|---|---|---|
| Hollister Street | | - | | 32.6 | - |
| I-5 Northbound | | - | | 57.6 | - |
| I-5 Off-Ramp | | - | | 43.7 | - |
| I-5 On-Ramp | | - | | 45.5 | - |
| I-5 Southbound | | - | | 54.8 | - |
| Trolley | | - | | 40.4 | - |
| 7 | 1.Fl | 72.6 | 0.0 | | |
| Hollister Street | | - | | 17.7 | - |
| I-5 Northbound | | - | | 69.9 | - |
| I-5 Off-Ramp | | - | | 58.6 | - |
| I-5 On-Ramp | | - | | 64.2 | - |
| I-5 Southbound | | - | | 66.9 | - |
| Trolley | | - | | 35.0 | - |
| 7 | 2.Fl | 74.9 | 0.0 | | |
| Hollister Street | | - | | 19.1 | - |
| I-5 Northbound | | - | | 72.1 | - |
| I-5 Off-Ramp | | - | | 61.6 | - |
| I-5 On-Ramp | | - | | 66.2 | - |
| I-5 Southbound | | - | | 69.7 | - |
| Trolley | | - | | 34.9 | - |
| 7 | 3.Fl | 75.6 | 0.0 | | |
| Hollister Street | | - | | 21.4 | - |
| I-5 Northbound | | - | | 72.8 | - |
| I-5 Off-Ramp | | - | | 62.3 | - |
| I-5 On-Ramp | | - | | 66.8 | - |
| I-5 Southbound | | - | | 70.4 | - |
| Trolley | | - | | 33.8 | - |
| 7 | 4.Fl | 75.9 | 0.0 | | |
| Hollister Street | | - | | 27.7 | - |
| I-5 Northbound | | - | | 73.0 | - |
| I-5 Off-Ramp | | - | | 62.8 | - |
| I-5 On-Ramp | | - | | 67.0 | - |
| I-5 Southbound | | - | | 70.8 | - |
| Trolley | | - | | 34.2 | - |
| 8 | 1.Fl | 72.7 | 0.0 | | |
| Hollister Street | | - | | 17.7 | - |
| I-5 Northbound | | - | | 70.0 | - |
| I-5 Off-Ramp | | - | | 58.8 | - |
| I-5 On-Ramp | | - | | 64.3 | - |
| I-5 Southbound | | - | | 67.1 | - |
| Trolley | | - | | 35.0 | - |
| 8 | 2.Fl | 74.9 | 0.0 | | |
| Hollister Street | | - | | 18.8 | - |
| I-5 Northbound | | - | | 72.1 | - |
| I-5 Off-Ramp | | - | | 61.4 | - |
| I-5 On-Ramp | | - | | 66.2 | - |
| I-5 Southbound | | - | | 69.7 | - |
| Trolley | | - | | 34.9 | - |
| 8 | 3.Fl | 75.7 | 0.0 | | |
| Hollister Street | | - | | 21.1 | - |
| I-5 Northbound | | - | | 72.9 | - |
| I-5 Off-Ramp | | - | | 62.2 | - |
| I-5 On-Ramp | | - | | 66.8 | - |
| I-5 Southbound | | - | | 70.5 | - |
| Trolley | | - | | 33.8 | - |

| | | | | | |
|---|---|---|---|---|---|
| 8 | 4.Fl | 76.0 | 0.0 | | |
| Hollister Street | | - | | 27.7 | - |
| I-5 Northbound | | - | | 73.0 | - |
| I-5 Off-Ramp | | - | | 62.8 | - |
| I-5 On-Ramp | | - | | 67.1 | - |
| I-5 Southbound | | - | | 71.0 | - |
| Trolley | | - | | 33.7 | - |
| 9 | 1.Fl | 71.6 | 0.0 | | |
| Hollister Street | | - | | 19.0 | - |
| I-5 Northbound | | - | | 68.8 | - |
| I-5 Off-Ramp | | - | | 57.9 | - |
| I-5 On-Ramp | | - | | 63.3 | - |
| I-5 Southbound | | - | | 66.1 | - |
| Trolley | | - | | 35.4 | - |
| 9 | 2.Fl | 73.6 | 0.0 | | |
| Hollister Street | | - | | 20.8 | - |
| I-5 Northbound | | - | | 70.7 | - |
| I-5 Off-Ramp | | - | | 60.6 | - |
| I-5 On-Ramp | | - | | 65.1 | - |
| I-5 Southbound | | - | | 68.5 | - |
| Trolley | | - | | 35.1 | - |
| 9 | 3.Fl | 74.5 | 0.0 | | |
| Hollister Street | | - | | 23.3 | - |
| I-5 Northbound | | - | | 71.5 | - |
| I-5 Off-Ramp | | - | | 61.5 | - |
| I-5 On-Ramp | | - | | 65.9 | - |
| I-5 Southbound | | - | | 69.3 | - |
| Trolley | | - | | 34.1 | - |
| 9 | 4.Fl | 74.8 | 0.0 | | |
| Hollister Street | | - | | 29.8 | - |
| I-5 Northbound | | - | | 71.7 | - |
| I-5 Off-Ramp | | - | | 62.1 | - |
| I-5 On-Ramp | | - | | 66.1 | - |
| I-5 Southbound | | - | | 69.9 | - |
| Trolley | | - | | 36.0 | - |
| 10 | 1.Fl | 71.5 | 0.0 | | |
| Hollister Street | | - | | 19.7 | - |
| I-5 Northbound | | - | | 68.7 | - |
| I-5 Off-Ramp | | - | | 57.7 | - |
| I-5 On-Ramp | | - | | 63.2 | - |
| I-5 Southbound | | - | | 66.1 | - |
| Trolley | | - | | 35.8 | - |
| 10 | 2.Fl | 73.7 | 0.0 | | |
| Hollister Street | | - | | 20.9 | - |
| I-5 Northbound | | - | | 70.8 | - |
| I-5 Off-Ramp | | - | | 60.4 | - |
| I-5 On-Ramp | | - | | 65.1 | - |
| I-5 Southbound | | - | | 68.6 | - |
| Trolley | | - | | 35.5 | - |
| 10 | 3.Fl | 74.6 | 0.0 | | |
| Hollister Street | | - | | 23.5 | - |
| I-5 Northbound | | - | | 71.6 | - |
| I-5 Off-Ramp | | - | | 61.2 | - |
| I-5 On-Ramp | | - | | 65.9 | - |
| I-5 Southbound | | - | | 69.5 | - |

| | | | | | |
|---|---|---|---|---|---|
| Trolley | | - | | 34.4 | - |
| 10 | 4.Fl | 74.9 | 0.0 | | |
| Hollister Street | | - | | 29.5 | - |
| I-5 Northbound | | - | | 71.9 | - |
| I-5 Off-Ramp | | - | | 61.8 | - |
| I-5 On-Ramp | | - | | 66.1 | - |
| I-5 Southbound | | - | | 70.0 | - |
| Trolley | | - | | 36.1 | - |
| 11 | 1.Fl | 71.3 | 0.0 | | |
| Hollister Street | | - | | 23.9 | - |
| I-5 Northbound | | - | | 68.4 | - |
| I-5 Off-Ramp | | - | | 57.3 | - |
| I-5 On-Ramp | | - | | 63.3 | - |
| I-5 Southbound | | - | | 65.8 | - |
| Trolley | | - | | 35.4 | - |
| 11 | 2.Fl | 73.7 | 0.0 | | |
| Hollister Street | | - | | 27.7 | - |
| I-5 Northbound | | - | | 70.7 | - |
| I-5 Off-Ramp | | - | | 60.4 | - |
| I-5 On-Ramp | | - | | 65.3 | - |
| I-5 Southbound | | - | | 68.5 | - |
| Trolley | | - | | 35.3 | - |
| 11 | 3.Fl | 74.6 | 0.0 | | |
| Hollister Street | | - | | 29.4 | - |
| I-5 Northbound | | - | | 71.6 | - |
| I-5 Off-Ramp | | - | | 61.3 | - |
| I-5 On-Ramp | | - | | 66.2 | - |
| I-5 Southbound | | - | | 69.4 | - |
| Trolley | | - | | 34.4 | - |
| 11 | 4.Fl | 75.1 | 0.0 | | |
| Hollister Street | | - | | 32.3 | - |
| I-5 Northbound | | - | | 72.1 | - |
| I-5 Off-Ramp | | - | | 62.0 | - |
| I-5 On-Ramp | | - | | 66.5 | - |
| I-5 Southbound | | - | | 70.0 | - |
| Trolley | | - | | 36.8 | - |
| 12 | 1.Fl | 66.0 | 0.0 | | |
| Hollister Street | | - | | 40.4 | - |
| I-5 Northbound | | - | | 63.0 | - |
| I-5 Off-Ramp | | - | | 51.8 | - |
| I-5 On-Ramp | | - | | 58.8 | - |
| I-5 Southbound | | - | | 60.4 | - |
| Trolley | | - | | 37.0 | - |
| 12 | 2.Fl | 68.8 | 0.0 | | |
| Hollister Street | | - | | 42.8 | - |
| I-5 Northbound | | - | | 65.6 | - |
| I-5 Off-Ramp | | - | | 55.5 | - |
| I-5 On-Ramp | | - | | 61.1 | - |
| I-5 Southbound | | - | | 63.6 | - |
| Trolley | | - | | 37.7 | - |
| 12 | 3.Fl | 69.8 | 0.0 | | |
| Hollister Street | | - | | 44.0 | - |
| I-5 Northbound | | - | | 66.6 | - |
| I-5 Off-Ramp | | - | | 56.7 | - |
| I-5 On-Ramp | | - | | 62.0 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Southbound | | - | | 64.7 | - |
| Trolley | | - | | 38.1 | - |
| 12 | 4.Fl | 70.4 | 0.0 | | |
| Hollister Street | | - | | 44.7 | - |
| I-5 Northbound | | - | | 67.2 | - |
| I-5 Off-Ramp | | - | | 57.4 | - |
| I-5 On-Ramp | | - | | 62.4 | - |
| I-5 Southbound | | - | | 65.4 | - |
| Trolley | | - | | 38.8 | - |
| 13 | 1.Fl | 64.5 | 0.0 | | |
| Hollister Street | | - | | 33.6 | - |
| I-5 Northbound | | - | | 61.5 | - |
| I-5 Off-Ramp | | - | | 51.4 | - |
| I-5 On-Ramp | | - | | 55.8 | - |
| I-5 Southbound | | - | | 59.4 | - |
| Trolley | | - | | 37.4 | - |
| 13 | 2.Fl | 66.9 | 0.0 | | |
| Hollister Street | | - | | 36.2 | - |
| I-5 Northbound | | - | | 63.7 | - |
| I-5 Off-Ramp | | - | | 54.5 | - |
| I-5 On-Ramp | | - | | 57.7 | - |
| I-5 Southbound | | - | | 62.1 | - |
| Trolley | | - | | 37.3 | - |
| 13 | 3.Fl | 67.8 | 0.0 | | |
| Hollister Street | | - | | 37.6 | - |
| I-5 Northbound | | - | | 64.6 | - |
| I-5 Off-Ramp | | - | | 55.4 | - |
| I-5 On-Ramp | | - | | 58.7 | - |
| I-5 Southbound | | - | | 63.0 | - |
| Trolley | | - | | 36.7 | - |
| 13 | 4.Fl | 68.5 | 0.0 | | |
| Hollister Street | | - | | 39.0 | - |
| I-5 Northbound | | - | | 65.3 | - |
| I-5 Off-Ramp | | - | | 56.2 | - |
| I-5 On-Ramp | | - | | 59.4 | - |
| I-5 Southbound | | - | | 63.8 | - |
| Trolley | | - | | 39.2 | - |
| 14 | 1.Fl | 62.6 | 0.0 | | |
| Hollister Street | | - | | 27.8 | - |
| I-5 Northbound | | - | | 59.6 | - |
| I-5 Off-Ramp | | - | | 49.6 | - |
| I-5 On-Ramp | | - | | 53.6 | - |
| I-5 Southbound | | - | | 57.5 | - |
| Trolley | | - | | 37.4 | - |
| 14 | 2.Fl | 64.5 | 0.0 | | |
| Hollister Street | | - | | 29.6 | - |
| I-5 Northbound | | - | | 61.3 | - |
| I-5 Off-Ramp | | - | | 52.3 | - |
| I-5 On-Ramp | | - | | 55.3 | - |
| I-5 Southbound | | - | | 59.6 | - |
| Trolley | | - | | 37.0 | - |
| 14 | 3.Fl | 65.2 | 0.0 | | |
| Hollister Street | | - | | 31.3 | - |
| I-5 Northbound | | - | | 62.1 | - |
| I-5 Off-Ramp | | - | | 53.2 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 On-Ramp | | - | | 56.1 | - |
| I-5 Southbound | | - | | 60.5 | - |
| Trolley | | - | | 36.1 | - |
| 14 | 4.Fl | 66.0 | 0.0 | | |
| Hollister Street | | - | | 33.9 | - |
| I-5 Northbound | | - | | 62.8 | - |
| I-5 Off-Ramp | | - | | 54.0 | - |
| I-5 On-Ramp | | - | | 56.7 | - |
| I-5 Southbound | | - | | 61.3 | - |
| Trolley | | - | | 37.5 | - |
| 15 | 1.Fl | 52.9 | 0.0 | | |
| Hollister Street | | - | | 42.4 | - |
| I-5 Northbound | | - | | 47.6 | - |
| I-5 Off-Ramp | | - | | 31.2 | - |
| I-5 On-Ramp | | - | | 48.5 | - |
| I-5 Southbound | | - | | 45.7 | - |
| Trolley | | - | | 39.2 | - |
| 15 | 2.Fl | 56.0 | 0.0 | | |
| Hollister Street | | - | | 44.5 | - |
| I-5 Northbound | | - | | 51.1 | - |
| I-5 Off-Ramp | | - | | 33.7 | - |
| I-5 On-Ramp | | - | | 51.1 | - |
| I-5 Southbound | | - | | 50.0 | - |
| Trolley | | - | | 39.4 | - |
| 15 | 3.Fl | 57.3 | 0.0 | | |
| Hollister Street | | - | | 45.9 | - |
| I-5 Northbound | | - | | 53.0 | - |
| I-5 Off-Ramp | | - | | 36.3 | - |
| I-5 On-Ramp | | - | | 51.7 | - |
| I-5 Southbound | | - | | 51.6 | - |
| Trolley | | - | | 39.6 | - |
| 15 | 4.Fl | 59.2 | 0.0 | | |
| Hollister Street | | - | | 46.5 | - |
| I-5 Northbound | | - | | 55.2 | - |
| I-5 Off-Ramp | | - | | 43.1 | - |
| I-5 On-Ramp | | - | | 52.3 | - |
| I-5 Southbound | | - | | 54.1 | - |
| Trolley | | - | | 40.9 | - |
| 16 | 1.Fl | 60.5 | 0.0 | | |
| Hollister Street | | - | | 38.2 | - |
| I-5 Northbound | | - | | 57.0 | - |
| I-5 Off-Ramp | | - | | 47.5 | - |
| I-5 On-Ramp | | - | | 53.0 | - |
| I-5 Southbound | | - | | 55.4 | - |
| Trolley | | - | | 38.3 | - |
| 16 | 2.Fl | 63.5 | 0.0 | | |
| Hollister Street | | - | | 40.6 | - |
| I-5 Northbound | | - | | 60.0 | - |
| I-5 Off-Ramp | | - | | 50.7 | - |
| I-5 On-Ramp | | - | | 55.5 | - |
| I-5 Southbound | | - | | 58.6 | - |
| Trolley | | - | | 37.8 | - |
| 16 | 3.Fl | 64.4 | 0.0 | | |
| Hollister Street | | - | | 41.8 | - |
| I-5 Northbound | | - | | 61.0 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Off-Ramp | | - | | 52.0 | - |
| I-5 On-Ramp | | - | | 56.2 | - |
| I-5 Southbound | | - | | 59.6 | - |
| Trolley | | - | | 37.5 | - |
| 16 | 4.Fl | 65.1 | 0.0 | | |
| Hollister Street | | - | | 42.4 | - |
| I-5 Northbound | | - | | 61.6 | - |
| I-5 Off-Ramp | | - | | 52.8 | - |
| I-5 On-Ramp | | - | | 56.6 | - |
| I-5 Southbound | | - | | 60.4 | - |
| Trolley | | - | | 38.3 | - |
| 17 | 1.Fl | 57.5 | 0.0 | | |
| Hollister Street | | - | | 44.2 | - |
| I-5 Northbound | | - | | 53.5 | - |
| I-5 Off-Ramp | | - | | 44.9 | - |
| I-5 On-Ramp | | - | | 50.1 | - |
| I-5 Southbound | | - | | 52.2 | - |
| Trolley | | - | | 40.3 | - |
| 17 | 2.Fl | 60.9 | 0.0 | | |
| Hollister Street | | - | | 46.7 | - |
| I-5 Northbound | | - | | 57.0 | - |
| I-5 Off-Ramp | | - | | 48.4 | - |
| I-5 On-Ramp | | - | | 53.2 | - |
| I-5 Southbound | | - | | 55.9 | - |
| Trolley | | - | | 40.3 | - |
| 17 | 3.Fl | 62.1 | 0.0 | | |
| Hollister Street | | - | | 47.5 | - |
| I-5 Northbound | | - | | 58.1 | - |
| I-5 Off-Ramp | | - | | 49.9 | - |
| I-5 On-Ramp | | - | | 54.1 | - |
| I-5 Southbound | | - | | 57.4 | - |
| Trolley | | - | | 40.6 | - |
| 17 | 4.Fl | 62.7 | 0.0 | | |
| Hollister Street | | - | | 48.1 | - |
| I-5 Northbound | | - | | 58.7 | - |
| I-5 Off-Ramp | | - | | 50.7 | - |
| I-5 On-Ramp | | - | | 54.4 | - |
| I-5 Southbound | | - | | 58.0 | - |
| Trolley | | - | | 41.1 | - |
| 18 | 1.Fl | 56.3 | 0.0 | | |
| Hollister Street | | - | | 47.4 | - |
| I-5 Northbound | | - | | 51.7 | - |
| I-5 Off-Ramp | | - | | 43.5 | - |
| I-5 On-Ramp | | - | | 48.1 | - |
| I-5 Southbound | | - | | 50.8 | - |
| Trolley | | - | | 41.9 | - |
| 18 | 2.Fl | 59.8 | 0.0 | | |
| Hollister Street | | - | | 49.4 | - |
| I-5 Northbound | | - | | 55.6 | - |
| I-5 Off-Ramp | | - | | 47.3 | - |
| I-5 On-Ramp | | - | | 51.6 | - |
| I-5 Southbound | | - | | 54.7 | - |
| Trolley | | - | | 42.0 | - |
| 18 | 3.Fl | 61.3 | 0.0 | | |
| Hollister Street | | - | | 50.2 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Northbound | | - | | 57.1 | - |
| I-5 Off-Ramp | | - | | 49.1 | - |
| I-5 On-Ramp | | - | | 52.9 | - |
| I-5 Southbound | | - | | 56.4 | - |
| Trolley | | - | | 42.3 | - |
| 18 | 4.Fl | 61.9 | 0.0 | | |
| Hollister Street | | - | | 50.6 | - |
| I-5 Northbound | | - | | 57.7 | - |
| I-5 Off-Ramp | | - | | 50.0 | - |
| I-5 On-Ramp | | - | | 53.4 | - |
| I-5 Southbound | | - | | 57.1 | - |
| Trolley | | - | | 42.8 | - |
| 19 | 1.Fl | 57.9 | 0.0 | | |
| Hollister Street | | - | | 57.5 | - |
| I-5 Northbound | | - | | 30.7 | - |
| I-5 Off-Ramp | | - | | 20.4 | - |
| I-5 On-Ramp | | - | | 26.2 | - |
| I-5 Southbound | | - | | 30.0 | - |
| Trolley | | - | | 47.7 | - |
| 19 | 2.Fl | 59.5 | 0.0 | | |
| Hollister Street | | - | | 59.1 | - |
| I-5 Northbound | | - | | 31.2 | - |
| I-5 Off-Ramp | | - | | 20.6 | - |
| I-5 On-Ramp | | - | | 26.8 | - |
| I-5 Southbound | | - | | 30.5 | - |
| Trolley | | - | | 48.2 | - |
| 19 | 3.Fl | 59.9 | 0.0 | | |
| Hollister Street | | - | | 59.6 | - |
| I-5 Northbound | | - | | 32.7 | - |
| I-5 Off-Ramp | | - | | 22.4 | - |
| I-5 On-Ramp | | - | | 28.4 | - |
| I-5 Southbound | | - | | 34.2 | - |
| Trolley | | - | | 48.8 | - |
| 19 | 4.Fl | 60.2 | 0.0 | | |
| Hollister Street | | - | | 59.8 | - |
| I-5 Northbound | | - | | 35.7 | - |
| I-5 Off-Ramp | | - | | 25.6 | - |
| I-5 On-Ramp | | - | | 31.7 | - |
| I-5 Southbound | | - | | 36.5 | - |
| Trolley | | - | | 49.5 | - |
| 20 | 1.Fl | 47.9 | 0.0 | | |
| Hollister Street | | - | | 43.3 | - |
| I-5 Northbound | | - | | 39.8 | - |
| I-5 Off-Ramp | | - | | 31.3 | - |
| I-5 On-Ramp | | - | | 33.6 | - |
| I-5 Southbound | | - | | 39.2 | - |
| Trolley | | - | | 42.7 | - |
| 20 | 2.Fl | 50.1 | 0.0 | | |
| Hollister Street | | - | | 45.6 | - |
| I-5 Northbound | | - | | 43.5 | - |
| I-5 Off-Ramp | | - | | 35.1 | - |
| I-5 On-Ramp | | - | | 36.7 | - |
| I-5 Southbound | | - | | 42.7 | - |
| Trolley | | - | | 42.4 | - |
| 20 | 3.Fl | 51.6 | 0.0 | | |

| | | | | | |
|---|---|---|---|---|---|
| Hollister Street | | - | | 47.2 | - |
| I-5 Northbound | | - | | 45.3 | - |
| I-5 Off-Ramp | | - | | 37.0 | - |
| I-5 On-Ramp | | - | | 38.3 | - |
| I-5 Southbound | | - | | 44.7 | - |
| Trolley | | - | | 42.1 | - |
| 20 | 4.Fl | 53.0 | 0.0 | | |
| Hollister Street | | - | | 47.8 | - |
| I-5 Northbound | | - | | 47.4 | - |
| I-5 Off-Ramp | | - | | 38.4 | - |
| I-5 On-Ramp | | - | | 39.2 | - |
| I-5 Southbound | | - | | 47.0 | - |
| Trolley | | - | | 42.6 | - |
| 21 | 1.Fl | 49.5 | 0.0 | | |
| Hollister Street | | - | | 34.9 | - |
| I-5 Northbound | | - | | 45.3 | - |
| I-5 Off-Ramp | | - | | 36.9 | - |
| I-5 On-Ramp | | - | | 39.5 | - |
| I-5 Southbound | | - | | 44.5 | - |
| Trolley | | - | | 40.0 | - |
| 21 | 2.Fl | 52.8 | 0.0 | | |
| Hollister Street | | - | | 36.5 | - |
| I-5 Northbound | | - | | 49.1 | - |
| I-5 Off-Ramp | | - | | 40.3 | - |
| I-5 On-Ramp | | - | | 42.6 | - |
| I-5 Southbound | | - | | 48.2 | - |
| Trolley | | - | | 39.4 | - |
| 21 | 3.Fl | 54.2 | 0.0 | | |
| Hollister Street | | - | | 37.5 | - |
| I-5 Northbound | | - | | 50.5 | - |
| I-5 Off-Ramp | | - | | 41.9 | - |
| I-5 On-Ramp | | - | | 43.8 | - |
| I-5 Southbound | | - | | 49.8 | - |
| Trolley | | - | | 38.7 | - |
| 21 | 4.Fl | 55.5 | 0.0 | | |
| Hollister Street | | - | | 40.3 | - |
| I-5 Northbound | | - | | 51.9 | - |
| I-5 Off-Ramp | | - | | 43.0 | - |
| I-5 On-Ramp | | - | | 44.8 | - |
| I-5 Southbound | | - | | 51.3 | - |
| Trolley | | - | | 39.5 | - |
| 22 | 1.Fl | 58.7 | 0.0 | | |
| Hollister Street | | - | | 58.2 | - |
| I-5 Northbound | | - | | 38.0 | - |
| I-5 Off-Ramp | | - | | 30.0 | - |
| I-5 On-Ramp | | - | | 32.1 | - |
| I-5 Southbound | | - | | 37.2 | - |
| Trolley | | - | | 47.6 | - |
| 22 | 2.Fl | 60.4 | 0.0 | | |
| Hollister Street | | - | | 59.9 | - |
| I-5 Northbound | | - | | 41.8 | - |
| I-5 Off-Ramp | | - | | 33.6 | - |
| I-5 On-Ramp | | - | | 35.2 | - |
| I-5 Southbound | | - | | 41.2 | - |
| Trolley | | - | | 48.1 | - |

| | | | | | |
|---|---|---|---|---|---|
| 22 | 3.Fl | 60.4 | 0.0 | | |
| Hollister Street | | - | | 59.9 | - |
| I-5 Northbound | | - | | 44.0 | - |
| I-5 Off-Ramp | | - | | 35.7 | - |
| I-5 On-Ramp | | - | | 37.2 | - |
| I-5 Southbound | | - | | 43.5 | - |
| Trolley | | - | | 48.5 | - |
| 22 | 4.Fl | 60.7 | 0.0 | | |
| Hollister Street | | - | | 60.0 | - |
| I-5 Northbound | | - | | 45.9 | - |
| I-5 Off-Ramp | | - | | 37.3 | - |
| I-5 On-Ramp | | - | | 38.6 | - |
| I-5 Southbound | | - | | 45.6 | - |
| Trolley | | - | | 49.2 | - |
| 23 | 1.Fl | 64.0 | 0.0 | | |
| Hollister Street | | - | | 63.8 | - |
| I-5 Northbound | | - | | 28.0 | - |
| I-5 Off-Ramp | | - | | 19.6 | - |
| I-5 On-Ramp | | - | | 20.7 | - |
| I-5 Southbound | | - | | 28.2 | - |
| Trolley | | - | | 50.6 | - |
| 23 | 2.Fl | 65.2 | 0.0 | | |
| Hollister Street | | - | | 65.0 | - |
| I-5 Northbound | | - | | 29.4 | - |
| I-5 Off-Ramp | | - | | 20.5 | - |
| I-5 On-Ramp | | - | | 21.9 | - |
| I-5 Southbound | | - | | 29.6 | - |
| Trolley | | - | | 51.1 | - |
| 23 | 3.Fl | 65.0 | 0.0 | | |
| Hollister Street | | - | | 64.8 | - |
| I-5 Northbound | | - | | 32.1 | - |
| I-5 Off-Ramp | | - | | 22.9 | - |
| I-5 On-Ramp | | - | | 24.4 | - |
| I-5 Southbound | | - | | 32.2 | - |
| Trolley | | - | | 51.6 | - |
| 23 | 4.Fl | 64.6 | 0.0 | | |
| Hollister Street | | - | | 64.3 | - |
| I-5 Northbound | | - | | 38.9 | - |
| I-5 Off-Ramp | | - | | 29.5 | - |
| I-5 On-Ramp | | - | | 31.0 | - |
| I-5 Southbound | | - | | 38.8 | - |
| Trolley | | - | | 52.1 | - |
| 24 | 1.Fl | 58.6 | 0.0 | | |
| Hollister Street | | - | | 58.2 | - |
| I-5 Northbound | | - | | 31.3 | - |
| I-5 Off-Ramp | | - | | 23.2 | - |
| I-5 On-Ramp | | - | | 23.9 | - |
| I-5 Southbound | | - | | 31.3 | - |
| Trolley | | - | | 47.7 | - |
| 24 | 2.Fl | 60.0 | 0.0 | | |
| Hollister Street | | - | | 59.7 | - |
| I-5 Northbound | | - | | 33.6 | - |
| I-5 Off-Ramp | | - | | 25.0 | - |
| I-5 On-Ramp | | - | | 25.6 | - |
| I-5 Southbound | | - | | 33.5 | - |

| | | | | | |
|---|---|---|---|---|---|
| Trolley | | - | | 48.2 | - |
| 24 | 3.Fl | 60.2 | 0.0 | | |
| Hollister Street | | - | | 59.8 | - |
| I-5 Northbound | | - | | 36.9 | - |
| I-5 Off-Ramp | | - | | 27.7 | - |
| I-5 On-Ramp | | - | | 28.3 | - |
| I-5 Southbound | | - | | 36.7 | - |
| Trolley | | - | | 48.6 | - |
| 24 | 4.Fl | 60.4 | 0.0 | | |
| Hollister Street | | - | | 59.9 | - |
| I-5 Northbound | | - | | 43.8 | - |
| I-5 Off-Ramp | | - | | 33.0 | - |
| I-5 On-Ramp | | - | | 34.1 | - |
| I-5 Southbound | | - | | 43.6 | - |
| Trolley | | - | | 49.3 | - |
| 25 | 1.Fl | 47.1 | 0.0 | | |
| Hollister Street | | - | | 44.3 | - |
| I-5 Northbound | | - | | 31.4 | - |
| I-5 Off-Ramp | | - | | 21.9 | - |
| I-5 On-Ramp | | - | | 24.2 | - |
| I-5 Southbound | | - | | 31.4 | - |
| Trolley | | - | | 43.3 | - |
| 25 | 2.Fl | 48.5 | 0.0 | | |
| Hollister Street | | - | | 46.6 | - |
| I-5 Northbound | | - | | 33.6 | - |
| I-5 Off-Ramp | | - | | 23.8 | - |
| I-5 On-Ramp | | - | | 25.8 | - |
| I-5 Southbound | | - | | 33.5 | - |
| Trolley | | - | | 42.9 | - |
| 25 | 3.Fl | 49.2 | 0.0 | | |
| Hollister Street | | - | | 47.5 | - |
| I-5 Northbound | | - | | 36.8 | - |
| I-5 Off-Ramp | | - | | 26.5 | - |
| I-5 On-Ramp | | - | | 28.5 | - |
| I-5 Southbound | | - | | 36.6 | - |
| Trolley | | - | | 42.5 | - |
| 25 | 4.Fl | 51.4 | 0.0 | | |
| Hollister Street | | - | | 48.1 | - |
| I-5 Northbound | | - | | 43.5 | - |
| I-5 Off-Ramp | | - | | 33.4 | - |
| I-5 On-Ramp | | - | | 34.6 | - |
| I-5 Southbound | | - | | 43.4 | - |
| Trolley | | - | | 43.9 | - |
| 26 | 1.Fl | 51.9 | 0.0 | | |
| Hollister Street | | - | | 50.3 | - |
| I-5 Northbound | | - | | 39.6 | - |
| I-5 Off-Ramp | | - | | 31.6 | - |
| I-5 On-Ramp | | - | | 33.7 | - |
| I-5 Southbound | | - | | 38.8 | - |
| Trolley | | - | | 44.4 | - |
| 26 | 2.Fl | 54.1 | 0.0 | | |
| Hollister Street | | - | | 52.5 | - |
| I-5 Northbound | | - | | 43.5 | - |
| I-5 Off-Ramp | | - | | 35.2 | - |
| I-5 On-Ramp | | - | | 36.9 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Southbound | | - | | 42.8 | - |
| Trolley | | - | | 44.6 | - |
| 26 | 3.Fl | 55.1 | 0.0 | | |
| Hollister Street | | - | | 53.3 | - |
| I-5 Northbound | | - | | 45.5 | - |
| I-5 Off-Ramp | | - | | 37.3 | - |
| I-5 On-Ramp | | - | | 38.8 | - |
| I-5 Southbound | | - | | 45.0 | - |
| Trolley | | - | | 44.8 | - |
| 26 | 4.Fl | 56.0 | 0.0 | | |
| Hollister Street | | - | | 53.8 | - |
| I-5 Northbound | | - | | 47.3 | - |
| I-5 Off-Ramp | | - | | 38.9 | - |
| I-5 On-Ramp | | - | | 40.2 | - |
| I-5 Southbound | | - | | 47.0 | - |
| Trolley | | - | | 45.1 | - |
| 27 | 1.Fl | 62.0 | 0.0 | | |
| Hollister Street | | - | | 61.7 | - |
| I-5 Northbound | | - | | 29.6 | - |
| I-5 Off-Ramp | | - | | 19.6 | - |
| I-5 On-Ramp | | - | | 21.3 | - |
| I-5 Southbound | | - | | 29.3 | - |
| Trolley | | - | | 49.6 | - |
| 27 | 2.Fl | 62.8 | 0.0 | | |
| Hollister Street | | - | | 62.6 | - |
| I-5 Northbound | | - | | 31.8 | - |
| I-5 Off-Ramp | | - | | 21.1 | - |
| I-5 On-Ramp | | - | | 23.4 | - |
| I-5 Southbound | | - | | 31.5 | - |
| Trolley | | - | | 50.1 | - |
| 27 | 3.Fl | 63.0 | 0.0 | | |
| Hollister Street | | - | | 62.7 | - |
| I-5 Northbound | | - | | 35.2 | - |
| I-5 Off-Ramp | | - | | 24.2 | - |
| I-5 On-Ramp | | - | | 26.4 | - |
| I-5 Southbound | | - | | 34.9 | - |
| Trolley | | - | | 50.6 | - |
| 27 | 4.Fl | 63.0 | 0.0 | | |
| Hollister Street | | - | | 62.6 | - |
| I-5 Northbound | | - | | 42.6 | - |
| I-5 Off-Ramp | | - | | 30.9 | - |
| I-5 On-Ramp | | - | | 32.5 | - |
| I-5 Southbound | | - | | 42.2 | - |
| Trolley | | - | | 51.2 | - |
| 28 | 1.Fl | 61.0 | 0.0 | | |
| Hollister Street | | - | | 53.6 | - |
| I-5 Northbound | | - | | 57.3 | - |
| I-5 Off-Ramp | | - | | 43.0 | - |
| I-5 On-Ramp | | - | | 44.1 | - |
| I-5 Southbound | | - | | 56.4 | - |
| Trolley | | - | | 45.2 | - |
| 28 | 2.Fl | 63.0 | 0.0 | | |
| Hollister Street | | - | | 55.1 | - |
| I-5 Northbound | | - | | 59.2 | - |
| I-5 Off-Ramp | | - | | 46.3 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 On-Ramp | | - | | 47.7 | - |
| I-5 Southbound | | - | | 58.5 | - |
| Trolley | | - | | 45.8 | - |
| 28 | 3.Fl | 63.5 | 0.0 | | |
| Hollister Street | | - | | 56.0 | - |
| I-5 Northbound | | - | | 59.5 | - |
| I-5 Off-Ramp | | - | | 47.0 | - |
| I-5 On-Ramp | | - | | 48.3 | - |
| I-5 Southbound | | - | | 59.0 | - |
| Trolley | | - | | 46.3 | - |
| 28 | 4.Fl | 63.6 | 0.0 | | |
| Hollister Street | | - | | 56.4 | - |
| I-5 Northbound | | - | | 59.4 | - |
| I-5 Off-Ramp | | - | | 47.0 | - |
| I-5 On-Ramp | | - | | 48.2 | - |
| I-5 Southbound | | - | | 59.0 | - |
| Trolley | | - | | 46.9 | - |
| 29 | 1.Fl | 62.0 | 0.0 | | |
| Hollister Street | | - | | 48.0 | - |
| I-5 Northbound | | - | | 59.1 | - |
| I-5 Off-Ramp | | - | | 45.0 | - |
| I-5 On-Ramp | | - | | 46.8 | - |
| I-5 Southbound | | - | | 57.9 | - |
| Trolley | | - | | 42.0 | - |
| 29 | 2.Fl | 64.3 | 0.0 | | |
| Hollister Street | | - | | 49.7 | - |
| I-5 Northbound | | - | | 61.3 | - |
| I-5 Off-Ramp | | - | | 48.7 | - |
| I-5 On-Ramp | | - | | 50.4 | - |
| I-5 Southbound | | - | | 60.3 | - |
| Trolley | | - | | 42.5 | - |
| 29 | 3.Fl | 64.7 | 0.0 | | |
| Hollister Street | | - | | 50.5 | - |
| I-5 Northbound | | - | | 61.5 | - |
| I-5 Off-Ramp | | - | | 49.3 | - |
| I-5 On-Ramp | | - | | 50.8 | - |
| I-5 Southbound | | - | | 60.8 | - |
| Trolley | | - | | 42.9 | - |
| 29 | 4.Fl | 64.7 | 0.0 | | |
| Hollister Street | | - | | 51.0 | - |
| I-5 Northbound | | - | | 61.5 | - |
| I-5 Off-Ramp | | - | | 49.3 | - |
| I-5 On-Ramp | | - | | 50.7 | - |
| I-5 Southbound | | - | | 60.8 | - |
| Trolley | | - | | 43.6 | - |
| 30 | 1.Fl | 64.2 | 0.0 | | |
| Hollister Street | | - | | 44.9 | - |
| I-5 Northbound | | - | | 61.5 | - |
| I-5 Off-Ramp | | - | | 47.9 | - |
| I-5 On-Ramp | | - | | 50.1 | - |
| I-5 Southbound | | - | | 60.2 | - |
| Trolley | | - | | 40.1 | - |
| 30 | 2.Fl | 66.0 | 0.0 | | |
| Hollister Street | | - | | 46.9 | - |
| I-5 Northbound | | - | | 63.0 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Off-Ramp | | - | | 51.3 | - |
| I-5 On-Ramp | | - | | 52.6 | - |
| I-5 Southbound | | - | | 62.2 | - |
| Trolley | | - | | 40.5 | - |
| 30 | 3.Fl | 66.3 | 0.0 | | |
| Hollister Street | | - | | 47.7 | - |
| I-5 Northbound | | - | | 63.2 | - |
| I-5 Off-Ramp | | - | | 51.7 | - |
| I-5 On-Ramp | | - | | 52.7 | - |
| I-5 Southbound | | - | | 62.5 | - |
| Trolley | | - | | 40.9 | - |
| 30 | 4.Fl | 66.3 | 0.0 | | |
| Hollister Street | | - | | 48.1 | - |
| I-5 Northbound | | - | | 63.1 | - |
| I-5 Off-Ramp | | - | | 51.7 | - |
| I-5 On-Ramp | | - | | 52.7 | - |
| I-5 Southbound | | - | | 62.5 | - |
| Trolley | | - | | 41.5 | - |
| 31 | 1.Fl | 65.0 | 0.0 | | |
| Hollister Street | | - | | 34.3 | - |
| I-5 Northbound | | - | | 62.2 | - |
| I-5 Off-Ramp | | - | | 48.3 | - |
| I-5 On-Ramp | | - | | 51.8 | - |
| I-5 Southbound | | - | | 61.0 | - |
| Trolley | | - | | 38.7 | - |
| 31 | 2.Fl | 66.6 | 0.0 | | |
| Hollister Street | | - | | 36.1 | - |
| I-5 Northbound | | - | | 63.6 | - |
| I-5 Off-Ramp | | - | | 51.8 | - |
| I-5 On-Ramp | | - | | 53.9 | - |
| I-5 Southbound | | - | | 62.9 | - |
| Trolley | | - | | 38.1 | - |
| 31 | 3.Fl | 66.7 | 0.0 | | |
| Hollister Street | | - | | 37.3 | - |
| I-5 Northbound | | - | | 63.6 | - |
| I-5 Off-Ramp | | - | | 52.2 | - |
| I-5 On-Ramp | | - | | 54.0 | - |
| I-5 Southbound | | - | | 63.0 | - |
| Trolley | | - | | 37.5 | - |
| 31 | 4.Fl | 66.7 | 0.0 | | |
| Hollister Street | | - | | 38.5 | - |
| I-5 Northbound | | - | | 63.5 | - |
| I-5 Off-Ramp | | - | | 52.2 | - |
| I-5 On-Ramp | | - | | 54.1 | - |
| I-5 Southbound | | - | | 63.0 | - |
| Trolley | | - | | 38.9 | - |
| 32 | 1.Fl | 66.9 | 0.0 | | |
| Hollister Street | | - | | 42.0 | - |
| I-5 Northbound | | - | | 64.3 | - |
| I-5 Off-Ramp | | - | | 51.9 | - |
| I-5 On-Ramp | | - | | 55.9 | - |
| I-5 Southbound | | - | | 62.3 | - |
| Trolley | | - | | 38.4 | - |
| 32 | 2.Fl | 68.9 | 0.0 | | |
| Hollister Street | | - | | 44.2 | - |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Northbound | | - | | 65.8 | - |
| I-5 Off-Ramp | | - | | 55.3 | - |
| I-5 On-Ramp | | - | | 57.6 | - |
| I-5 Southbound | | - | | 64.7 | - |
| Trolley | | - | | 38.9 | - |
| 32 | 3.Fl | 69.1 | 0.0 | | |
| Hollister Street | | - | | 45.2 | - |
| I-5 Northbound | | - | | 66.0 | - |
| I-5 Off-Ramp | | - | | 55.6 | - |
| I-5 On-Ramp | | - | | 57.8 | - |
| I-5 Southbound | | - | | 64.9 | - |
| Trolley | | - | | 39.3 | - |
| 32 | 4.Fl | 69.2 | 0.0 | | |
| Hollister Street | | - | | 45.8 | - |
| I-5 Northbound | | - | | 66.0 | - |
| I-5 Off-Ramp | | - | | 55.7 | - |
| I-5 On-Ramp | | - | | 58.0 | - |
| I-5 Southbound | | - | | 65.0 | - |
| Trolley | | - | | 40.1 | - |
| 33 | 1.Fl | 52.5 | 0.0 | | |
| Hollister Street | | - | | 21.9 | - |
| I-5 Northbound | | - | | 50.3 | - |
| I-5 Off-Ramp | | - | | 31.5 | - |
| I-5 On-Ramp | | - | | 38.0 | - |
| I-5 Southbound | | - | | 47.1 | - |
| Trolley | | - | | 39.6 | - |
| 33 | 2.Fl | 55.1 | 0.0 | | |
| Hollister Street | | - | | 24.2 | - |
| I-5 Northbound | | - | | 52.9 | - |
| I-5 Off-Ramp | | - | | 33.8 | - |
| I-5 On-Ramp | | - | | 42.7 | - |
| I-5 Southbound | | - | | 49.9 | - |
| Trolley | | - | | 38.9 | - |
| 33 | 3.Fl | 56.3 | 0.0 | | |
| Hollister Street | | - | | 26.9 | - |
| I-5 Northbound | | - | | 54.0 | - |
| I-5 Off-Ramp | | - | | 35.9 | - |
| I-5 On-Ramp | | - | | 44.5 | - |
| I-5 Southbound | | - | | 51.5 | - |
| Trolley | | - | | 37.8 | - |
| 33 | 4.Fl | 57.8 | 0.0 | | |
| Hollister Street | | - | | 32.6 | - |
| I-5 Northbound | | - | | 55.1 | - |
| I-5 Off-Ramp | | - | | 40.7 | - |
| I-5 On-Ramp | | - | | 46.1 | - |
| I-5 Southbound | | - | | 53.4 | - |
| Trolley | | - | | 39.0 | - |
| 34 | 1.Fl | 42.8 | 0.0 | | |
| Hollister Street | | - | | 22.6 | - |
| I-5 Northbound | | - | | 35.6 | - |
| I-5 Off-Ramp | | - | | 26.8 | - |
| I-5 On-Ramp | | - | | 28.6 | - |
| I-5 Southbound | | - | | 35.0 | - |
| Trolley | | - | | 40.4 | - |
| 34 | 2.Fl | 43.5 | 0.0 | | |

| | | | | | |
|---|---|---|---|---|---|
| Hollister Street | | - | | 24.6 | - |
| I-5 Northbound | | - | | 37.7 | - |
| I-5 Off-Ramp | | - | | 28.8 | - |
| I-5 On-Ramp | | - | | 30.7 | - |
| I-5 Southbound | | - | | 37.3 | - |
| Trolley | | - | | 39.5 | - |
| 34 | 3.Fl | 45.4 | 0.0 | | |
| Hollister Street | | - | | 27.3 | - |
| I-5 Northbound | | - | | 40.8 | - |
| I-5 Off-Ramp | | - | | 31.5 | - |
| I-5 On-Ramp | | - | | 33.4 | - |
| I-5 Southbound | | - | | 40.4 | - |
| Trolley | | - | | 38.5 | - |
| 34 | 4.Fl | 51.4 | 0.0 | | |
| Hollister Street | | - | | 33.2 | - |
| I-5 Northbound | | - | | 47.6 | - |
| I-5 Off-Ramp | | - | | 38.3 | - |
| I-5 On-Ramp | | - | | 39.4 | - |
| I-5 Southbound | | - | | 47.3 | - |
| Trolley | | - | | 39.1 | - |
| 35 | 1.Fl | 43.0 | 0.0 | | |
| Hollister Street | | - | | 27.4 | - |
| I-5 Northbound | | - | | 34.5 | - |
| I-5 Off-Ramp | | - | | 25.6 | - |
| I-5 On-Ramp | | - | | 27.7 | - |
| I-5 Southbound | | - | | 34.3 | - |
| Trolley | | - | | 41.2 | - |
| 35 | 2.Fl | 43.1 | 0.0 | | |
| Hollister Street | | - | | 28.0 | - |
| I-5 Northbound | | - | | 35.8 | - |
| I-5 Off-Ramp | | - | | 26.6 | - |
| I-5 On-Ramp | | - | | 28.5 | - |
| I-5 Southbound | | - | | 35.5 | - |
| Trolley | | - | | 40.6 | - |
| 35 | 3.Fl | 44.1 | 0.0 | | |
| Hollister Street | | - | | 29.9 | - |
| I-5 Northbound | | - | | 38.4 | - |
| I-5 Off-Ramp | | - | | 28.8 | - |
| I-5 On-Ramp | | - | | 30.9 | - |
| I-5 Southbound | | - | | 38.1 | - |
| Trolley | | - | | 39.7 | - |
| 35 | 4.Fl | 47.8 | 0.0 | | |
| Hollister Street | | - | | 32.9 | - |
| I-5 Northbound | | - | | 43.6 | - |
| I-5 Off-Ramp | | - | | 33.8 | - |
| I-5 On-Ramp | | - | | 35.5 | - |
| I-5 Southbound | | - | | 43.4 | - |
| Trolley | | - | | 39.1 | - |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| No. | Coordinates X | Y | Floor | Height | Limit Day | Level w/o NP Day | Level w NP Day | Difference Day | Conflict Day |
|---|---|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) | dB | dB |
| 1 | 491842.27 | 3605606.33 | 1.Fl | 7.77 | - | 68.2 | 0 | -68.2 | - |
| 2 | 491863.21 | 3605607.96 | 1.Fl | 7.88 | - | 62.9 | 0 | -62.9 | - |
| 3 | 491857.57 | 3605619.15 | 1.Fl | 7.85 | - | 65.4 | 0 | -65.4 | - |
| 4 | 491840.64 | 3605621.18 | 1.Fl | 7.77 | - | 69.0 | 0 | -69.0 | - |
| 5 | 491836.67 | 3605660.90 | 1.Fl | 7.76 | - | 66.6 | 0 | -66.6 | - |
| 6 | 491835.98 | 3605711.30 | 1.Fl | 7.90 | - | 63.3 | 0 | -63.3 | - |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| Source name | | | Traffic lane | Level w/o NP Day dB(A) | Level w NP Day dB(A) |
|---|---|---|---|---|---|
| 1 | 1.Fl | 68.2 | 0.0 | | |
| Hollister Street | | - | | 27.9 | - |
| I-5 Northbound | | - | | 65.3 | - |
| I-5 Off-Ramp | | - | | 54.4 | - |
| I-5 On-Ramp | | - | | 60.0 | - |
| I-5 Southbound | | - | | 62.8 | - |
| Trolley | | - | | 36.6 | - |
| 2 | 1.Fl | 62.9 | 0.0 | | |
| Hollister Street | | - | | 31.5 | - |
| I-5 Northbound | | - | | 60.0 | - |
| I-5 Off-Ramp | | - | | 49.4 | - |
| I-5 On-Ramp | | - | | 54.4 | - |
| I-5 Southbound | | - | | 57.6 | - |
| Trolley | | - | | 37.1 | - |
| 3 | 1.Fl | 65.4 | 0.0 | | |
| Hollister Street | | - | | 27.4 | - |
| I-5 Northbound | | - | | 62.4 | - |
| I-5 Off-Ramp | | - | | 52.4 | - |
| I-5 On-Ramp | | - | | 57.0 | - |
| I-5 Southbound | | - | | 60.3 | - |
| Trolley | | - | | 36.7 | - |
| 4 | 1.Fl | 69.0 | 0.0 | | |
| Hollister Street | | - | | 20.2 | - |
| I-5 Northbound | | - | | 66.1 | - |
| I-5 Off-Ramp | | - | | 54.9 | - |
| I-5 On-Ramp | | - | | 61.2 | - |
| I-5 Southbound | | - | | 63.3 | - |
| Trolley | | - | | 36.3 | - |
| 5 | 1.Fl | 66.6 | 0.0 | | |
| Hollister Street | | - | | 23.2 | - |
| I-5 Northbound | | - | | 63.8 | - |
| I-5 Off-Ramp | | - | | 52.5 | - |
| I-5 On-Ramp | | - | | 58.3 | - |
| I-5 Southbound | | - | | 61.0 | - |
| Trolley | | - | | 36.8 | - |
| 6 | 1.Fl | 63.3 | 0.0 | | |
| Hollister Street | | - | | 39.6 | - |
| I-5 Northbound | | - | | 61.1 | - |
| I-5 Off-Ramp | | - | | 45.6 | - |
| I-5 On-Ramp | | - | | 52.3 | - |
| I-5 Southbound | | - | | 58.2 | - |
| Trolley | | - | | 37.8 | - |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| No. | Coordinates X | Y | Floor | Height | Limit Day | Level w/o NP Day | Level w NP Day | Difference Day | Conflict Day |
|---|---|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) | dB | dB |
| 1 | 491884.24 | 3605591.78 | 1.Fl | 10.32 | - | 64.0 | 64.0 | 0 | - |
| 2 | 491870.67 | 3605591.82 | 1.Fl | 10.27 | - | 62.3 | 62.3 | 0 | - |
| 3 | 491860.74 | 3605591.73 | 1.Fl | 10.24 | - | 66.0 | 66.0 | 0 | - |
| 4 | 491847.33 | 3605591.69 | 1.Fl | 10.19 | - | 66.0 | 66.0 | 0 | - |
| 5 | 491842.27 | 3605606.33 | 1.Fl | 10.57 | - | 71.3 | 66.4 | -4.9 | - |
| 6 | 491863.21 | 3605607.96 | 1.Fl | 10.68 | - | 66.1 | 65.6 | -0.5 | - |
| 7 | 491857.57 | 3605619.15 | 1.Fl | 10.65 | - | 68.6 | 68.3 | -0.2 | - |
| 8 | 491840.64 | 3605621.18 | 1.Fl | 10.57 | - | 71.8 | 66.9 | -5.0 | - |
| 9 | 491842.18 | 3605635.53 | 1.Fl | 10.58 | - | 64.3 | 64.3 | 0 | - |
| 10 | 491855.54 | 3605635.61 | 1.Fl | 10.66 | - | 56.5 | 56.5 | 0 | - |
| 11 | 491854.39 | 3605646.22 | 1.Fl | 10.66 | - | 57.1 | 57.1 | 0 | - |
| 12 | 491841.34 | 3605646.02 | 1.Fl | 10.58 | - | 65.3 | 65.3 | 0 | - |
| 13 | 491836.67 | 3605660.90 | 1.Fl | 10.56 | - | 69.1 | 69.1 | 0 | - |
| 14 | 491826.40 | 3605667.74 | 1.Fl | 10.52 | - | 72.9 | 67.3 | -5.7 | - |
| 15 | 491824.52 | 3605680.81 | 1.Fl | 10.52 | - | 73.1 | 67.5 | -5.6 | - |
| 16 | 491823.09 | 3605691.09 | 1.Fl | 10.52 | - | 73.1 | 67.5 | -5.6 | - |
| 17 | 491821.11 | 3605704.74 | 1.Fl | 10.52 | - | 72.9 | 67.4 | -5.5 | - |
| 18 | 491835.98 | 3605711.30 | 1.Fl | 10.68 | - | 65.9 | 65.9 | 0 | - |
| 19 | 491852.08 | 3605713.10 | 1.Fl | 10.68 | - | 65.8 | 65.8 | 0 | - |
| 20 | 491869.05 | 3605713.12 | 1.Fl | 10.91 | - | 67.3 | 67.3 | 0 | - |
| 21 | 491879.40 | 3605713.03 | 1.Fl | 10.95 | - | 66.0 | 66.0 | 0 | - |
| 22 | 491895.91 | 3605713.09 | 1.Fl | 11.03 | - | 66.0 | 66.0 | 0 | - |
| 23 | 491925.28 | 3605718.84 | 1.Fl | 11.12 | - | 61.0 | 61.0 | 0 | - |
| 24 | 491939.25 | 3605718.61 | 1.Fl | 11.12 | - | 65.1 | 65.1 | 0 | - |
| 25 | 491949.09 | 3605718.61 | 1.Fl | 11.12 | - | 61.9 | 61.9 | 0 | - |
| 26 | 491962.58 | 3605718.76 | 1.Fl | 11.16 | - | 62.7 | 62.7 | 0 | - |
| 27 | 492090.14 | 3605689.32 | 1.Fl | 11.74 | - | 63.5 | 63.5 | 0 | - |
| 28 | 492090.06 | 3605668.91 | 1.Fl | 11.28 | - | 62.3 | 62.3 | 0 | - |
| 29 | 492090.38 | 3605664.55 | 1.Fl | 11.19 | - | 62.4 | 62.4 | 0 | - |
| 30 | 492090.47 | 3605641.40 | 1.Fl | 11.41 | - | 64.1 | 64.1 | 0 | - |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| Source name | | Traffic lane | | Level w/o NP Day dB(A) | Level w NP Day dB(A) |
|---|---|---|---|---|---|
| 1 | 1.Fl | 64.0 | 64.0 | | |
| Hollister Street | | - | | 37.9 | 37.9 |
| I-5 Northbound | | - | | 60.7 | 60.7 |
| I-5 Off-Ramp | | - | | 50.1 | 50.1 |
| I-5 On-Ramp | | - | | 57.2 | 57.2 |
| I-5 Southbound | | - | | 58.6 | 58.6 |
| Trolley | | - | | 38.0 | 38.0 |
| 2 | 1.Fl | 62.3 | 62.3 | | |
| Hollister Street | | - | | 39.2 | 39.2 |
| I-5 Northbound | | - | | 58.7 | 58.7 |
| I-5 Off-Ramp | | - | | 48.0 | 48.0 |
| I-5 On-Ramp | | - | | 56.1 | 56.1 |
| I-5 Southbound | | - | | 56.5 | 56.5 |
| Trolley | | - | | 37.9 | 37.9 |
| 3 | 1.Fl | 66.0 | 66.0 | | |
| Hollister Street | | - | | 36.7 | 36.7 |
| I-5 Northbound | | - | | 62.8 | 62.8 |
| I-5 Off-Ramp | | - | | 52.1 | 52.1 |
| I-5 On-Ramp | | - | | 58.9 | 58.9 |
| I-5 Southbound | | - | | 60.4 | 60.4 |
| Trolley | | - | | 37.6 | 37.6 |
| 4 | 1.Fl | 66.0 | 66.0 | | |
| Hollister Street | | - | | 37.3 | 37.3 |
| I-5 Northbound | | - | | 62.9 | 62.9 |
| I-5 Off-Ramp | | - | | 51.6 | 51.6 |
| I-5 On-Ramp | | - | | 59.4 | 59.4 |
| I-5 Southbound | | - | | 60.2 | 60.2 |
| Trolley | | - | | 37.6 | 37.6 |
| 5 | 1.Fl | 71.3 | 66.4 | | |
| Hollister Street | | - | | 30.5 | 27.2 |
| I-5 Northbound | | - | | 68.4 | 63.4 |
| I-5 Off-Ramp | | - | | 58.1 | 53.2 |
| I-5 On-Ramp | | - | | 62.5 | 57.7 |
| I-5 Southbound | | - | | 66.4 | 61.4 |
| Trolley | | - | | 36.9 | 36.9 |
| 6 | 1.Fl | 66.1 | 65.6 | | |
| Hollister Street | | - | | 33.7 | 33.7 |
| I-5 Northbound | | - | | 63.0 | 62.5 |
| I-5 Off-Ramp | | - | | 53.6 | 53.2 |
| I-5 On-Ramp | | - | | 57.0 | 56.5 |
| I-5 Southbound | | - | | 61.3 | 60.8 |
| Trolley | | - | | 37.1 | 37.1 |
| 7 | 1.Fl | 68.6 | 68.3 | | |
| Hollister Street | | - | | 29.7 | 29.7 |
| I-5 Northbound | | - | | 65.4 | 65.2 |
| I-5 Off-Ramp | | - | | 56.1 | 55.8 |
| I-5 On-Ramp | | - | | 59.5 | 59.3 |
| I-5 Southbound | | - | | 63.9 | 63.6 |
| Trolley | | - | | 36.7 | 36.7 |
| 8 | 1.Fl | 71.8 | 66.9 | | |
| Hollister Street | | - | | 21.7 | 25.7 |
| I-5 Northbound | | - | | 68.8 | 63.8 |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Off-Ramp | | - | | 58.6 | 53.7 |
| I-5 On-Ramp | | - | | 63.6 | 58.5 |
| I-5 Southbound | | - | | 66.6 | 61.8 |
| Trolley | | - | | 36.3 | 36.3 |
| 9 | 1.Fl | 64.3 | 64.3 | | |
| Hollister Street | | - | | 21.4 | 21.4 |
| I-5 Northbound | | - | | 61.0 | 61.0 |
| I-5 Off-Ramp | | - | | 52.2 | 52.2 |
| I-5 On-Ramp | | - | | 55.2 | 55.2 |
| I-5 Southbound | | - | | 59.8 | 59.8 |
| Trolley | | - | | 37.2 | 37.2 |
| 10 | 1.Fl | 56.5 | 56.5 | | |
| Hollister Street | | - | | 20.9 | 20.9 |
| I-5 Northbound | | - | | 53.3 | 53.3 |
| I-5 Off-Ramp | | - | | 44.6 | 44.6 |
| I-5 On-Ramp | | - | | 47.2 | 47.2 |
| I-5 Southbound | | - | | 51.6 | 51.6 |
| Trolley | | - | | 37.3 | 37.3 |
| 11 | 1.Fl | 57.1 | 57.1 | | |
| Hollister Street | | - | | 21.2 | 21.2 |
| I-5 Northbound | | - | | 53.9 | 53.9 |
| I-5 Off-Ramp | | - | | 44.6 | 44.6 |
| I-5 On-Ramp | | - | | 48.0 | 48.0 |
| I-5 Southbound | | - | | 52.3 | 52.3 |
| Trolley | | - | | 37.4 | 37.4 |
| 12 | 1.Fl | 65.3 | 65.3 | | |
| Hollister Street | | - | | 20.9 | 20.9 |
| I-5 Northbound | | - | | 62.3 | 62.3 |
| I-5 Off-Ramp | | - | | 52.1 | 52.1 |
| I-5 On-Ramp | | - | | 56.4 | 56.4 |
| I-5 Southbound | | - | | 60.4 | 60.4 |
| Trolley | | - | | 37.2 | 37.2 |
| 13 | 1.Fl | 69.1 | 69.1 | | |
| Hollister Street | | - | | 22.9 | 22.9 |
| I-5 Northbound | | - | | 66.1 | 66.1 |
| I-5 Off-Ramp | | - | | 56.3 | 56.3 |
| I-5 On-Ramp | | - | | 60.5 | 60.5 |
| I-5 Southbound | | - | | 63.9 | 63.9 |
| Trolley | | - | | 36.7 | 36.7 |
| 14 | 1.Fl | 72.9 | 67.3 | | |
| Hollister Street | | - | | 18.7 | 18.7 |
| I-5 Northbound | | - | | 70.1 | 64.4 |
| I-5 Off-Ramp | | - | | 59.7 | 54.2 |
| I-5 On-Ramp | | - | | 64.3 | 58.6 |
| I-5 Southbound | | - | | 67.6 | 62.1 |
| Trolley | | - | | 35.9 | 35.9 |
| 15 | 1.Fl | 73.1 | 67.5 | | |
| Hollister Street | | - | | 19.0 | 19.0 |
| I-5 Northbound | | - | | 70.3 | 64.7 |
| I-5 Off-Ramp | | - | | 59.6 | 54.1 |
| I-5 On-Ramp | | - | | 64.4 | 58.7 |
| I-5 Southbound | | - | | 67.9 | 62.4 |
| Trolley | | - | | 36.0 | 36.0 |
| 16 | 1.Fl | 73.1 | 67.5 | | |
| Hollister Street | | - | | 18.9 | 18.9 |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Northbound | | - | | 70.3 | 64.7 |
| I-5 Off-Ramp | | - | | 59.8 | 54.3 |
| I-5 On-Ramp | | - | | 64.5 | 58.9 |
| I-5 Southbound | | - | | 67.8 | 62.2 |
| Trolley | | - | | 35.8 | 35.8 |
| 17 | 1.Fl | 72.9 | 67.4 | | |
| Hollister Street | | - | | 19.6 | 19.6 |
| I-5 Northbound | | - | | 70.0 | 64.5 |
| I-5 Off-Ramp | | - | | 59.6 | 54.2 |
| I-5 On-Ramp | | - | | 64.1 | 58.6 |
| I-5 Southbound | | - | | 67.8 | 62.3 |
| Trolley | | - | | 36.0 | 36.0 |
| 18 | 1.Fl | 65.9 | 65.9 | | |
| Hollister Street | | - | | 42.3 | 42.3 |
| I-5 Northbound | | - | | 63.4 | 63.4 |
| I-5 Off-Ramp | | - | | 48.8 | 48.8 |
| I-5 On-Ramp | | - | | 54.6 | 54.6 |
| I-5 Southbound | | - | | 61.0 | 61.0 |
| Trolley | | - | | 38.5 | 38.5 |
| 19 | 1.Fl | 65.8 | 65.8 | | |
| Hollister Street | | - | | 41.5 | 41.5 |
| I-5 Northbound | | - | | 63.3 | 63.3 |
| I-5 Off-Ramp | | - | | 49.7 | 49.7 |
| I-5 On-Ramp | | - | | 54.1 | 54.1 |
| I-5 Southbound | | - | | 61.1 | 61.1 |
| Trolley | | - | | 38.3 | 38.3 |
| 20 | 1.Fl | 67.3 | 67.3 | | |
| Hollister Street | | - | | 38.8 | 38.8 |
| I-5 Northbound | | - | | 64.3 | 64.3 |
| I-5 Off-Ramp | | - | | 53.6 | 53.6 |
| I-5 On-Ramp | | - | | 55.7 | 55.7 |
| I-5 Southbound | | - | | 63.2 | 63.2 |
| Trolley | | - | | 38.1 | 38.1 |
| 21 | 1.Fl | 66.0 | 66.0 | | |
| Hollister Street | | - | | 40.8 | 40.8 |
| I-5 Northbound | | - | | 63.1 | 63.1 |
| I-5 Off-Ramp | | - | | 51.1 | 51.1 |
| I-5 On-Ramp | | - | | 53.8 | 53.8 |
| I-5 Southbound | | - | | 61.8 | 61.8 |
| Trolley | | - | | 38.5 | 38.5 |
| 22 | 1.Fl | 66.0 | 66.0 | | |
| Hollister Street | | - | | 40.5 | 40.5 |
| I-5 Northbound | | - | | 62.9 | 62.9 |
| I-5 Off-Ramp | | - | | 51.9 | 51.9 |
| I-5 On-Ramp | | - | | 54.1 | 54.1 |
| I-5 Southbound | | - | | 62.0 | 62.0 |
| Trolley | | - | | 39.0 | 39.0 |
| 23 | 1.Fl | 61.0 | 61.0 | | |
| Hollister Street | | - | | 44.9 | 44.9 |
| I-5 Northbound | | - | | 58.5 | 58.5 |
| I-5 Off-Ramp | | - | | 33.6 | 33.6 |
| I-5 On-Ramp | | - | | 34.4 | 34.4 |
| I-5 Southbound | | - | | 57.2 | 57.2 |
| Trolley | | - | | 39.9 | 39.9 |
| 24 | 1.Fl | 65.1 | 65.1 | | |

| | | | | | |
|---|---|---|---|---|---|
| Hollister Street | | - | | 38.9 | 38.9 |
| I-5 Northbound | | - | | 62.2 | 62.2 |
| I-5 Off-Ramp | | - | | 49.1 | 49.1 |
| I-5 On-Ramp | | - | | 51.3 | 51.3 |
| I-5 Southbound | | - | | 61.3 | 61.3 |
| Trolley | | - | | 38.8 | 38.8 |
| 25 | 1.Fl | 61.9 | 61.9 | | |
| Hollister Street | | - | | 44.9 | 44.9 |
| I-5 Northbound | | - | | 59.1 | 59.1 |
| I-5 Off-Ramp | | - | | 45.2 | 45.2 |
| I-5 On-Ramp | | - | | 47.4 | 47.4 |
| I-5 Southbound | | - | | 57.8 | 57.8 |
| Trolley | | - | | 40.3 | 40.3 |
| 26 | 1.Fl | 62.7 | 62.7 | | |
| Hollister Street | | - | | 43.9 | 43.9 |
| I-5 Northbound | | - | | 59.8 | 59.8 |
| I-5 Off-Ramp | | - | | 46.2 | 46.2 |
| I-5 On-Ramp | | - | | 47.9 | 47.9 |
| I-5 Southbound | | - | | 58.9 | 58.9 |
| Trolley | | - | | 40.3 | 40.3 |
| 27 | 1.Fl | 63.5 | 63.5 | | |
| Hollister Street | | - | | 63.3 | 63.3 |
| I-5 Northbound | | - | | 27.8 | 27.8 |
| I-5 Off-Ramp | | - | | 19.0 | 19.0 |
| I-5 On-Ramp | | - | | 21.1 | 21.1 |
| I-5 Southbound | | - | | 27.9 | 27.9 |
| Trolley | | - | | 50.6 | 50.6 |
| 28 | 1.Fl | 62.3 | 62.3 | | |
| Hollister Street | | - | | 62.0 | 62.0 |
| I-5 Northbound | | - | | 27.1 | 27.1 |
| I-5 Off-Ramp | | - | | 17.7 | 17.7 |
| I-5 On-Ramp | | - | | 19.4 | 19.4 |
| I-5 Southbound | | - | | 27.0 | 27.0 |
| Trolley | | - | | 49.8 | 49.8 |
| 29 | 1.Fl | 62.4 | 62.4 | | |
| Hollister Street | | - | | 62.1 | 62.1 |
| I-5 Northbound | | - | | 26.9 | 26.9 |
| I-5 Off-Ramp | | - | | 17.6 | 17.6 |
| I-5 On-Ramp | | - | | 20.5 | 20.5 |
| I-5 Southbound | | - | | 27.2 | 27.2 |
| Trolley | | - | | 49.7 | 49.7 |
| 30 | 1.Fl | 64.1 | 64.1 | | |
| Hollister Street | | - | | 63.9 | 63.9 |
| I-5 Northbound | | - | | 26.8 | 26.8 |
| I-5 Off-Ramp | | - | | 17.7 | 17.7 |
| I-5 On-Ramp | | - | | 19.8 | 19.8 |
| I-5 Southbound | | - | | 26.8 | 26.8 |
| Trolley | | - | | 50.9 | 50.9 |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| No. | Coordinates X | Y | Floor | Height | Limit Day | Level w/o NP Day | Level w NP Day | Difference Day | Conflict Day |
|---|---|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) | dB | dB |
| 1 | 491884.24 | 3605591.78 | 1.Fl | 13.10 | - | 65.2 | 65.2 | 0 | - |
| 2 | 491870.67 | 3605591.82 | 1.Fl | 13.07 | - | 63.4 | 63.4 | 0 | - |
| 3 | 491860.74 | 3605591.73 | 1.Fl | 13.04 | - | 67.1 | 67.1 | 0 | - |
| 4 | 491847.33 | 3605591.69 | 1.Fl | 12.99 | - | 67.2 | 67.2 | 0 | - |
| 5 | 491842.27 | 3605606.33 | 1.Fl | 13.37 | - | 72.3 | 65.2 | -7.2 | - |
| 6 | 491863.21 | 3605607.96 | 1.Fl | 13.48 | - | 67.1 | 66.6 | -0.5 | - |
| 7 | 491857.57 | 3605619.15 | 1.Fl | 13.45 | - | 69.6 | 69.3 | -0.2 | - |
| 8 | 491840.64 | 3605621.18 | 1.Fl | 13.37 | - | 72.8 | 65.6 | -7.2 | - |
| 9 | 491842.18 | 3605635.53 | 1.Fl | 13.38 | - | 65.2 | 65.2 | 0 | - |
| 10 | 491855.54 | 3605635.61 | 1.Fl | 13.46 | - | 57.4 | 57.4 | 0 | - |
| 11 | 491854.39 | 3605646.22 | 1.Fl | 13.46 | - | 58.1 | 58.1 | 0 | - |
| 12 | 491841.34 | 3605646.02 | 1.Fl | 13.38 | - | 66.3 | 66.3 | 0 | - |
| 13 | 491836.67 | 3605660.90 | 1.Fl | 13.36 | - | 70.0 | 70.0 | 0 | - |
| 14 | 491826.40 | 3605667.74 | 1.Fl | 13.32 | - | 73.8 | 65.7 | -8.1 | - |
| 15 | 491824.52 | 3605680.81 | 1.Fl | 13.32 | - | 73.9 | 65.9 | -8.0 | - |
| 16 | 491823.09 | 3605691.09 | 1.Fl | 13.32 | - | 74.0 | 65.9 | -8.1 | - |
| 17 | 491821.11 | 3605704.74 | 1.Fl | 13.32 | - | 73.7 | 65.6 | -8.1 | - |
| 18 | 491835.98 | 3605711.30 | 1.Fl | 13.48 | - | 66.1 | 66.1 | 0 | - |
| 19 | 491852.08 | 3605713.10 | 1.Fl | 13.48 | - | 65.9 | 65.9 | 0 | - |
| 20 | 491869.05 | 3605713.12 | 1.Fl | 13.71 | - | 67.5 | 67.5 | 0 | - |
| 21 | 491879.40 | 3605713.03 | 1.Fl | 13.75 | - | 65.9 | 65.9 | 0 | - |
| 22 | 491895.91 | 3605713.09 | 1.Fl | 13.83 | - | 66.1 | 66.1 | 0 | - |
| 23 | 491925.28 | 3605718.84 | 1.Fl | 13.92 | - | 61.3 | 61.3 | 0 | - |
| 24 | 491939.25 | 3605718.61 | 1.Fl | 13.92 | - | 65.2 | 65.2 | 0 | - |
| 25 | 491949.09 | 3605718.61 | 1.Fl | 13.92 | - | 62.0 | 62.0 | 0 | - |
| 26 | 491962.58 | 3605718.76 | 1.Fl | 13.96 | - | 63.0 | 63.0 | 0 | - |
| 27 | 492090.14 | 3605689.32 | 1.Fl | 14.54 | - | 63.6 | 63.6 | 0 | - |
| 28 | 492090.06 | 3605668.91 | 1.Fl | 14.08 | - | 62.2 | 62.2 | 0 | - |
| 29 | 492090.38 | 3605664.55 | 1.Fl | 13.99 | - | 62.4 | 62.4 | 0 | - |
| 30 | 492090.47 | 3605641.40 | 1.Fl | 14.20 | - | 64.2 | 64.2 | 0 | - |

8575 Bella Mar
SoundPLAN Data - Vehicle and Trolley Traffic

| Source name | | Traffic lane | | Level w/o NP Day dB(A) | Level w NP Day dB(A) |
|---|---|---|---|---|---|
| 1 | 1.Fl | 65.2 | 65.2 | | |
| Hollister Street | | - | | 39.2 | 39.2 |
| I-5 Northbound | | - | | 61.8 | 61.8 |
| I-5 Off-Ramp | | - | | 51.8 | 51.8 |
| I-5 On-Ramp | | - | | 58.1 | 58.1 |
| I-5 Southbound | | - | | 59.9 | 59.9 |
| Trolley | | - | | 37.5 | 37.5 |
| 2 | 1.Fl | 63.4 | 63.4 | | |
| Hollister Street | | - | | 40.3 | 40.3 |
| I-5 Northbound | | - | | 59.9 | 59.9 |
| I-5 Off-Ramp | | - | | 49.7 | 49.7 |
| I-5 On-Ramp | | - | | 56.9 | 56.9 |
| I-5 Southbound | | - | | 57.9 | 57.9 |
| Trolley | | - | | 37.6 | 37.6 |
| 3 | 1.Fl | 67.1 | 67.1 | | |
| Hollister Street | | - | | 38.1 | 38.1 |
| I-5 Northbound | | - | | 63.9 | 63.9 |
| I-5 Off-Ramp | | - | | 53.5 | 53.5 |
| I-5 On-Ramp | | - | | 59.8 | 59.8 |
| I-5 Southbound | | - | | 61.7 | 61.7 |
| Trolley | | - | | 37.0 | 37.0 |
| 4 | 1.Fl | 67.2 | 67.2 | | |
| Hollister Street | | - | | 38.8 | 38.8 |
| I-5 Northbound | | - | | 64.1 | 64.1 |
| I-5 Off-Ramp | | - | | 53.1 | 53.1 |
| I-5 On-Ramp | | - | | 60.3 | 60.3 |
| I-5 Southbound | | - | | 61.5 | 61.5 |
| Trolley | | - | | 37.1 | 37.1 |
| 5 | 1.Fl | 72.3 | 65.2 | | |
| Hollister Street | | - | | 32.2 | 28.3 |
| I-5 Northbound | | - | | 69.4 | 62.1 |
| I-5 Off-Ramp | | - | | 59.1 | 52.0 |
| I-5 On-Ramp | | - | | 63.5 | 56.4 |
| I-5 Southbound | | - | | 67.4 | 60.2 |
| Trolley | | - | | 36.0 | 36.4 |
| 6 | 1.Fl | 67.1 | 66.6 | | |
| Hollister Street | | - | | 35.1 | 35.1 |
| I-5 Northbound | | - | | 64.0 | 63.5 |
| I-5 Off-Ramp | | - | | 54.8 | 54.3 |
| I-5 On-Ramp | | - | | 58.0 | 57.4 |
| I-5 Southbound | | - | | 62.3 | 61.7 |
| Trolley | | - | | 36.4 | 36.4 |
| 7 | 1.Fl | 69.6 | 69.3 | | |
| Hollister Street | | - | | 31.4 | 31.4 |
| I-5 Northbound | | - | | 66.4 | 66.2 |
| I-5 Off-Ramp | | - | | 57.2 | 56.9 |
| I-5 On-Ramp | | - | | 60.6 | 60.4 |
| I-5 Southbound | | - | | 64.8 | 64.5 |
| Trolley | | - | | 35.8 | 35.8 |
| 8 | 1.Fl | 72.8 | 65.6 | | |
| Hollister Street | | - | | 24.3 | 27.7 |
| I-5 Northbound | | - | | 69.8 | 62.6 |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Off-Ramp | | - | | 59.7 | 52.6 |
| I-5 On-Ramp | | - | | 64.6 | 57.2 |
| I-5 Southbound | | - | | 67.6 | 60.6 |
| Trolley | | - | | 35.3 | 35.8 |
| 9 | 1.Fl | 65.2 | 65.2 | | |
| Hollister Street | | - | | 23.5 | 23.5 |
| I-5 Northbound | | - | | 61.9 | 61.9 |
| I-5 Off-Ramp | | - | | 53.2 | 53.2 |
| I-5 On-Ramp | | - | | 56.1 | 56.1 |
| I-5 Southbound | | - | | 60.6 | 60.6 |
| Trolley | | - | | 36.2 | 36.2 |
| 10 | 1.Fl | 57.4 | 57.4 | | |
| Hollister Street | | - | | 22.9 | 22.9 |
| I-5 Northbound | | - | | 54.2 | 54.2 |
| I-5 Off-Ramp | | - | | 45.7 | 45.7 |
| I-5 On-Ramp | | - | | 48.3 | 48.3 |
| I-5 Southbound | | - | | 52.6 | 52.6 |
| Trolley | | - | | 36.3 | 36.3 |
| 11 | 1.Fl | 58.1 | 58.1 | | |
| Hollister Street | | - | | 23.4 | 23.4 |
| I-5 Northbound | | - | | 54.9 | 54.9 |
| I-5 Off-Ramp | | - | | 45.6 | 45.6 |
| I-5 On-Ramp | | - | | 49.0 | 49.0 |
| I-5 Southbound | | - | | 53.3 | 53.3 |
| Trolley | | - | | 36.4 | 36.4 |
| 12 | 1.Fl | 66.3 | 66.3 | | |
| Hollister Street | | - | | 23.2 | 23.2 |
| I-5 Northbound | | - | | 63.3 | 63.3 |
| I-5 Off-Ramp | | - | | 53.3 | 53.3 |
| I-5 On-Ramp | | - | | 57.3 | 57.3 |
| I-5 Southbound | | - | | 61.4 | 61.4 |
| Trolley | | - | | 36.1 | 36.1 |
| 13 | 1.Fl | 70.0 | 70.0 | | |
| Hollister Street | | - | | 25.6 | 25.6 |
| I-5 Northbound | | - | | 67.0 | 67.0 |
| I-5 Off-Ramp | | - | | 57.4 | 57.4 |
| I-5 On-Ramp | | - | | 61.5 | 61.5 |
| I-5 Southbound | | - | | 64.9 | 64.9 |
| Trolley | | - | | 36.1 | 36.1 |
| 14 | 1.Fl | 73.8 | 65.7 | | |
| Hollister Street | | - | | 20.8 | 20.8 |
| I-5 Northbound | | - | | 71.0 | 62.7 |
| I-5 Off-Ramp | | - | | 60.6 | 52.7 |
| I-5 On-Ramp | | - | | 65.2 | 57.0 |
| I-5 Southbound | | - | | 68.6 | 60.6 |
| Trolley | | - | | 34.8 | 34.8 |
| 15 | 1.Fl | 73.9 | 65.9 | | |
| Hollister Street | | - | | 21.2 | 21.2 |
| I-5 Northbound | | - | | 71.1 | 63.0 |
| I-5 Off-Ramp | | - | | 60.5 | 52.6 |
| I-5 On-Ramp | | - | | 65.1 | 57.0 |
| I-5 Southbound | | - | | 68.7 | 60.8 |
| Trolley | | - | | 34.9 | 34.9 |
| 16 | 1.Fl | 74.0 | 65.9 | | |
| Hollister Street | | - | | 20.9 | 20.9 |

| | | | | | |
|---|---|---|---|---|---|
| I-5 Northbound | | - | | 71.2 | 63.0 |
| I-5 Off-Ramp | | - | | 60.7 | 52.8 |
| I-5 On-Ramp | | - | | 65.3 | 57.2 |
| I-5 Southbound | | - | | 68.7 | 60.6 |
| Trolley | | - | | 34.7 | 34.7 |
| 17 | 1.Fl | 73.7 | 65.6 | | |
| Hollister Street | | - | | 21.4 | 21.4 |
| I-5 Northbound | | - | | 70.8 | 62.6 |
| I-5 Off-Ramp | | - | | 60.4 | 52.5 |
| I-5 On-Ramp | | - | | 64.9 | 56.7 |
| I-5 Southbound | | - | | 68.6 | 60.5 |
| Trolley | | - | | 35.0 | 35.0 |
| 18 | 1.Fl | 66.1 | 66.1 | | |
| Hollister Street | | - | | 43.7 | 43.7 |
| I-5 Northbound | | - | | 63.6 | 63.6 |
| I-5 Off-Ramp | | - | | 49.2 | 49.2 |
| I-5 On-Ramp | | - | | 54.5 | 54.5 |
| I-5 Southbound | | - | | 61.4 | 61.4 |
| Trolley | | - | | 38.8 | 38.8 |
| 19 | 1.Fl | 65.9 | 65.9 | | |
| Hollister Street | | - | | 42.9 | 42.9 |
| I-5 Northbound | | - | | 63.3 | 63.3 |
| I-5 Off-Ramp | | - | | 49.8 | 49.8 |
| I-5 On-Ramp | | - | | 53.9 | 53.9 |
| I-5 Southbound | | - | | 61.5 | 61.5 |
| Trolley | | - | | 38.2 | 38.2 |
| 20 | 1.Fl | 67.5 | 67.5 | | |
| Hollister Street | | - | | 39.9 | 39.9 |
| I-5 Northbound | | - | | 64.4 | 64.4 |
| I-5 Off-Ramp | | - | | 53.9 | 53.9 |
| I-5 On-Ramp | | - | | 55.7 | 55.7 |
| I-5 Southbound | | - | | 63.4 | 63.4 |
| Trolley | | - | | 37.7 | 37.7 |
| 21 | 1.Fl | 65.9 | 65.9 | | |
| Hollister Street | | - | | 42.0 | 42.0 |
| I-5 Northbound | | - | | 63.0 | 63.0 |
| I-5 Off-Ramp | | - | | 51.3 | 51.3 |
| I-5 On-Ramp | | - | | 53.6 | 53.6 |
| I-5 Southbound | | - | | 61.8 | 61.8 |
| Trolley | | - | | 38.3 | 38.3 |
| 22 | 1.Fl | 66.1 | 66.1 | | |
| Hollister Street | | - | | 41.6 | 41.6 |
| I-5 Northbound | | - | | 63.0 | 63.0 |
| I-5 Off-Ramp | | - | | 52.2 | 52.2 |
| I-5 On-Ramp | | - | | 54.0 | 54.0 |
| I-5 Southbound | | - | | 62.2 | 62.2 |
| Trolley | | - | | 38.7 | 38.7 |
| 23 | 1.Fl | 61.3 | 61.3 | | |
| Hollister Street | | - | | 45.9 | 45.9 |
| I-5 Northbound | | - | | 58.6 | 58.6 |
| I-5 Off-Ramp | | - | | 35.7 | 35.7 |
| I-5 On-Ramp | | - | | 35.8 | 35.8 |
| I-5 Southbound | | - | | 57.5 | 57.5 |
| Trolley | | - | | 40.1 | 40.1 |
| 24 | 1.Fl | 65.2 | 65.2 | | |

| | | | | | |
|---|---|---|---|---|---|
| Hollister Street | | - | | 39.9 | 39.9 |
| I-5 Northbound | | - | | 62.2 | 62.2 |
| I-5 Off-Ramp | | - | | 49.4 | 49.4 |
| I-5 On-Ramp | | - | | 51.1 | 51.1 |
| I-5 Southbound | | - | | 61.5 | 61.5 |
| Trolley | | - | | 38.3 | 38.3 |
| 25 | 1.Fl | 62.0 | 62.0 | | |
| Hollister Street | | - | | 45.8 | 45.8 |
| I-5 Northbound | | - | | 59.1 | 59.1 |
| I-5 Off-Ramp | | - | | 45.3 | 45.3 |
| I-5 On-Ramp | | - | | 47.1 | 47.1 |
| I-5 Southbound | | - | | 58.0 | 58.0 |
| Trolley | | - | | 40.2 | 40.2 |
| 26 | 1.Fl | 63.0 | 63.0 | | |
| Hollister Street | | - | | 44.7 | 44.7 |
| I-5 Northbound | | - | | 60.0 | 60.0 |
| I-5 Off-Ramp | | - | | 46.7 | 46.7 |
| I-5 On-Ramp | | - | | 47.9 | 47.9 |
| I-5 Southbound | | - | | 59.3 | 59.3 |
| Trolley | | - | | 40.1 | 40.1 |
| 27 | 1.Fl | 63.6 | 63.6 | | |
| Hollister Street | | - | | 63.3 | 63.3 |
| I-5 Northbound | | - | | 30.6 | 30.6 |
| I-5 Off-Ramp | | - | | 21.6 | 21.6 |
| I-5 On-Ramp | | - | | 23.6 | 23.6 |
| I-5 Southbound | | - | | 30.6 | 30.6 |
| Trolley | | - | | 51.1 | 51.1 |
| 28 | 1.Fl | 62.2 | 62.2 | | |
| Hollister Street | | - | | 61.9 | 61.9 |
| I-5 Northbound | | - | | 29.3 | 29.3 |
| I-5 Off-Ramp | | - | | 19.9 | 19.9 |
| I-5 On-Ramp | | - | | 21.4 | 21.4 |
| I-5 Southbound | | - | | 29.3 | 29.3 |
| Trolley | | - | | 50.1 | 50.1 |
| 29 | 1.Fl | 62.4 | 62.4 | | |
| Hollister Street | | - | | 62.1 | 62.1 |
| I-5 Northbound | | - | | 29.5 | 29.5 |
| I-5 Off-Ramp | | - | | 19.9 | 19.9 |
| I-5 On-Ramp | | - | | 22.9 | 22.9 |
| I-5 Southbound | | - | | 29.7 | 29.7 |
| Trolley | | - | | 50.0 | 50.0 |
| 30 | 1.Fl | 64.2 | 64.2 | | |
| Hollister Street | | - | | 64.0 | 64.0 |
| I-5 Northbound | | - | | 29.1 | 29.1 |
| I-5 Off-Ramp | | - | | 19.8 | 19.8 |
| I-5 On-Ramp | | - | | 21.9 | 21.9 |
| I-5 Southbound | | - | | 29.2 | 29.2 |
| Trolley | | - | | 51.4 | 51.4 |

# ATTACHMENT 5

# FHWA RD-77-108 – Off-Site Traffic Noise

| | Roadway | Segment | Existing | Existing + Project | Difference | Near-Term | Near-Term + Project | Difference | Increase Over Existing | Horizon | Horizon + Project | Difference | Increase Over Existing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 71.8 | 71.9 | 0.1 | 72.1 | 72.2 | 0.1 | 0.4 | 72.6 | 72.7 | 0.1 | 0.9 |
| 2 | Hollister Street | Main Street to Charles Avenue | 63.6 | 64.2 | 0.6 | 63.9 | 64.5 | 0.6 | 0.9 | 66.2 | 66.6 | 0.4 | 3.0 |
| 3 | Hollister Street | Charles Avenue to Project Site | 63.6 | 64.2 | 0.6 | 63.9 | 64.5 | 0.6 | 0.9 | 66.0 | 66.4 | 0.4 | 2.8 |
| 4 | Hollister Street | Project Site to Palm Avenue | 63.7 | 64.4 | 0.7 | 64.0 | 64.6 | 0.6 | 0.9 | 66.1 | 66.5 | 0.4 | 2.8 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 72.2 | 72.4 | 0.2 | 72.4 | 72.5 | 0.1 | 0.3 | 73.3 | 73.5 | 0.2 | 1.3 |

**FHWA RD-77-108**

# Traffic Noise Prediction Model

**Data Input Sheet**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Existing, Existing + Project

**Surface Refelction:** CNEL
**Assessment Metric:** Hard
**Peak ratio to ADT:** 10.00
**Traffic Desc. (Peak or ADT) :** ADT

| Segment | Roadway | Segment | Traffic Vol. | Speed (Mph) | Distance to CL | % Autos | %MT | % HT | Day % | Eve % | Night % | K-Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXISTING | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 26,312 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 6,372 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 6,372 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 6,639 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 22,262 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| EXISTING + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 27,178 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 7,455 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 7,455 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 7,722 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 23,128 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |

**FHWA RD-77-108**

# Traffic Noise Prediction Model

**Predicted Noise Levels**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Existing, Existing + Project
**Assessment Metric:** Hard

| Segment | Roadway | Segment | Noise Levels, dBA Hard | | | | Distance to Traffic Noise Level Contours, Feet | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Total | 75 dB | 70 dB | 65 dB | 60 dB | 55 dB | 50 dB |
| EXISTING | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 69.8 | 62.6 | 65.7 | 71.8 | 24 | 76 | 239 | 757 | 2,393 | 7,568 |
| 2 | Hollister Street | Main Street to Charles Avenue | 60.0 | 54.5 | 59.9 | 63.6 | 4 | 11 | 36 | 115 | 362 | 1,145 |
| 3 | Hollister Street | Charles Avenue to Project Site | 60.0 | 54.5 | 59.9 | 63.6 | 4 | 11 | 36 | 115 | 362 | 1,145 |
| 4 | Hollister Street | Project Site to Palm Avenue | 60.2 | 54.7 | 60.1 | 63.7 | 4 | 12 | 37 | 117 | 371 | 1,172 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 70.6 | 62.7 | 65.4 | 72.2 | 26 | 83 | 262 | 830 | 2,624 | 8,298 |
| EXISTING + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 69.9 | 62.8 | 65.8 | 71.9 | 24 | 77 | 245 | 774 | 2,449 | 7,744 |
| 2 | Hollister Street | Main Street to Charles Avenue | 60.7 | 55.2 | 60.6 | 64.2 | 4 | 13 | 42 | 132 | 416 | 1,315 |
| 3 | Hollister Street | Charles Avenue to Project Site | 60.7 | 55.2 | 60.6 | 64.2 | 4 | 13 | 42 | 132 | 416 | 1,315 |
| 4 | Hollister Street | Project Site to Palm Avenue | 60.9 | 55.4 | 60.7 | 64.4 | 4 | 14 | 44 | 138 | 435 | 1,377 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 70.7 | 62.9 | 65.6 | 72.4 | 27 | 87 | 275 | 869 | 2,748 | 8,689 |

**FHWA RD-77-108**

## Traffic Noise Prediction Model

**Data Input Sheet**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Near-Term, Near-Term + Project

**Surface Refelction:** CNEL
**Assessment Metric:** Hard
**Peak ratio to ADT:** 10.00
**Traffic Desc. (Peak or ADT) :** ADT

| Segment | Roadway | Segment | Traffic Vol. | Speed (Mph) | Distance to CL | % Autos | %MT | % HT | Day % | Eve % | Night % | K-Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NEAR-TERM | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 28,333 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 6,857 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 6,857 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 7,098 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 22,955 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| NEAR-TERM + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 29,199 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 7,940 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 7,911 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 8,181 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 23,822 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |

**FHWA RD-77-108**

## Traffic Noise Prediction Model

**Predicted Noise Levels**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Near-Term, Near-Term + Project
**Assessment Metric:** Hard

| Segment | Roadway | Segment | Noise Levels, dBA Hard | | | | Distance to Traffic Noise Level Contours, Feet | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Total | 75 dB | 70 dB | 65 dB | 60 dB | 55 dB | 50 dB |
| NEAR-TERM | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 70.1 | 63.0 | 66.0 | 72.1 | 26 | 81 | 256 | 811 | 2,564 | 8,109 |
| 2 | Hollister Street | Main Street to Charles Avenue | 60.4 | 54.8 | 60.2 | 63.9 | 4 | 12 | 39 | 123 | 388 | 1,227 |
| 3 | Hollister Street | Charles Avenue to Project Site | 60.4 | 54.8 | 60.2 | 63.9 | 4 | 12 | 39 | 123 | 388 | 1,227 |
| 4 | Hollister Street | Project Site to Palm Avenue | 60.5 | 55.0 | 60.3 | 64.0 | 4 | 13 | 40 | 126 | 397 | 1,256 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 70.7 | 62.8 | 65.6 | 72.4 | 27 | 87 | 275 | 869 | 2,748 | 8,689 |
| NEAR-TERM + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 70.3 | 63.1 | 66.1 | 72.2 | 26 | 83 | 262 | 830 | 2,624 | 8,298 |
| 2 | Hollister Street | Main Street to Charles Avenue | 61.0 | 55.5 | 60.8 | 64.5 | 4 | 14 | 45 | 141 | 446 | 1,409 |
| 3 | Hollister Street | Charles Avenue to Project Site | 61.0 | 55.5 | 60.8 | 64.5 | 4 | 14 | 45 | 141 | 446 | 1,409 |
| 4 | Hollister Street | Project Site to Palm Avenue | 61.1 | 55.6 | 61.0 | 64.6 | 5 | 14 | 46 | 144 | 456 | 1,442 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 70.8 | 63.0 | 65.7 | 72.5 | 28 | 89 | 281 | 889 | 2,812 | 8,891 |

**FHWA RD-77-108**

## Traffic Noise Prediction Model

**Data Input Sheet**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Horizon, Horizon + Project

**Surface Refelction:** CNEL
**Assessment Metric:** Hard
**Peak ratio to ADT:** 10.00
**Traffic Desc. (Peak or ADT) :** ADT

| Segment | Roadway | Segment | Traffic Vol. | Speed (Mph) | Distance to CL | % Autos | %MT | % HT | Day % | Eve % | Night % | K-Factor |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HORIZON | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 31,815 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 11,675 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 11,277 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 11,525 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 28,671 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| HORIZON + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 32,681 | 40 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 2 | Hollister Street | Main Street to Charles Avenue | 12,758 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 3 | Hollister Street | Charles Avenue to Project Site | 12,360 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 4 | Hollister Street | Project Site to Palm Avenue | 12,608 | 30 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 29,537 | 45 | 50 | 96.07 | 2.36 | 1.57 | 80.00 | 10.00 | 10.00 | |

**FHWA RD-77-108**

## Traffic Noise Prediction Model

**Predicted Noise Levels**

**Project Name :** Bella Mar
**Project Number :** 8575
**Modeled Condition :** Horizon, Horizon + Project
**Assessment Metric:** Hard

| Segment | Roadway | Segment | Noise Levels, dBA Hard | | | | Distance to Traffic Noise Level Contours, Feet | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Auto | MT | HT | Total | 75 dB | 70 dB | 65 dB | 60 dB | 55 dB | 50 dB |
| HORIZON | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 70.6 | 63.5 | 66.5 | 72.6 | 29 | 91 | 288 | 910 | 2,877 | 9,099 |
| 2 | Hollister Street | Main Street to Charles Avenue | 62.7 | 57.2 | 62.5 | 66.2 | 7 | 21 | 66 | 208 | 659 | 2,084 |
| 3 | Hollister Street | Charles Avenue to Project Site | 62.5 | 57.0 | 62.4 | 66.0 | 6 | 20 | 63 | 199 | 629 | 1,991 |
| 4 | Hollister Street | Project Site to Palm Avenue | 62.6 | 57.1 | 62.5 | 66.1 | 6 | 20 | 64 | 204 | 644 | 2,037 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 71.6 | 63.8 | 66.5 | 73.3 | 34 | 107 | 338 | 1,069 | 3,380 | 10,690 |
| HORIZON + PROJECT | | | | | | | | | | | | |
| 1 | Main Street | I-5 Northbound Ramps to Hollister Street | 70.7 | 63.6 | 66.6 | 72.7 | 29 | 93 | 294 | 931 | 2,944 | 9,310 |
| 2 | Hollister Street | Main Street to Charles Avenue | 63.1 | 57.5 | 62.9 | 66.6 | 7 | 23 | 72 | 229 | 723 | 2,285 |
| 3 | Hollister Street | Charles Avenue to Project Site | 62.9 | 57.4 | 62.8 | 66.4 | 7 | 22 | 69 | 218 | 690 | 2,183 |
| 4 | Hollister Street | Project Site to Palm Avenue | 63.0 | 57.5 | 62.8 | 66.5 | 7 | 22 | 71 | 223 | 706 | 2,233 |
| 5 | Palm Avenue | I-5 Northbound Ramps to Hollister Street | 71.8 | 63.9 | 66.7 | 73.5 | 35 | 112 | 354 | 1,119 | 3,540 | 11,194 |

# ATTACHMENT 6

# SoundPLAN Data – HVAC

8575 Bella Mar
SoundPLAN Data - HVAC

| Source name | Reference | Level Leq1 dB(A) | Corrections Cwall dB(A) | Corrections CI dB(A) | Corrections CT dB(A) |
|---|---|---|---|---|---|
| HVAC1 | Lw/unit | 85 | - | - | - |
| HVAC2 | Lw/unit | 85 | - | - | - |
| HVAC3 | Lw/unit | 85 | - | - | - |
| HVAC4 | Lw/unit | 85 | - | - | - |
| HVAC5 | Lw/unit | 85 | - | - | - |
| HVAC6 | Lw/unit | 85 | - | - | - |
| HVAC7 | Lw/unit | 85 | - | - | - |
| HVAC8 | Lw/unit | 85 | - | - | - |
| HVAC9 | Lw/unit | 85 | - | - | - |
| HVAC10 | Lw/unit | 85 | - | - | - |
| HVAC11 | Lw/unit | 85 | - | - | - |
| HVAC12 | Lw/unit | 85 | - | - | - |
| HVAC13 | Lw/unit | 85 | - | - | - |
| HVAC14 | Lw/unit | 85 | - | - | - |
| HVAC15 | Lw/unit | 85 | - | - | - |
| HVAC16 | Lw/unit | 85 | - | - | - |
| HVAC17 | Lw/unit | 85 | - | - | - |
| HVAC18 | Lw/unit | 85 | - | - | - |
| HVAC19 | Lw/unit | 85 | - | - | - |

8575 Bella Mar
SoundPLAN Data - HVAC

| No. | Coordinates X | Y | Floor | Height | Limit Leq1 | Level w/o NP Leq1 | Level w NP Leq1 |
|---|---|---|---|---|---|---|---|
| | in meter | | | m | dB(A) | dB(A) | dB(A) |
| 1 | 492088.22 | 3605567.87 | 1.Fl | 7.00 | - | 40.4 | 0 |
| 2 | 492044.23 | 3605567.54 | 1.Fl | 7.00 | - | 41.7 | 0 |
| 3 | 492001.24 | 3605567.54 | 1.Fl | 7.00 | - | 42.8 | 0 |
| 4 | 491970.81 | 3605566.55 | 1.Fl | 7.00 | - | 43.0 | 0 |
| 5 | 491879.20 | 3605565.56 | 1.Fl | 6.90 | - | 40.8 | 0 |
| 6 | 491809.74 | 3605565.23 | 1.Fl | 7.20 | - | 40.2 | 0 |
| 7 | 491797.18 | 3605636.99 | 1.Fl | 7.70 | - | 40.7 | 0 |
| 8 | 491788.58 | 3605719.68 | 1.Fl | 7.20 | - | 38.8 | 0 |
| 9 | 491786.59 | 3605769.29 | 1.Fl | 5.90 | - | 38.4 | 0 |
| 10 | 491864.65 | 3605769.95 | 1.Fl | 5.00 | - | 40.8 | 0 |
| 11 | 491928.81 | 3605769.95 | 1.Fl | 6.00 | - | 41.1 | 0 |
| 12 | 492006.53 | 3605770.28 | 1.Fl | 6.20 | - | 40.8 | 0 |
| 13 | 492101.78 | 3605769.62 | 1.Fl | 7.80 | - | 40.3 | 0 |
| 14 | 492119.31 | 3605710.09 | 1.Fl | 7.60 | - | 38.9 | 0 |
| 15 | 492116.33 | 3605634.68 | 1.Fl | 7.50 | - | 39.9 | 0 |

| Difference Leq1 dB | Conflict Leq1 dB |
|---|---|
| -40.4 | - |
| -41.7 | - |
| -42.8 | - |
| -43.0 | - |
| -40.8 | - |
| -40.2 | - |
| -40.7 | - |
| -38.8 | - |
| -38.4 | - |
| -40.8 | - |
| -41.1 | - |
| -40.8 | - |
| -40.3 | - |
| -38.9 | - |
| -39.9 | - |

| Source name | | Level w/o NP Leq1 dB(A) | | Level w NP Leq1 dB(A) |
|---|---|---|---|---|
| 1 | 1.Fl | 40.4 | 0.0 | |
| HVAC1 | | 13.1 | | - |
| HVAC2 | | 11.7 | | - |
| HVAC3 | | 12.4 | | - |
| HVAC4 | | 17.7 | | - |
| HVAC5 | | 28.1 | | - |
| HVAC6 | | 15.1 | | - |
| HVAC7 | | 17.7 | | - |
| HVAC8 | | 25.7 | | - |
| HVAC9 | | 13.9 | | - |
| HVAC10 | | 14.1 | | - |
| HVAC11 | | 14.7 | | - |
| HVAC12 | | 16.6 | | - |
| HVAC13 | | 31.0 | | - |
| HVAC14 | | 31.6 | | - |
| HVAC15 | | 30.7 | | - |
| HVAC16 | | 29.6 | | - |
| HVAC17 | | 27.9 | | - |
| HVAC18 | | 31.2 | | - |
| HVAC19 | | 34.5 | | - |
| 2 | 1.Fl | 41.7 | 0.0 | |
| HVAC1 | | 13.0 | | - |
| HVAC2 | | 12.3 | | - |
| HVAC3 | | 13.4 | | - |
| HVAC4 | | 13.5 | | - |
| HVAC5 | | 13.6 | | - |
| HVAC6 | | 15.8 | | - |
| HVAC7 | | 19.0 | | - |
| HVAC8 | | 26.9 | | - |
| HVAC9 | | 14.7 | | - |
| HVAC10 | | 15.1 | | - |
| HVAC11 | | 16.2 | | - |
| HVAC12 | | 16.4 | | - |
| HVAC13 | | 16.6 | | - |
| HVAC14 | | 17.1 | | - |
| HVAC15 | | 33.5 | | - |
| HVAC16 | | 31.6 | | - |
| HVAC17 | | 30.6 | | - |
| HVAC18 | | 37.0 | | - |
| HVAC19 | | 36.0 | | - |
| 3 | 1.Fl | 42.8 | 0.0 | |
| HVAC1 | | 12.8 | | - |
| HVAC2 | | 12.8 | | - |
| HVAC3 | | 13.5 | | - |
| HVAC4 | | 13.5 | | - |
| HVAC5 | | 13.9 | | - |
| HVAC6 | | 16.3 | | - |
| HVAC7 | | 20.8 | | - |
| HVAC8 | | 29.1 | | - |
| HVAC9 | | 15.4 | | - |
| HVAC10 | | 15.8 | | - |
| HVAC11 | | 16.6 | | - |

| | | | | |
|---|---|---|---|---|
| HVAC12 | | 16.7 | | - |
| HVAC13 | | 17.1 | | - |
| HVAC14 | | 15.9 | | - |
| HVAC15 | | 37.2 | | - |
| HVAC16 | | 37.2 | | - |
| HVAC17 | | 31.7 | | - |
| HVAC18 | | 35.0 | | - |
| HVAC19 | | 34.2 | | - |
| 4 | 1.Fl | 43.0 | 0.0 | |
| HVAC1 | | 13.9 | | - |
| HVAC2 | | 13.3 | | - |
| HVAC3 | | 14.2 | | - |
| HVAC4 | | 13.5 | | - |
| HVAC5 | | 13.5 | | - |
| HVAC6 | | 16.1 | | - |
| HVAC7 | | 30.4 | | - |
| HVAC8 | | 30.5 | | - |
| HVAC9 | | 15.7 | | - |
| HVAC10 | | 17.1 | | - |
| HVAC11 | | 16.5 | | - |
| HVAC12 | | 16.6 | | - |
| HVAC13 | | 15.7 | | - |
| HVAC14 | | 16.0 | | - |
| HVAC15 | | 36.8 | | - |
| HVAC16 | | 35.4 | | - |
| HVAC17 | | 35.7 | | - |
| HVAC18 | | 36.3 | | - |
| HVAC19 | | 31.2 | | - |
| 5 | 1.Fl | 40.8 | 0.0 | |
| HVAC1 | | 19.7 | | - |
| HVAC2 | | 19.0 | | - |
| HVAC3 | | 27.7 | | - |
| HVAC4 | | 14.8 | | - |
| HVAC5 | | 12.8 | | - |
| HVAC6 | | 23.1 | | - |
| HVAC7 | | 26.8 | | - |
| HVAC8 | | 36.0 | | - |
| HVAC9 | | 21.9 | | - |
| HVAC10 | | 30.9 | | - |
| HVAC11 | | 17.6 | | - |
| HVAC12 | | 15.8 | | - |
| HVAC13 | | 14.9 | | - |
| HVAC14 | | 14.6 | | - |
| HVAC15 | | 30.0 | | - |
| HVAC16 | | 30.8 | | - |
| HVAC17 | | 31.7 | | - |
| HVAC18 | | 28.7 | | - |
| HVAC19 | | 27.2 | | - |
| 6 | 1.Fl | 40.2 | 0.0 | |
| HVAC1 | | 30.1 | | - |
| HVAC2 | | 25.9 | | - |
| HVAC3 | | 19.8 | | - |
| HVAC4 | | 17.5 | | - |
| HVAC5 | | 17.3 | | - |
| HVAC6 | | 29.5 | | - |

| | | | | |
|---|---|---|---|---|
| HVAC7 | | | 31.6 | - |
| HVAC8 | | | 35.8 | - |
| HVAC9 | | | 22.9 | - |
| HVAC10 | | | 20.9 | - |
| HVAC11 | | | 20.4 | - |
| HVAC12 | | | 20.0 | - |
| HVAC13 | | | 14.8 | - |
| HVAC14 | | | 14.8 | - |
| HVAC15 | | | 26.5 | - |
| HVAC16 | | | 27.3 | - |
| HVAC17 | | | 27.6 | - |
| HVAC18 | | | 25.4 | - |
| HVAC19 | | | 24.4 | - |
| 7 | 1.Fl | 40.7 | 0.0 | |
| HVAC1 | | | 35.3 | - |
| HVAC2 | | | 26.5 | - |
| HVAC3 | | | 21.9 | - |
| HVAC4 | | | 19.1 | - |
| HVAC5 | | | 17.0 | - |
| HVAC6 | | | 32.2 | - |
| HVAC7 | | | 31.8 | - |
| HVAC8 | | | 33.8 | - |
| HVAC9 | | | 25.2 | - |
| HVAC10 | | | 28.0 | - |
| HVAC11 | | | 21.3 | - |
| HVAC12 | | | 21.2 | - |
| HVAC13 | | | 20.5 | - |
| HVAC14 | | | 17.9 | - |
| HVAC15 | | | 15.9 | - |
| HVAC16 | | | 17.2 | - |
| HVAC17 | | | 23.9 | - |
| HVAC18 | | | 22.9 | - |
| HVAC19 | | | 13.8 | - |
| 8 | 1.Fl | 38.8 | 0.0 | |
| HVAC1 | | | 35.5 | - |
| HVAC2 | | | 29.1 | - |
| HVAC3 | | | 27.2 | - |
| HVAC4 | | | 24.9 | - |
| HVAC5 | | | 22.5 | - |
| HVAC6 | | | 27.0 | - |
| HVAC7 | | | 26.6 | - |
| HVAC8 | | | 28.3 | - |
| HVAC9 | | | 23.0 | - |
| HVAC10 | | | 15.7 | - |
| HVAC11 | | | 14.3 | - |
| HVAC12 | | | 13.7 | - |
| HVAC13 | | | 13.1 | - |
| HVAC14 | | | 12.7 | - |
| HVAC15 | | | 17.5 | - |
| HVAC16 | | | 18.7 | - |
| HVAC17 | | | 20.1 | - |
| HVAC18 | | | 16.6 | - |
| HVAC19 | | | 15.5 | - |
| 9 | 1.Fl | 38.4 | 0.0 | |
| HVAC1 | | | 30.7 | - |

| | | | | |
|---|---|---|---|---|
| HVAC2 | | 31.8 | | - |
| HVAC3 | | 29.1 | | - |
| HVAC4 | | 25.2 | | - |
| HVAC5 | | 23.0 | | - |
| HVAC6 | | 25.1 | | - |
| HVAC7 | | 23.5 | | - |
| HVAC8 | | 23.5 | | - |
| HVAC9 | | 25.2 | | - |
| HVAC10 | | 24.7 | | - |
| HVAC11 | | 24.3 | | - |
| HVAC12 | | 24.6 | | - |
| HVAC13 | | 22.0 | | - |
| HVAC14 | | 20.2 | | - |
| HVAC15 | | 21.3 | | - |
| HVAC16 | | 21.5 | | - |
| HVAC17 | | 22.7 | | - |
| HVAC18 | | 21.1 | | - |
| HVAC19 | | 20.8 | | - |
| 10 | 1.Fl | 40.8 | 0.0 | |
| HVAC1 | | 32.0 | | - |
| HVAC2 | | 35.3 | | - |
| HVAC3 | | 33.7 | | - |
| HVAC4 | | 28.5 | | - |
| HVAC5 | | 25.8 | | - |
| HVAC6 | | 24.0 | | - |
| HVAC7 | | 21.8 | | - |
| HVAC8 | | 24.8 | | - |
| HVAC9 | | 26.5 | | - |
| HVAC10 | | 30.2 | | - |
| HVAC11 | | 24.7 | | - |
| HVAC12 | | 23.5 | | - |
| HVAC13 | | 20.0 | | - |
| HVAC14 | | 22.1 | | - |
| HVAC15 | | 24.0 | | - |
| HVAC16 | | 21.4 | | - |
| HVAC17 | | 21.7 | | - |
| HVAC18 | | 21.5 | | - |
| HVAC19 | | 19.7 | | - |
| 11 | 1.Fl | 41.1 | 0.0 | |
| HVAC1 | | 27.7 | | - |
| HVAC2 | | 33.4 | | - |
| HVAC3 | | 35.2 | | - |
| HVAC4 | | 32.6 | | - |
| HVAC5 | | 28.9 | | - |
| HVAC6 | | 24.4 | | - |
| HVAC7 | | 23.5 | | - |
| HVAC8 | | 23.2 | | - |
| HVAC9 | | 30.3 | | - |
| HVAC10 | | 27.0 | | - |
| HVAC11 | | 25.4 | | - |
| HVAC12 | | 25.6 | | - |
| HVAC13 | | 23.9 | | - |
| HVAC14 | | 23.3 | | - |
| HVAC15 | | 21.7 | | - |
| HVAC16 | | 21.3 | | - |

| | | | | |
|---|---|---|---|---|
| HVAC17 | | 21.5 | | - |
| HVAC18 | | 21.1 | | - |
| HVAC19 | | 20.8 | | - |
| 12 | 1.Fl | 40.8 | 0.0 | |
| HVAC1 | | 25.5 | | - |
| HVAC2 | | 29.1 | | - |
| HVAC3 | | 33.3 | | - |
| HVAC4 | | 35.5 | | - |
| HVAC5 | | 33.4 | | - |
| HVAC6 | | 22.4 | | - |
| HVAC7 | | 20.8 | | - |
| HVAC8 | | 19.4 | | - |
| HVAC9 | | 24.1 | | - |
| HVAC10 | | 25.9 | | - |
| HVAC11 | | 24.9 | | - |
| HVAC12 | | 25.2 | | - |
| HVAC13 | | 25.0 | | - |
| HVAC14 | | 24.8 | | - |
| HVAC15 | | 21.3 | | - |
| HVAC16 | | 21.1 | | - |
| HVAC17 | | 21.0 | | - |
| HVAC18 | | 21.2 | | - |
| HVAC19 | | 21.4 | | - |
| 13 | 1.Fl | 40.3 | 0.0 | |
| HVAC1 | | 22.6 | | - |
| HVAC2 | | 25.2 | | - |
| HVAC3 | | 27.9 | | - |
| HVAC4 | | 31.1 | | - |
| HVAC5 | | 36.6 | | - |
| HVAC6 | | 19.7 | | - |
| HVAC7 | | 18.0 | | - |
| HVAC8 | | 19.9 | | - |
| HVAC9 | | 23.2 | | - |
| HVAC10 | | 23.9 | | - |
| HVAC11 | | 24.7 | | - |
| HVAC12 | | 25.3 | | - |
| HVAC13 | | 26.3 | | - |
| HVAC14 | | 30.9 | | - |
| HVAC15 | | 22.3 | | - |
| HVAC16 | | 21.8 | | - |
| HVAC17 | | 21.7 | | - |
| HVAC18 | | 22.2 | | - |
| HVAC19 | | 22.7 | | - |
| 14 | 1.Fl | 38.9 | 0.0 | |
| HVAC1 | | 10.2 | | - |
| HVAC2 | | 15.8 | | - |
| HVAC3 | | 18.7 | | - |
| HVAC4 | | 22.6 | | - |
| HVAC5 | | 31.7 | | - |
| HVAC6 | | 22.1 | | - |
| HVAC7 | | 18.3 | | - |
| HVAC8 | | 15.3 | | - |
| HVAC9 | | 24.0 | | - |
| HVAC10 | | 22.6 | | - |
| HVAC11 | | 23.5 | | - |

| | | | | |
|---|---|---|---|---|
| HVAC12 | | 25.7 | | - |
| HVAC13 | | 27.0 | | - |
| HVAC14 | | 35.4 | | - |
| HVAC15 | | 20.0 | | - |
| HVAC16 | | 18.9 | | - |
| HVAC17 | | 17.5 | | - |
| HVAC18 | | 21.7 | | - |
| HVAC19 | | 24.6 | | - |
| 15 | 1.Fl | 39.9 | 0.0 | |
| HVAC1 | | 12.8 | | - |
| HVAC2 | | 14.0 | | - |
| HVAC3 | | 16.5 | | - |
| HVAC4 | | 19.8 | | - |
| HVAC5 | | 26.6 | | - |
| HVAC6 | | 22.3 | | - |
| HVAC7 | | 23.7 | | - |
| HVAC8 | | 16.7 | | - |
| HVAC9 | | 15.2 | | - |
| HVAC10 | | 16.6 | | - |
| HVAC11 | | 18.1 | | - |
| HVAC12 | | 20.9 | | - |
| HVAC13 | | 26.1 | | - |
| HVAC14 | | 35.8 | | - |
| HVAC15 | | 27.8 | | - |
| HVAC16 | | 26.5 | | - |
| HVAC17 | | 25.6 | | - |
| HVAC18 | | 29.7 | | - |
| HVAC19 | | 32.9 | | - |