5.12 NOISE

The components of the proposed Project analyzed herein are:

1) Adoption and implementation of the General Plan Update (Beaumont 2040 Plan) and
2) Adoption and implementation of the revised Zoning Ordinance and Zoning Map.[1]

Of the two Project components, the revised Zoning Ordinance is not considered to have impacts related to noise because it addresses site planning, building design, and community aesthetics, rather than physical changes to the land, and it was prepared for compatibility with the proposed Beaumont 2040 Plan. The revised Zoning Map will have similar types of land uses as the Beaumont 2040 Plan for consistency purposes; therefore, all discussions which apply to the Beaumont 2040 Plan shall also apply to the revised Zoning Map.

Since an Initial Study was not prepared with the issuance of the Notice of Preparation (Appendix A), the focus of the following discussion is related to generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Planning Area in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; generation of excessive groundborne vibration or groundborne noise levels; and the exposure of people residing or working in the Planning Area to excessive aircraft noise. A variety of noise and vibration sources within the Planning Area are assessed, including vehicular traffic on roadways and highways, as well as aircraft, railway, and stationary sources.

In response to the Notice of Preparation, the City received a comment letter from Caltrans regarding noise. These letters are included in Appendix A and are summarized in **Table 2-A – Summary of Written Comments Received in Response to the Notice of Preparation**. No oral comments were received regarding noise at the Project's public scoping meeting.

5.12.1 Setting

Overview of Sound Measurement

Noise is defined as unwanted sound. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

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

[1] The analysis in this section was prepared by Rincon Consultants.

dBA range. Normal conversational levels are usually in the 60 to 65 dBA range and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels from point sources, such as those from individual pieces of machinery, typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from the noise source. Noise levels from lightly traveled roads typically attenuate at a rate of about 4.5 dBA per doubling of distance. Noise levels from heavily traveled roads typically attenuate at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures. Generally, a single row of buildings between the receptor and the noise source can reduces noise levels by about 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 10 dBA. (FTA, pp. 2-10, 6-6.) The manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of approximately 20 to 25 dBA with closed windows. (FTA, p. 3-10.)

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

The time period in which noise occurs is also important since nighttime noise tends to disturb people more than daytime noise. Community noise is usually measured using the Day-Night Average Level (L_{dn}), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. (Caltrans TeNS, p. 2-48.) The L_{dn} and CNEL typically do not differ by more than 1 dBA. (Caltrans TeNS, p. 2-53.) In practice, CNEL and L_{dn} are often used interchangeably.

Vibration

Vibration is sound radiated through the ground. The rumbling sound caused by the vibration of room surfaces is called groundborne noise. The ground motion caused by vibration is measured as particle velocity in inches per second and, in the U.S., is referenced as vibration decibels (VdB).

The background vibration velocity level in residential areas is usually around 50 VdB. The vibration velocity level threshold of perception for humans is approximately 65 VdB. According to the Federal Transit Administration *Transit Noise and Vibration Impact Assessment*, a vibration velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels for many people. Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or the slamming of doors. Typical outdoor sources of perceptible groundborne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the groundborne vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. (FTA, p. 7-5.)

The general human response to different levels of groundborne vibration velocity levels is described in **Table 5.12-A – Human Response to Different Levels of Groundborne Vibration**.

Table 5.12-A – Human Response to Different Levels of Groundborne Vibration

Vibration Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception for many humans.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find transit vibration at this level annoying.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.

Source: FTA, p. 7-8, Table 7.1

Overview of the Existing Ambient Noise Environment

Noise sources in the Planning Area fall into five basic categories: freeways, aircraft over flights, traffic from local streets, noise from railroad operations, and stationary sources. Ambient noise in the City is dominated by transportation-related noise, mainly from Interstate 10 (I-10) and State Route 60 (SR-60). (ECR, p. 116, Beaumont 2040 Plan, pp. 254-255.) These noise sources are described below, as well as any potentially significant sources of vibration.

Ambient Noise Monitoring and Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each land use type. The Beaumont 2040 Plan identifies noise-sensitive land uses as residential dwellings, hotels, hospitals, nursing homes, educational facilities, libraries, and biological open space. Golf courses, recreational areas, and parks can also be sensitive to noise disturbances. These uses are considered sensitive because the presence of excessive noise may interrupt normal activities typically associated with the use. (Beaumont 2040 Plan, p. 254.) Sensitive noise receptors are located throughout the City, as shown in **Figure 5.12-1 – Community Noise Survey Locations and Sensitive Receptors**. These noise-sensitive receptors may also be sensitive to high levels of ground-borne noise and vibration, but are not generally located in close proximity to the railroad, which is the only area in Beaumont where long-term ground-borne noise and vibration may rise to this level of significance.

Motor vehicle and train traffic are the predominant source of ambient noise in the Planning Area. Motor vehicle noise is of concern due to the high number of individual events that create sustained noise levels. As such, ambient noise levels would be expected to be highest during daytime and rush hour, unless congestion substantially slows vehicle speeds. (ECR, p. 119.) Sensitive noise receptors such as residential neighborhoods, hospitals, recreational areas, and schools are located throughout the Planning Area and are exposed to varying ambient noise levels based on proximity to high volume roadways, the railroad, and commercial or industrial operations.

Remainder of page intentionally left blank

Page intentionally left blank

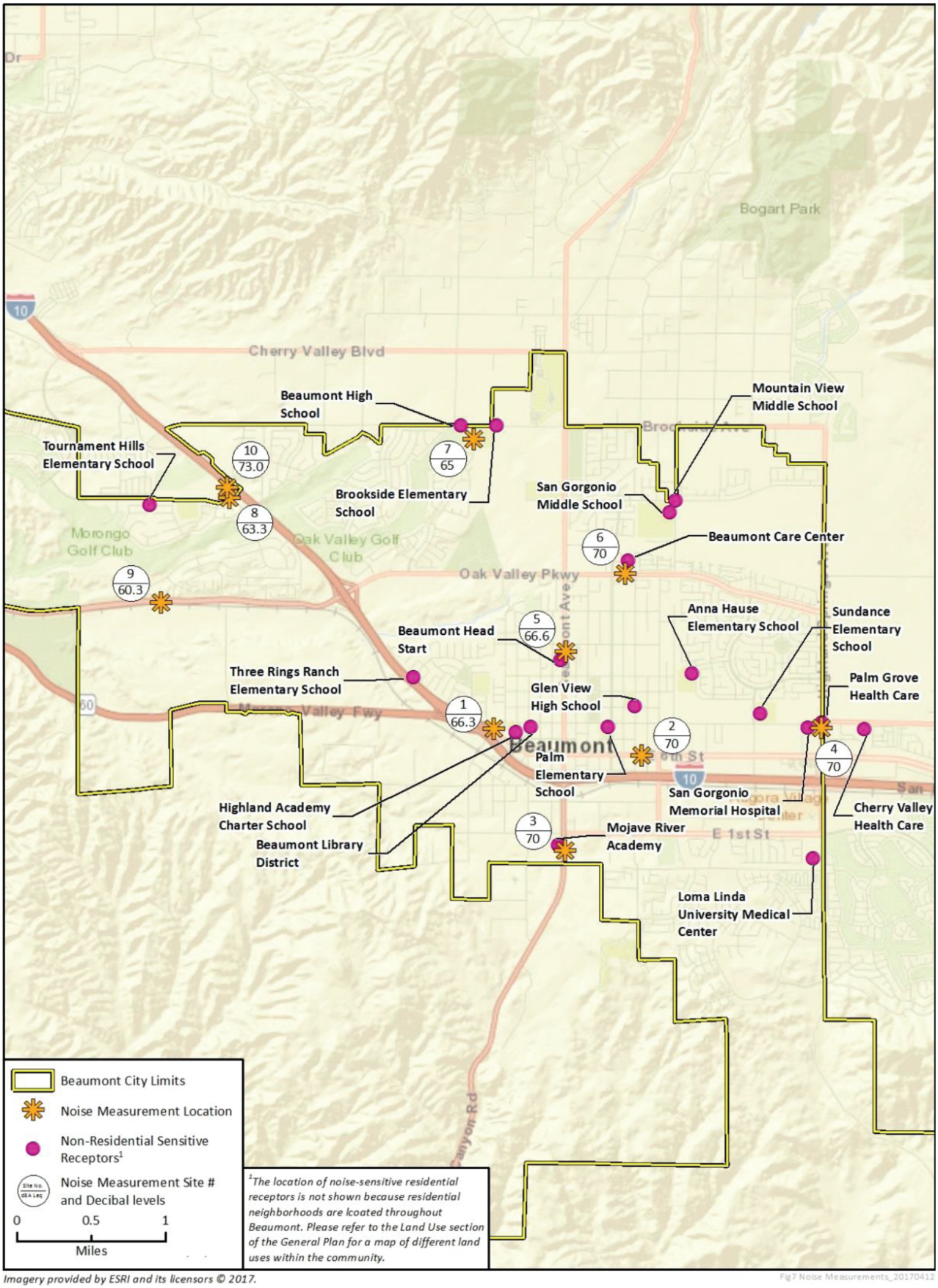


Figure 5.12-1- Community Noise Survey

City of Beaumont General Plan Update

Page intentionally left blank

In order to characterize current ambient noise levels in Beaumont, a Community Noise Survey was carried out for the *Existing Conditions Report* by Rincon Consultants. Ten 15-minute noise measurements were recorded during afternoon peak traffic hours, between 3:35 p.m. and 6:15 p.m. on April 12, 2017, using an ANSI Type II integrating sound level meter.[2] The locations for these measurements were chosen based on proximity to roadways, developed uses, and noise sensitive receptors, during PM peak traffic hours, in order to show peak noise levels from these transportation noise sources. **Figure 5.12-1 – Community Noise Survey Locations and Sensitive Receptors** shows these noise measurement locations and nearby noise sensitive receptors. **Table 5.12-B – Project Vicinity Noise Monitoring Results** lists the ambient noise levels measured at these locations, along with other information about each measurement.

The results of the Community Noise Survey demonstrate that, as expected, noise levels are highest near high-volume roadways such as I-10 (73 dBA, Location 10), SR-79 (70 dBA, Location 3), 6th Street (70 dBA, Location 2), and Highland Springs Avenue (70 dBA, Location 4). Noise levels were lowest near lower-volume roadways such as Oak Valley Parkway (60.3 dBA, Location 9), Champions Drive (63.3 dBA, Location 8), and Oak View Drive (65 dBA, Location 7).[3] These Noise Survey results are compared to the results of roadway traffic noise contour modeling, described under the subheading **Vehicular Traffic Noise** below.

Table 5.12-B – Project Vicinity Noise Monitoring Results

Location Number[(a)]	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)[(b)]	L_{min} (dBA)	L_{max} (dBA)
1	NW corner of W 6th St & Veile Ave, near residential, across street from church	4:20 p.m. – 4:35 p.m.	140 ft from centerline of 6th St	66.3	60.6	74.2
2	1055 E 6th St, Pioneer Mobile Village	5:53 p.m. – 6:09 p.m.	40 ft from centerline of E 6th St	70.0	52.8	91.0
3	East side of Hwy 79, South of 1st St, across from Mojave River Academy	5:10 p.m. – 5:25 p.m.	30 ft from centerline of Beaumont Ave/Hwy79	70.0	54.5	91.3
4	West side of Highland Springs Ave, between 6th & 8th St, across from San Gorgonio Memorial Hospital	5:23 p.m. – 5:38 p.m.	30 ft from centerline of Highland Springs Ave	70.0	53.6	79.9
5	Beaumont Ave directly across from Beaumont Head Start	5:49 p.m. – 6:04 p.m.	30 ft from centerline of Beaumont Ave	66.6	44.4	84.8
6	In front of church at 960 Oak Valley Pkwy	4:54 p.m. – 5:09 p.m.	30 ft from centerline of Oak Valley Pkwy	70.0	49.1	83.8

[2] Noise measurement data is in Technical Appendix B of the *Existing Conditions Report*, which is included as Appendix B of this Draft PEIR.

[3] Locations as shown on **Figure 5.12-1– Community Noise Locations and Sensitive Receptors**.

Table 5.12-B – Project Vicinity Noise Monitoring Results

Location Number[a]	Measurement Location	Sample Times	Approximate Distance to Primary Noise Source	L_{eq} (dBA)[b]	L_{min} (dBA)	L_{max} (dBA)
7	Oak View Dr, across from Brookside Elementary School	4:24 p.m. – 4:39 p.m.	40 ft from centerline of Oak View Dr	65.0	37.4	81.1
8	Champions Dr, by Desert Lawn Dr	3:37 p.m. – 3:52 p.m.	40 ft from median of Champions Dr	63.3	55.8	83.8
9	South side of Oak Valley Pkwy, between Apron Ln & Linksman Dr	3:37 p.m. – 3:52 p.m.	30 ft from centerline of Oak Valley Rd	60.3	34.5	78.4
10	Desert Lawn Dr, by Champions Dr	3:57 p.m. – 4:12 p.m.	130 ft from I-10 median	73.0	66.3	84.9

Notes:

(a) Location shown on **Figure 5.12-1**.

(b) The equivalent noise level (L_{eq}) is defined as the single steady A-weighted level equivalent to the same amount of energy contained in the actual fluctuating levels over a period of time (i.e., the average noise level). For this measurement the L_{eq} was over a 15-minute period ($L_{eq}15$]).

The results of the Community Noise Survey demonstrate that, as expected, noise levels are highest near high-volume roadways such as I-10 (73 dBA, Location 10), SR-79 (70 dBA, Location 3), 6th Street (70 dBA, Location 2), and Highland Springs Avenue (70 dBA, Location 4). Noise levels were lowest near lower-volume roadways such as Oak Valley Parkway (60.3 dBA, Location 9), Champions Drive (63.3 dBA, Location 8), and Oak View Drive (65 dBA, Location 7).[4] These Noise Survey results are compared to the results of roadway traffic noise contour modeling, described under the subheading **Vehicular Traffic Noise** below.

Vehicular Traffic Noise

The predominant noise source in Beaumont, as in most communities, is motor vehicles. The roadway system in the Planning Area includes a range of facilities: regional freeways, major highways, and other arterial, collector, and local streets. Regional connectivity to the Planning Area is provided by I-10, SR-60, and State Route 79 (SR-79). Major roadways within Beaumont include Potrero Boulevard, 6th Street, Oak Valley Parkway/14th Street, Beaumont Avenue, Highland Springs Avenue, and Brookside Avenue. Higher volume roadways within the Planning Area include Beaumont Avenue/SR-79 (30,000 average daily vehicle trips (ADT) on Beaumont Avenue/SR-79 south of 1st Street, 31,000 ADT on Beaumont Avenue/SR-79 south of California Avenue, and 28,000 ADT on Beaumont Avenue/SR-79 south of 4th Street); Highland Springs Avenue (25,760 ADT between the I-10 eastbound ramps and 1st Street, 23,810 ADT between 5th Street and 6th Street, 16,511 ADT north of Oak Valley Parkway, and 15,241 ADT south of Oak Valley Parkway), and 6th Street (17,150 ADT east of Veile Avenue). (Fehr and Peers) Traffic volumes are even higher on the freeways that pass through the Planning Area, with SR-60 west of I-10 carrying 59,500 ADT and I-10 carrying 103,700 ADT west of SR-60, 135,700 ADT between SR-60 and

[4] Locations as shown on **Figure 5.12-1– Community Noise Locations and Sensitive Receptors**.

SR-79, 139,300 ADT between SR-79 and Pennsylvania Avenue, and 146,900 ADT between Pennsylvania Avenue and Highland Springs Avenue.

Existing roadway noise levels were quantified using the United States Department of Housing and Urban Development (HUD) Day/Night Noise Level (DNL) Calculator, based on ADT data and railroad data obtained from Amtrak, California Department of Transportation (Caltrans), the Federal Railroad Administration, and a Draft Transportation Impact Analysis for the proposed project completed by Fehr & Peers.[5] (Amtrak 2018, Caltrans 2017a, Caltrans 2017b, Federal Railroad Administration 2018, Fehr & Peers 2020.) The HUD DNL Calculator noise level estimates are based on traffic volume, vehicle mix, and vehicle speed to estimate roadway noise levels in CNEL and generate roadway noise contours. Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map represent lines of equal elevation. The 60 dBA CNEL roadway contour was calculated using the HUD DNL Calculator for each modeled roadway and an attenuation rate of 4.5 dBA per doubling of distance was used to extrapolate the 65 dBA, 70 dBA, and 75 dBA CNEL noise contours. Roadway noise level estimates do not account for intervening barriers or topography that may shield individual receptors from the noise source. Therefore, the noise contours depicted in this section represent a reasonable, conservative worst-case estimate of noise levels and do not represent a specific estimate of sound levels at any particular location in the City.

The results of this noise contour modeling are depicted in **Figure 5.12-2 – Existing Noise Contours**, a map of existing noise contours along the roadways and railways that are the major source of noise in Beaumont. As show on **Figure 5.12-2**, the I-10 (which carries the most traffic through the area) and the Union Pacific Railroad (which also passes through the City) are the greatest contributors to noise within the City. Other roadways in and around Beaumont that carry sufficient traffic to produce audible noise at a substantial distance include SR-60, SR-79, Beaumont Avenue, and Oak Valley Parkway.

The contour map also shows that noise levels exceed 60 dBA CNEL along all modeled roadways and generally reflect the measured noise levels shown in **Table 5.12-B – Project Vicinity Noise Monitoring Results** and **Figure 5.12-1 – Community Noise Survey Locations and Sensitive Receptors**.

In addition to collecting ambient noise measurements (refer to **Table 5.12-B**), and preparing noise contour maps, Rincon Consultants also calculated existing noise levels along existing roadways, which are presented in **Table 5.12-C – Calculated Existing Noise Levels Along Existing Roadways**, below.

Table 5.12-C – Calculated Existing Noise Levels Along Existing Roadways

Roadway Segment	ADT	Noise Level (dBA, CNEL)
1st St (from Pennsylvania Ave to Highland Spring Ave)	12,901	69.0

[5] Subsequent to preparation of the noise analysis, the Project's Transportation Impact Assessment was revised to include a new roadway connection along 2nd Street to connect Highland Springs Road and Pennsylvania. Fehr & Pees completed an assessment to ascertain how that change would affect the transportation network. Fehr & Peers concluded that other than a reduction in daily trips along 1st Street near Pennsylvania Avenue, the change in the remainder of the volumes identified in the 2019 Draft Transportation Impact Analysis is negligible. (Refer to Appendix F.2) Therefore, no revisions to the noise analysis completed by Rincon Consultants is required.

Table 5.12-C – Calculated Existing Noise Levels Along Existing Roadways

Roadway Segment	ADT	Noise Level (dBA, CNEL)
6th St from east of Veile Ave	17,150	69.2
6th St from east of Beaumont Ave	14,059	68.4
6th St from east of Pennsylvania Ave	11,352	67.3
Beaumont Ave from north of Oak Valley Parkway	16,511	70.1
Beaumont Ave from 8th St to 12th St	12,081	68.7
Beaumont Ave from 5th St to 6th St	11,093	67.3
Beaumont Ave from south of 4th St	28,000	73.0
Beaumont Ave/SR-79 from south of 1st St	30,000	73.2
Highland Springs Ave from 5th St to 6th St	23,810	71.1
Highland Springs Ave from I-10 eastbound ramps to 1st St	25,760	71.5
Highland Springs Ave from south of Oak Valley Parkway	15,241	70.9
Oak Valley Parkway from east of Potrero Blvd	5,379	66.4
Oak Valley Parkway from west of Potrero Blvd	2,546	63.2
Oak Valley Parkway from I-10 westbound ramps to Oak View Dr	16,600	70.7
Oak Valley Parkway from west of Starlight Ave	8,471	66.6
Pennsylvania Ave from 6th St to I-10 westbound ramps	14,009	68.9
Pennsylvania Ave from I-10 eastbound ramps to 3rd St	10,628	67.7
Veile Ave from north of 4th St	2,870	61.9
Xenia Avenue from north of 6th St	2,487	61.3
Beaumont Avenue/SR-79 from south of California Ave	31,000	76.3
SR-60 Freeway from City's western boundary to I-10	59,500	73.4
I-10 Freeway from City's northwestern boundary to SR-60 West	103,700	78.7
I-10 Freeway from SR-60 to SR-79 South	135,700	79.9
I-10 Freeway from SR-79 South to Pennsylvania Ave	139,300	80.0
I-10 Freeway from Pennsylvania Ave to Highland Springs Ave	146,900	80.2

Table 5.12-C – Calculated Existing Noise Levels Along Existing Roadways

Roadway Segment	ADT	Noise Level (dBA, CNEL)
Union Pacific Railroad[1]	35	79.0

Notes:

[1] Union Pacific Railroad was assumed to have an average of 35 trips per day with 50 railway cars per trip; a night fraction of 50 percent; two engines per train; and an average speed of 30 miles per hour (default).

Source: Amtrak 2018, Caltrans 2017a, Caltrans 2017b, Federal Railroad Administration 2018, Fehr & Peers 2020, HUD 2019.

Aircraft Noise

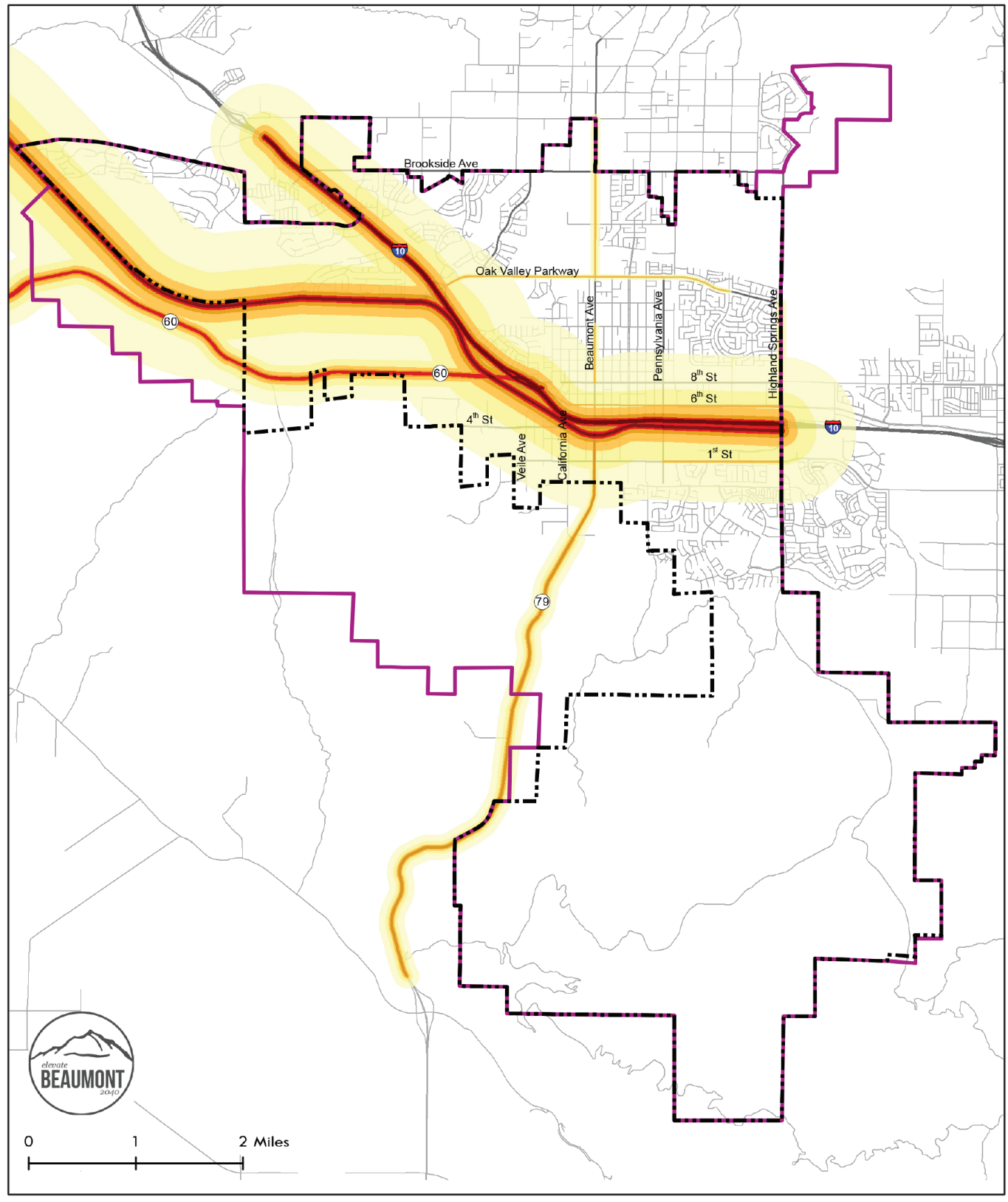
There are no airports in the City of Beaumont. However, the Banning Municipal Airport is located approximately five (5) miles east of the Planning Area eastern boundary. Therefore, aircraft noise may intermittently affect noise-sensitive receptors in the Planning Area, but noise levels will be outside of all identified 55 dBA CNEL, 60 dBA CNEL, and 65 dBA CNEL airport noise contours. (Banning 2007, Figure 5-2.)

Railway Noise

Freight rail service along the Union Pacific Railroad lines located south of and parallel to Oak Valley Parkway and I-10 are also responsible for generating substantial noise levels in the Planning Area (see **Figure 5.12-2 – Existing Noise Contours**). According to the Federal Railroad Administration, the Union Pacific Railroad carries up to 17 daytime trains (6 a.m. to 6 p.m.) and 17 nighttime trains (6 p.m. to 6 a.m.) on a daily basis. (Federal Railroad Administration 2018b.) The railroad is also a potential source of ground-borne vibration and noise.

Remainder of page intentionally left blank

Page intentionally left blank



City of Beaumont General Plan Update, 2018 & Riverside County, 2017.

Figure 5.12-2- Existing Noise Contours

City of Beaumont General Plan Update

ALBERT A. WEBB ASSOCIATES

Page intentionally left blank

Construction, Stationary, and Operational Noise Sources

Other noise generators in Beaumont include industrial operations, construction activities, special event noise, commercial activities that include live music, and lawnmowers and leaf blowers, which can create substantial noise problems. Loading and materials transfer areas, outdoor materials warehousing operations, and other acoustically unscreened operations may also create issues of noise impact and use compatibility. Certain types of construction activities, such as pile driving, can also be temporary but significant sources of ground-borne vibration. (ECR, pp. 116–117; Beaumont 2040 Plan, p. 10-5.)

The operation of mechanical equipment is another important source of potentially significant noise. This category includes refrigerator units, chillers, and heating/air conditioner equipment associated with commercial centers. Noise from roof-mounted equipment is especially effective at penetrating into bordering neighborhoods and impacting sensitive receptors. The continual drone associated with fans and compressors can degrade the enjoyment of the outdoors and negatively affect the quality of life for nearby residents. (ECR, p. 117. Beaumont 2040 Plan, p. 10-5.)

5.12.2 Related Regulations

Federal Regulations

Federal Transit Administration Vibration Impact Criteria

The Federal Transit Administration (FTA) does not have regulatory authority over activities in Beaumont. However, the Vibration Impact Criteria thresholds adopted by the FTA are designed to identify acceptable noise levels for noise-sensitive buildings, residences, and institutional land uses near railroads. The thresholds that apply to residences and buildings where people normally sleep (e.g., nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (less than 30 vibration events of the same source per day). (FTA, p. 8-3, Table 8-1.)

State Regulations

California Government Code § 65302

The California Government Code encourages each local government entity to implement a noise element as part of its general plan. In addition, the California Governor's Office of Planning and Research (OPR) has developed Guidelines for the Preparation and Content of Noise Element of the General Plan (2017). The guidelines include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure.

California Noise Control Act of 1973

California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act, find that excessive noise is a serious hazard to public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The act also finds that there is a continuous and increasing bombardment of noise in urban, suburban, and rural areas. The act declares that the State of California has a responsibility to protect the health and welfare of its citizens through the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians that is free from noise that jeopardizes their health or welfare.

California Code of Regulations, Title 24 (California Noise Insulation Standards)

The state's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are

applied to new construction in the state for the purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL.

California Vehicle Code

A number of California vehicle noise regulations can be enforced by local authorities, as well as the California Highway Patrol. These include Sections 23130, 23130.5, 27150 and 38275 of the California Vehicle Code (CVC), as well as excessive speed laws, which may also be applied to curtail traffic noise.

California Vehicle Code (CVC Sections 23130 and 23130.5 establish maximum noise emission limits for the operation of all motor vehicles at any time under any conditions of grade, load, acceleration or deceleration.

CVC Section 27150 requires motor vehicles to be equipped with an adequate muffler to prevent excessive noise.

CVC Section 38275 requires off-highway motor vehicles to be equipped with an adequate muffler to prevent excessive noise.

Local Regulations

City of Beaumont Municipal Code

The following chapter of the Beaumont Municipal Code addresses noise standards:

Title 9 – Public Peace, Morals and Welfare, Chapter 9.02 – Noise Control

Section 9.02.010 of the Beaumont Municipal Code (BMC) states the purpose of Chapter 9.02 is to establish criteria and standards for the regulation of noise levels within the City and to implement the noise provisions contained in the City's General Plan.

BMC Section 9.02.050 establishes base ambient noise levels (BANL) for outdoor noise in residential zones of 55 dBA from 7:00 a.m. to 10:00 p.m., and 45 dBA from 10:00 p.m. to 7:00 a.m. The standard used for maximum outdoor noise levels in residential areas in California is a CNEL of 65 dBA. This section of the BMC also establishes a BANL of 75 dBA from 7:00 a.m. to 10:00 p.m., and 50 dBA from 10:00 p.m. to 7:00 a.m. in industrial and commercial zones.[6]

BMC Section 9.02.070 establishes the maximum exterior residential noise levels set forth below in **Table 5.12-D.**

[6] Actual decibel measurements exceeding the levels set forth above at the times and within the shall be used as the "base ambient noise level" for purposes of Title BMC Chapter 9.02. referred to in this Chapter. Otherwise, no ambient noise shall be deemed to be less than the above specified levels.

Table 5.12-D – Beaumont Municipal Code
Maximum Exterior Residential Noise Levels

Noise Level Exceeded	Maximum Duration Period
5 dBA above BANL[(a)]	15 minutes any hour
10 dBA above BANL[(a)]	5 minutes any hour
15 dBA above BANL[(a)]	1 minute any hour
20 dBA above BANL[(a)]	Not permitted

Source: Beaumont Municipal code, Section 9.02.070

Notes:
[(a)] BANL as defined in BMC Section 9.02.050

BMC Section 9.02-.080A establishes the maximum interior nose levels for residences, schools, and hospitals set forth below in **Table 5.12-E.**

Table 5.12-E – Beaumont Municipal Code
Interior Base Ambient Noise Levels[(a)]

Decibels	Time	Land Use
35 dBA	10:00 p.m. – 7:00 a.m.	Residential
40 dBA	7:00 a.m. – 10:00 p.m.	Residential
45 dBA	7:00 a.m. – 10:00 p.m. while school is in session	School
45 dBA	Anytime	Hospital

Source: Beaumont Municipal Code Section 9.02.080A

Notes:
[(a)] BANL as defined in BMC Section 9.02.080

Section 5.02.080B of the BMC states that no person shall operate or cause to be operated any source of sound which causes the noise level, when measured in another dwelling unit, school, or hospital to exceed the levels set forth below in **Table 5.12-F**.

Table 5.12-F – Beaumont Municipal Code
Maximum Interior Noise Levels
for Residences, Schools, and Hospitals

Noise Level Exceeded	Maximum Duration Period
5 dBA above interior BANL[(a)]	5 minutes any hour
10 dBA above interior BANL[(a)]	1 minutes any hour
Over 10 dBA above interior BANL[(a)]	Not permitted

Source: Beaumont Municipal Code, Section 9.02.080B

Notes:
[a] BANL as defined in BMC Section 9.02.080A. According to BMC Section 9.02.080C, If the measured interior ambient noise level exceeds that permissible within Section 9.02.080A and 9.02.080B, the allowable noise exposure standard shall be increased in five decibel increments in each category as appropriate to reflect the interior ambient noise level. In the event the interior ambient noise level exceeds the third noise limit category, the maximum allowable interior noise level under said category shall be increased to reflect the maximum interior ambient noise level.

BMC Chapter 9.02.110F states that no construction activities may occur within one-quarter mile from an occupied residential dwelling between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September, and between the hours of 6:00 p.m. and 7:00 a.m. between the months of October through May, unless such activities are permitted under written consent of the City's building official.

The regulations and policies discussed above are intended to protect the community from excessive noise and vibration to ensure quality of life for residents and workers in the City. The City is responsible for continued enforcement of federal, state, and local regulations pertaining to noise generation and impacts, and for implementing Safety Element policies and applicable regulations of the BMC to ensure continued protection of the community from excessive noise and vibration in future growth and development.

5.12.3 Beaumont 2040 Plan

The Beaumont 2040 Plan goals, policies, and implementation actions that reduce potential noise impacts include:

Beaumont 2040 Plan, Chapter 3 – Land Use and Community Design

Goal 3.4: A City that maintains and expands its commercial, industrial and other employment-generating land uses.

Policy 3.4.8 Where industrial uses are near existing and planned residential development, require that industrial projects be designed to limit the impact of truck traffic, air and noise pollution on sensitive receptors.

Beaumont 2040 Plan, Chapter 10 – Noise

Goal 10.1: A City where noise exposure is minimized for those living, working, and visiting the community

Policy 10.1.1 Protect public health and welfare by eliminating existing noise problems and by preventing significant degradation of the future acoustic environment.

Policy 10.1.2 ` Adopt, maintain, and enforce planning guidelines that establish the acceptable noise standards identified in Table 10.1 and 10.2.

Policy 10.1.2 Protect noise-sensitive uses, such as residences, schools, health care facilities, hotels, libraries, parks and places of worship, from excessive noise levels through land use adjacency, building design, and noise ordinance enforcement.

Policy 10-1.4 Incorporate noise considerations into land use planning decisions. Require the inclusion of noise mitigation measures, as may be necessary to meet standards, in the design of new development projects in the City.

Policy 10.1.5 Require projects involving new development or modifications to existing development to implement measures, where necessary, to reduce noise levels to at least the normally compatible range. Design measures should focus on architectural features and building design and construction, rather than site design features, such as excessive setbacks, berms, and sound walls, to maintain compatibility with adjacent and surrounding uses.

Policy 10.1.6 Encourage reduction of stationary noise impacts from commercial and industrial land uses, activities, events, and businesses on noise-sensitive land uses.

Policy 10.1.7 Limit delivery or service hours for stores and businesses with loading areas, docks, or trash bins that front, side, border, or gain access on driveways next to residential and other noise sensitive areas, such as residences, schools, hospitals, religious meeting spaces, and recreation areas.

Policy 10.1.8 Promote the effective enforcement of Federal, State, and City noise standards by all appropriate City departments.

Goal 10.2: A City with minimal mobile source-generated noise levels.

Policy 10.2.1 Work with Caltrans and the Federal Highway Administration to reduce noise impacts to sensitive receptors along I-10, SR-60 and SR-70.

Policy 10.2.2: Regulate traffic flow to enforce speed limits to reduce traffic noise. Periodically evaluate and enforce established truck and bus routes to avoid noise impacts on sensitive receptors.

Policy 10.2.3: Prohibit truck routes through neighborhoods with sensitive receptors, where feasible.

Policy 10.2.4: Reduce the impacts of roadway noise on noise-sensitive receptors where roadway noise exceeds the normally compatible range.

Policy 10.2.5: Require the use of traffic calming measures such as reduced speed limits or roadway design features to reduce noise levels where roadway noise exceeds the normally compatible range.

Policy 10.2.6 Encourage the use of noise-reducing paving materials, such as open-grade or rubberized asphalt, for public and private road surfacing projects in proximity to existing and proposed residential land uses.

Policy 10.2.7: Consider the noise effects of City purchases and or leases of vehicles and other noise generating equipment. Take reasonable and feasible actions to reduce the noise generated from City-owned or leased vehicles and equipment, where possible.

Policy 10.2.8 Ensure that noise and vibration from existing rail lines is considered during the land use planning and site development processes.

Policy 10.2.9 If Metrolink or other passenger rail service is initiated, work with the rail service providers to address noise and vibration considerations adjacent to the rail corridor.

Implementation N1 Update the City's Noise Ordinance. Provide development standards and project design guidelines that include a variety of mitigation measures that can be applied to meet City standards for projects exceeding the City's noise standards.

Implementation N2 Requirement for Acoustical Studies. Amend development application requirements so that projects that could result in noise environments above normally acceptable noise ranges or all new development complete acoustical studies prepared by qualified professionals to ensure that the noise levels are at acceptable levels, per the Municipal Code.

Implementation N3 Project Design Guidelines. Integrate project design guidelines that integrate features into new developments that minimize impacts associated with the operation of air conditioning and heating equipment, on-site traffic, and use of parking, loading, and trash storage facilities.

Implementation N4 Freeway Noise Reduction. Work collaboratively with Caltrans and the Federal Highway Administration to install measures that mitigate noise impacts along freeways.

Implementation N5 Traffic Noise Assessment. Periodically review and assess the sources of noise and vibration, strategies for mitigating impacts, and specific actions that can be applied.

Implementation N6 Construction Noise Limits. Review the hours of allowed construction activity to ensure they effectively lead to compliance within the limits (maximum noise levels, hours and days of allowed activity) established in the City's noise regulations.

Implementation N7 Stationary Equipment. Enforce requirements that all stationary construction equipment shall be operated with closed engine doors, equipped with properly operating and maintained mufflers, and placed so that emitted noise is directed away from the nearest sensitive receptors.

Implementation N8 Equipment Staging Areas. Require that equipment staging shall be in areas that will create the greatest distance feasible between construction-related noise sources and noise-sensitive receptors.

Implementation N9 Additional Noise Attenuation Techniques. Require that temporary sound barriers are installed and maintained between the construction site and the sensitive receptors during the clearing, earth moving, grading, and foundation/conditioning phases of construction.

Temporary sound barriers shall consist of sound blankets affixed to construction fencing along all sides of the construction site boundary facing potentially sensitive receptors.

Implementation N10 Vehicle and Equipment Idling. Establish requirements that construction vehicles and equipment are not left idling for longer than five minutes when not in use.

Beaumont 2040 Plan, Chapter 11 – Downtown Area Plan

Goal 11.7: Design buildings that are at a human-scale and create quality environments.

Policy 11.7.6 Ensure that loading docks and service entrances are screened from the right-of-way and adjacent properties; are accessed via alleys, side streets, or service access driveways; and are internal to the building envelope and equipped with closable doors to improve the aesthetics of the public realm and limit noise. .

5.12.4 Thresholds of Significance

The City has not established local CEQA significance thresholds as described in Section 15064.7 of the *CEQA Guidelines*. Therefore, significance determinations utilized in this section are from Appendix G of the *CEQA Guidelines*. A significant impact will occur if implementation of the proposed Project would result in:

- (Threshold A) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- (Threshold B) Generation of excessive groundborne vibration or groundborne noise levels; and/or
- (Threshold C) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

This analysis uses the FTA's Transit Noise and Vibration Impact Assessment (FTA 2006), thresholds to determine potential excessive groundborne vibration or noise generated by future development with implementation of the proposed Project. The FTA sets the following thresholds for vibration:

- 65 VdB where low ambient vibration is essential for interior operations, such as hospitals and recording studios;
- 72 VdB for residences and buildings where people normally sleep, including hotels;
- 75 VdB for institutional land uses with primary daytime use, such as churches or schools; and
- 100 VdB for physical damage to buildings.

Traffic noise modeling was conducted by Rincon Consultants using the HUD DNL Calculator to determine potential increases in roadway noise generated by development facilitated by the proposed Project. Noise contours were created for the purposes of defining a "significant" increase in traffic noise per the FTA recommendations, which are summarized in **Table 5.12-G – Significance of Changes in Operational Roadway Noise Exposure**.

Table 5.12-G – Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
45-49	7
50-54	5

Table 5.12-G – Significance of Changes in Operational Roadway Noise Exposure

Existing Noise Exposure (dBA Ldn or Leq)	Allowable Noise Exposure Increase (dBA Ldn or Leq)
55-59	3
60-64	2
65-69	1
69-74	1
75+	0

Source: FTA 2006

Under the FTA criteria, the allowable noise exposure increase is reduced with increasing ambient existing noise exposure, such that higher ambient noise levels have a lower allowable noise exposure increase.

5.12.5 Environmental Impacts before Mitigation

At the programmatic level addressed in this Draft PEIR, a variety of regulatory measures, including compliance with and implementation of Federal, State, Regional, and Local regulations as well as compliance with the proposed Beaumont 2040 Plan goals, policies, and implementation are intended to reduce potential noise impacts to less than significant. (See full discussion on environmental impacts below.) In addition, all future implementing projects would be subject to further CEQA review focusing on the specifics of the proposed project, which cannot be foreseen at this time since no specific development proposals are included as part of the Beaumont 2040 Plan.

For purposes of the analyses herein, the discussion includes the City limits as well as the City's SOI (collectively referred to as "Planning Area"). Future development of properties within the City's SOI that are annexed to the City would be subject to the City's entitlement process while future development within the City's SOI that is under the County's land use control would be subject to the County's entitlement requirements.

Threshold A: ***Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies***

Development associated with future land uses consistent with the Beaumont 2040 Plan and Revised Zoning Map could result in substantial temporary increases in ambient noise levels during construction and permanent increases in ambient noise levels during operation. Permanent and temporary noise increases are discussed separately.

Permanent Noise Sources

As previously discussed under the subheading **Overview of the Existing Ambient Noise Environment**, noise levels are generally highest along or adjacent to major roadways and railways. Because roadway and railway traffic are the greatest noise sources in the City, noise-sensitive receptors located adjacent to high-volume roadways and railways would be exposed to the greatest noise increases generated by new development consistent with the Beaumont 2040 Plan. Potential sources of roadway noise exposure associated with growth and development under the proposed Project include increased traffic on the I-10

freeway and arterial roadways, such as Oak Valley Parkway, Veile Avenue, 6th Street, and Beaumont Avenue. As such, existing noise-sensitive receptors would be exposed to increased traffic noise. The analysis contained within this section, therefore, relies primarily upon analysis of the location of current and potential future noise-sensitive receptors in relation to existing and projected future roadway noise contours.

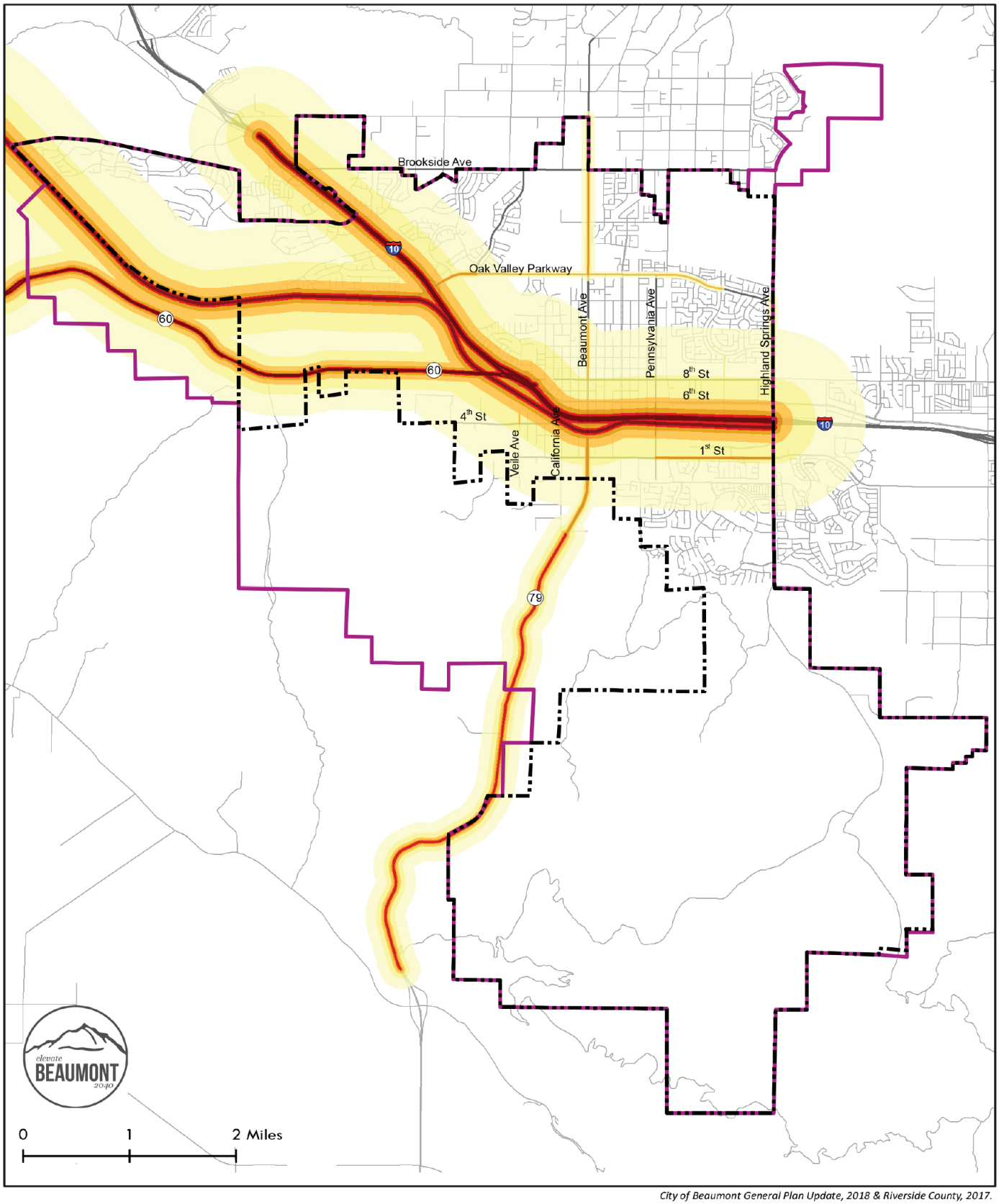
As discussed under the subheading **Overview of the Existing Ambient Noise Environment**, existing roadway and railway noise levels were quantified by Rincon Consultants using the HUD DNL Calculator based on ADT and railroad data from Amtrak, Caltrans, the Federal Railroad Administration, and a Draft Transportation Impact Analysis for the proposed Project completed by Fehr & Peers.[7] The data was used to generate roadway noise contours for studied roadway and railway segments. **Figure 5.12-2 – Existing Noise Contours** shows a map of existing traffic noise contours along major roadways and railways in the City. The location of future roadway noise contours was determined by using the ADT traffic volumes for the future-year 2040 scenario, which would include buildout under the proposed Project. Roadway and railway noise level estimates do not account for intervening barriers or topography that may shield individual receptors from the noise source. Therefore, the noise contours depicted in this section represent a reasonable, conservative worst-case estimate of noise levels and do not represent a specific estimate of sound levels at any particular location in the City. **Figure 5.12-3 – Future Noise Contours – 2040** shows a map of future traffic and railway noise contours, which shows marginal roadway and railway increases when compared to existing traffic and railway noise contours shown in **Figure 5.12-2**. As shown on **Figure 5.12-3**, noise levels along all modeled roadways and railways are expected to exceed 60 dBA CNEL with peak noise levels reaching up to 75 dBA CNEL along various segments of Oak Valley Parkway, Beaumont Avenue, and 1st Street.

Along SR-60, the Union Pacific Railway, and the I-10 freeway, roadway noise levels are anticipated to reach 85 dBA CNEL, and along SR-79 freeway, roadway noise levels are anticipated to reach 80 dBA CNEL.

Remainder of page intentionally blank.

[7] Subsequent to preparation of the noise analysis, the Project's Transportation Impact Assessment was revised to include a new roadway connection along 2nd Street to connect Highland Springs Road and Pennsylvania. Fehr & Pees completed an assessment to ascertain how that change would affect the transportation network. Fehr & Peers concluded that other than a reduction in daily trips along 1st Street near Pennsylvania Avenue, the change in the remainder of the volumes identified in the 2019 Draft Transportation Impact Analysis is negligible. (Refer to Appendix F.2.) Therefore, no revisions to the noise analysis completed by Rincon Consultants is required.

Page intentionally left blank



City of Beaumont General Plan Update, 2018 & Riverside County, 2017.

City Boundary
Sphere of Influence

60 dbA
65 dbA
70 dbA
75 dbA
80 dbA
85 dbA

Figure 5.12-3 Future Noise Contours

City of Beaumont General Plan Update

ALBERT A. WEBB ASSOCIATES

Page intentionally left blank

Table 5.12-H – Comparison of Calculated Existing (2018) and Future (2040) Noise Levels along Major Roadways and Railways (which commences on the following page) provides a quantitative analysis of traffic noise increases for comparison to the thresholds for changes in roadway noise (see **Table 5.12-G – Significance of Changes in Operational Roadway Noise Exposure**). **Table 5.12-H –** includes the 30 roadway and highway segments that would experience the highest traffic volume increases. There are no anticipated changes in the number of railway trips along the Union Pacific Railroad in the future year 2040. In order to provide a valid point of comparison for existing and future noise conditions, CNELs were calculated at a distance of 200 feet from the Union Pacific Railroad, 150 feet from the roadway centerline for the I-10 freeway and SR-60, and 50 feet from the roadway centerline for all other roadways in order to represent noise levels at the railway and roadway edge. Noise farther away from the modeled distances would be lower than noise levels shown in **Table 5.12-H**.

All roadway segments except Highland Springs Avenue from south of Oak Valley Parkway and the Union Pacific Railway could experience a noise level increase exceeding the thresholds described in **Table 5.12-G – Significance of Changes in Operational Roadway Noise Exposure** (2.0 dBA increase when the pre-project noise level exceeds 60 dBA CNEL, 1.0 dBA increase when the pre-project noise level exceeds 65 dBA CNEL, and 0 dBA increase when the pre-project noise level exceeds 75 dBA CNEL). As modeled by Rincon Consultants, the traffic noise impacts at the roadway segments, except Highland Springs Avenue from south of Oak Valley Parkway, would be potentially significant. However, actual noise levels (both existing and future) may be lower in some locations. For example, **Figure 5.12-1 – Community Noise Survey Locations and Sensitive Receptors** shows that the measured noise level at Site 1, on 6th Street and Veile Avenue, in central Beaumont, almost directly adjacent to the I-10 freeway, but at a lower elevation than the freeway, was 66.3 dBA, a lower perceivable sound level than the approximate 71-73 dBA that would be expected without the presence of barriers or intervening topography, according to the noise contour modeling.

Remainder of page intentionally left blank

Page intentionally left blank

Table 5.12-H – Comparison of Calculated Existing (2018) and Future (2040) Noise Levels along Major Roadways and Railways

Roadway Segment	Existing		Future (2040) with General Plan Buildout				
	ADT	Noise Level (dBA, CNEL)	ADT	Noise Level (dBA, CNEL)	Noise Level Increase (dBA)[1]	Threshold[2] (dBA)	Threshold Exceeded?
1st St (from Pennsylvania Ave to Highland Spring Ave)	12,901	69.0	23,800	71.7	+2.7	+1.0	Yes
6th St from east of Veile Ave	17,150	69.2	25,500	70.7	+1.5	+1.0	Yes
6th St from east of Beaumont Ave	14,059	68.4	23,800	70.6	+2.2	+1.0	Yes
6th St from east of Pennsylvania Ave	11,352	67.3	25,100	70.9	+3.6	+1.0	Yes
Beaumont Ave from north of Oak Valley Parkway	16,511	70.1	28,100	72.5	+2.4	+1.0	Yes
Beaumont Ave from 8th St to 12th St	12,081	68.7	19,400	70.9	+2.2	+1.0	Yes
Beaumont Ave from 5th St to 6th St	11,093	67.3	23,700	70.5	+3.2	+1.0	Yes
Beaumont Ave from south of 4th St	28,000	73.0	46,300	75.1	+2.1	+1.0	Yes
Beaumont Ave/SR-79 from south of 1st St	30,000	73.2	40,800	74.6	+1.4	+1.0	Yes
Highland Springs Ave from 5th St to 6th St	23,810	71.1	30,800	72.3	+1.2	+1.0	Yes
Highland Springs Ave from I-10 eastbound ramps to 1st St	25,760	71.5	40,200	73.4	+1.9	+1.0	Yes
Highland Springs Ave from south of Oak Valley Parkway	15,241	70.9	15,900	71.1	+0.2	+1.0	No

Table 5.12-H – Comparison of Calculated Existing (2018) and Future (2040) Noise Levels along Major Roadways and Railways

Roadway Segment	Existing		Future (2040) with General Plan Buildout				
	ADT	Noise Level (dBA, CNEL)	ADT	Noise Level (dBA, CNEL)	Noise Level Increase (dBA)[1]	Threshold[2] (dBA)	Threshold Exceeded?
Oak Valley Parkway from east of Potrero Blvd	5,379	66.4	27,700	73.5	+7.1	+1.0	Yes
Oak Valley Parkway from west of Potrero Blvd	2,546	63.2	9,700	69.0	+5.8	+2.0	Yes
Oak Valley Parkway from I-10 westbound ramps to Oak View Dr	16,600	70.7	33,500	73.7	+3.0	+1.0	Yes
Oak Valley Parkway from west of Starlight Ave	8,471	66.6	12,400	68.4	+1.8	+1.0	Yes
Pennsylvania Ave from 6th St to I-10 westbound ramps	14,009	68.9	22,800	71.0	+2.1	+1.0	Yes
Pennsylvania Ave from I-10 eastbound ramps to 3rd St	10,628	67.7	27,800	71.8	+4.1	+1.0	Yes
Veile Ave from north of 4th St	2,870	61.9	15,300	69.2	+7.3	+2.0	Yes
Xenia Avenue from north of 6th St	2,487	61.3	5,000	64.3	+3.0	+2.0	Yes
Beaumont Avenue/SR-79 from south of California Ave	31,000	76.3	62,900	79.3	+3.0	+0.0	Yes
SR-60 Freeway from City's western boundary to I-10	59,500	73.4	109,800	76.1	+2.7	+1.0	Yes
I-10 Freeway from City's northwestern boundary to SR-60 West	103,700	78.7	156,700	80.5	+1.8	+0.0	Yes

Table 5.12-H – Comparison of Calculated Existing (2018) and Future (2040) Noise Levels along Major Roadways and Railways

Roadway Segment	Existing		Future (2040) with General Plan Buildout				
	ADT	Noise Level (dBA, CNEL)	ADT	Noise Level (dBA, CNEL)	Noise Level Increase (dBA)[1]	Threshold[2] (dBA)	Threshold Exceeded?
I-10 Freeway from SR-60 to SR-79 South	135,700	79.9	222,000	82.0	+2.1	+0.0	Yes
I-10 Freeway from SR-79 South to Pennsylvania Ave	139,300	80.0	220,000	82.0	+2.0	+0.0	Yes
I-10 Freeway from Pennsylvania Ave to Highland Springs Ave	146,900	80.2	234,700	82.2	+2.0	+0.0	Yes
Union Pacific Railroad[2]	35	79.0	35	79.0	+0.0	+0.0	No

[1]. Union Pacific Railroad was assumed to have an average of 35 trips per day with 50 railway cars per trip; a night fraction of 50 percent; two engines per train; and an average speed of 30 miles per hour (default).

Source: Amtrak 2018, Caltrans 2017a, Caltrans 2017b, Federal Railroad Administration 2018, Fehr & Peers 2020, HUD 2019

[2] Based on FTA 2006 standards depicted on Table 5.12-G

Remainder of page intentionally left blank

Page intentionally left blank

Noise levels at new noise-sensitive receptors in the Planning Area would be compared to the City's compatibility standards to determine if additional noise reduction features are necessary. In general, it is easier to ensure proper noise attenuation for new uses, which can be required to incorporate noise-attenuating features into their design before they are built, than it is to ensure proper noise attenuation for existing uses. Noise impacts from new development will be mitigated on a project-level basis through the use of appropriate location-specific design and engineering techniques, including building setbacks, appropriate building siting, sound barriers, and sound attenuating construction techniques. Therefore, the use of such techniques in new development in Beaumont would maintain an acceptable noise environment.

Implementation of Beaumont 2040 Plan Policies 10.1.2, 10.1.3, 10.1.4, 10.1.5, 10.31.8, 10.2.1, 10.2.2, 10.2.3, 10.2.4, 10.2.5, 10.2.6, and 10.2.7 and Implementation actions N2, N3, N5, and N10 would ensure that noise impacts are considered as individual development projects and transportation improvements are proposed; and, if necessary, appropriate, site-specific noise attenuation techniques are incorporated into future development and transportation project designs. As necessary, the City may consider a range of traffic noise attenuation techniques, potentially including the use of traffic calming measures (Policy 10.2.5), sound reducing paving materials (as described in Policy 10.2.6) and, in certain instances, the use of sound barriers. Noise impacts to sensitive receptors along I-10, SR-60, and SR-70 may be reduced by working with Caltrans and the Federal Highway Administration per Policy 10.2.1. With implementation of proposed Project policies and implementation actions, increases in roadway noise at existing noise-sensitive receptors would be reduced to the degree feasible. However, as shown in **Table 5.12-H – Comparison of Calculated existing (2018) and Future 2040 Noise Levels along Major Roadways and Railways**, future noise levels, could still exceed thresholds. Also as depicted in Table 5.12-H, the existing noise levels for sensitive receptors around the studied roadways indicates that the City's noise standard of 55dBA for daytime exterior noise level as well as the State standard of 65dBA for daytime exterior noise levels may be exceeded for existing receptors. Therefore, since the existing conditions already exceed the City and State noise standards, as well as exceeding acceptable noise increase standards from FTA, impacts from permanent noise are considered **significant and unavoidable**.

Temporary Noise Sources

Residences and other noise-sensitive land uses adjacent to potential development would be the most affected by construction noise associated with individual projects facilitated by the proposed Project. Since there are no specific plans or time scales for individual development projects, it is not possible to determine exact noise levels, locations, or time period for construction. However, construction noise would be highest and of the longest duration in those portions of the Planning Area where more future development and redevelopment is anticipated to occur, such as the City's SOI.

Most of the time construction noise impacts result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), when construction occurs in areas immediately adjacent to noise sensitive land uses, or when the duration of construction extends over long periods of time. Major noise-generating construction activities could include demolition activities, site grading and excavation, paving, and landscaping. These activities could occur in areas immediately adjacent to existing noise-sensitive receptors or future receptors developed within the City.

The highest construction noise levels would be generated during grading and excavation, with lowest levels occurring during construction. Large earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 90 to 95 dBA at a distance of 25 feet. **Table 5.12-I – Typical Noise Levels Generated by Construction Equipment** presents the noise levels generated by common types of construction equipment. Typical hourly, average, construction-generated noise levels

are about 85 to 90 dBA when measured at a distance of 25 feet from the site during busy construction periods. These noise levels drop off at a rate of about 6 dBA for each doubling of distance between the noise source and the receptor. In addition, intervening structures or terrain would also attenuate noise and reduce levels.

Table 5.12-I – Typical Noise Levels Generated by Construction Equipment

Equipment	Type	Typical Lmax (dBA) Distance from the Source	
		25 Feet	50 Feet
Air Compressor	Stationary	87	81
Backhoe	Mobile	86	80
Compactor (ground)	Mobile	89	83
Concrete Mixer	Stationary	91	85
Dump Truck	Mobile	82	76
Excavator	Mobile	87	81
Flatbed Truck	Mobile	80	74
Front-end Loader	Mobile	85	79
Generator	Stationary	87	81
Grader	Mobile	89	83
Paver	Mobile	95	89
Pickup Truck	Mobile	81	75
Pneumatic Tools	Stationary	91	85
Roller	Mobile	86	80
Saw	Stationary	76	70
Warning Horn	Stationary	89	83
Welder/Torch	Stationary	80	74

Source: Federal Highway Administration 2006

Noise from construction activities associated with development consistent with the proposed Project would increase the existing ambient noise at noise-sensitive receptors adjacent to potential development sites. In addition, construction activities may last for extended periods of time, which would generate sound levels in excess of ambient noise in the City.

The City has adopted specific standards for construction noise under Title 9 Public Peace, Morals and Welfare, Chapter 9.02 Noise Control. Section 9.02.110F of the BMC specifically exempts noise sources associated with landscape maintenance, construction, including erection, excavation, demolition, alteration, or repair of any structure or improvement, provided that such activities do not take place between the hours of 6 p.m. and 7 a.m. However, sound levels are not permitted to exceed 55 dBA for more than 15 minutes per hour, as measured in the interior of the nearest occupied residence or school. Typical construction in California generally provides a reduction of exterior-to-interior noise levels of about 25 dBA with closed windows. (FTA 2006.). As shown in **Table 5.12-I – Typical Noise Levels Generated by Construction Equipment**, construction equipment noise levels could reach up to 89 dBA 50 feet from the source. With the typical 25 dBA reduction of exterior-to-interior noise level, this would equate to up to a 64 dBA interior noise level, which would exceed City standards. Beaumont 2040 Plan Implementation action N2, which requires project-specific acoustical studies, and Implementation actions N7, N8, and N9,

which set forth standards for the operation of construction equipment, require equipment staging areas to be located to as far away for noise sensitive receptors as feasible, and incorporation noise attenuation measures such as temporary bound barriers during certain construction phases.

In addition, per Section 9.02.110(F) of the BMC, whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September and between the hours of 6:00 p.m. and 7:00 a.m. during the months of October through May. Exceptions to the standards shall be allowed only with the written consent of the building official.

Therefore, through implementation of the Beaumont 2040 Plan Noise Element and compliance with the BMC, temporary construction-related noise impacts are considered **less than significant**

Threshold B*: Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels*

Vibration from construction activities could also have an impact on nearby noise-sensitive land uses. The FTA's *Transit Noise and Vibration Impact Assessment* (2006) sets a 72 VdB threshold for frequent events affecting residences and buildings where people normally sleep and a 100 VdB threshold for minor cosmetic damage to fragile buildings (vibration levels below 100 VdB produce no damage to buildings). The primary sources of man-made vibration during construction are blasting, grading, pavement breaking and demolition. The primary vibratory source during construction in the City would likely be large bulldozers used to demolish existing structures and large trucks loaded with supplies and debris. **Table 5.12-K – Vibration Source Levels for Construction Equipment** identifies vibration velocity levels for the common types of equipment that could be used in the City during construction. As shown in **Table 5.12-K**, typical bulldozer or loaded truck activities generate an approximate vibration level of 58 to 87 VdB at a distance of 25 feet. As such, existing and future residences located 25 feet from potential future construction facilitated by the proposed Project may intermittently be disturbed by vibration noise. However, vibration levels are not anticipated to exceed 100 VdB, which can cause minor damage in fragile buildings.

Table 5.12-K – Vibration Source Levels for Construction Equipment

Equipment	Approximate VdB[(a)]	
	25 feet	50 feet
Large Bulldozer	87	81
Loaded Trucks	86	80
Jackhammer	79	73
Small Bulldozer	58	52

Source: FTA 2006

Notes:
[(a)] Vibration levels assume an attenuation rate of 6 VdB per doubling of distance.

Per Section 9.02.110F of the BMC, whenever a construction site is within one-quarter of a mile of an occupied residence or residences, no construction activities shall be undertaken between the hours of 6:00 p.m. and 6:00 a.m. during the months of June through September and between the hours of 6:00

p.m. and 7:00 a.m. during the months of October through May. Exceptions to the standards shall be allowed only with the written consent of the building official. These restrictions on hours of construction would keep most construction activities from exceeding 72 VdB at the nearest sensitive receptor and interfering with people's sleep. In addition, construction would not be expected to exceed the 100 VdB threshold and damage fragile buildings.

In addition to vibration from construction, new development within the Planning Area in proximity to the rail lines may be subject to groundborne vibration.

The Noise Element of the Beaumont 2040 Plan includes Policies 10.2.8 and 10.2.9 and Implementation action N6 to reduce impacts associated with vibration from transportation and construction vibration, Implementation N2 requires acoustical studies, which could include an analysis of groundborne vibration and identify project-specific mitigation measures as needed.

Compliance with the applicable provisions of Chapter 9.02 of the BMC and the Beaumont 2040 Plan policies and implementation actions listed above would limit construction hours, identify appropriate project-specific mitigation, and reduce construction-related vibration impacts. Therefore, **impacts are considered less than significant**.

Threshold C: ***For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?***

No private or public airport is located within two miles of the Beaumont Planning Area. The closest airport is the Banning Municipal Airport, located approximately five (5) miles east of the eastern Planning Area boundary. Because the Planning Area is not located in the 55 dBA CNEL, 60 dBA CNEL, or 65 dBA CNEL noise contours of the Banning Municipal Airport (Banning 2007), impacts related to the exposure of people to excessive airport noise levels would be **less than significant**. Mitigation is not required.

5.12.6 Proposed Mitigation Measures

An EIR is required to describe feasible mitigation measures, which could minimize significant adverse impacts (*CEQA Guidelines*, Section 15126.4). Although the Beaumont 2040 Plan includes feasible policies and implementation actions, future development per the Beaumont 2040 Plan could result in vehicular noise in excess of FHWA standards. At a program level, there are no feasible mitigation measures that have not been incorporated as policies or implementation actions in the Beaumont 2040 Plan.

5.12.7 Level of Significance After Mitigation

Because implementation of the Beaumont 2040 Plan could result in new vehicular traffic which could exceed the FHWA thresholds, proposed Project noise impacts could exceed applicable standards (Threshold A) and could substantially increase the ambient noise levels in the Planning Area. Although Beaumont 2040 Plan policies and implementation actions contained in the Noise Element would reduce these impacts to the furthest extent feasible, impacts, at a program level remain **significant and unavoidable**.

The significance of noise impacts from specific future development and public improvement projects will be evaluated on a project-by-project basis and Beaumont 2040 Plan policies as well as City standards

and practices will be applied, individually or jointly, as necessary and appropriate. If project-level impacts are identified at that time, specific mitigation measures may be required by CEQA.

5.12.8 References

The following references were used in the preparation of this section of the Draft PEIR:

Amtrak 2018 — Amtrak. 2018. *Company Profile (FY 2017).* March 2018.

Banning 2007 — City of Banning, *Banning Municipal Airport, Airport Master Plan Update Final Report,* 2007. (Available at http://banning.ca.us/DocumentCenter/View/470/Airport_MP?bidId=, accessed June 2019.)

Beaumont 2007 — City of Beaumont, *City of Beaumont General Plan.* March 2007. (Available at https://www.beaumontca.gov/121/General-Plan, accessed June 2019.)

Caltrans 2017a — California Department of Transportation (Caltrans), 2017. Traffic Census Program. *Traffic Volumes: Annual Average Daily Traffic (AADT).* U.S. Department of Transportation, Federal Highway Administration. (Available at http://www.dot.ca.gov/trafficops/census/, accessed June 2019.)

Caltrans 2017b — California Department of Transportation (Caltrans), 2017. Traffic Census Program. *Truck Traffic: Annual Average Daily Truck Traffic.* U.S. Department of Transportation, Federal Highway Administration. (Available at http://www.dot.ca.gov/trafficops/census/, accessed June 2019.

Caltrans TeNS — California Department of Transportation, Division of Environmental Analysis, *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, September 2013. (Available at https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/tens-sep2013-a11y.pdf, accessed May 9, 2020.)

California Governor's Office of Planning and Research (OPR) 2017 — California Governor's Office of Planning and Research (OPR). 2017. *State of California General Plan Guidelines.* July 2017. (Available at http://opr.ca.gov/docs/OPR_COMPLETE_7.31.17.pdf, accessed June 2019.)

ECR — City of Beaumont, *City of Beaumont General Plan Update Existing Conditions Report*. 2016. (Included as Appendix B.)

FHWA 2006 — Federal Highway Administration (FHWA). 2006. *Construction Noise Handbook*. FHWA-HEP-06-015. August 2006.

Federal Railroad Administration 2018a — Federal Railroad Administration Office of Safety Analysis, *US DOT Crossing Inventory Form for Union Pacific Railroad Company [UP] in and near Beaumont,* October 2018. (Available at https://safetydata.fra.dot.gov/OfficeofSafety/PublicSite/Crossing/XingLocResults.aspx?state=06&countycity=0290%2c&railroad=UP&reportinglevel=INDIVIDUAL&radionm=City&street=&xingtype=3&xingstatus=1&xingpos=1, accessed August 2018.)

Federal Railroad Administration 2018b — Federal Railroad Administration Office of Safety Analysis, *US DOT Crossing Inventory Form for Union Pacific Railroad Company [UP] in and near Beaumont,* October 2018. (Available at https://safetydata.fra.dot.gov/OfficeofSafety/PublicSite/Crossing/XingLocResults.aspx?state=06&countycity=0290%2c&railroad=UP&reportinglevel=INDIVIDUAL&radionm=City&street=&xingtype=3&xingstatus=1&xingpos=1, accessed October 2018.)

Fehr & Peers — Fehr & Peers, *Final Transportation Impact Analysis. Beaumont General Plan Update and Downtown Area Plan*, July 2020. (Included as Appendix F.1.)

FTA — Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*. FTA-VA-90-1003-06, May 2006. (Available at https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/FTA_Noise_and_Vibration_Manual.pdf, accessed October 2018.)

HUD 2019 — U.S. Department of Housing and Urban Development (HUD), *DNL Calculator*. (Available at https://www.hudexchange.info/environmental-review/dnl-calculator/, accessed June 2019.)