1 EXISTING NOISE LEVEL MEASUREMENTS

To assess the existing noise level environment, five 24-hour noise level measurements were taken at sensitive receiver locations in the Project study area. The receiver locations were selected to describe and document the existing noise environment within the Project study area. Exhibit 1-A provides the boundaries of the Project study area and the noise level measurement locations. To fully describe the existing noise conditions, noise level measurements were collected by Urban Crossroads, Inc. from Tuesday, June 20th to Wednesday, June 21st, 2017. Appendix 5.1 includes study area photos.

1.1 MEASUREMENT PROCEDURE AND CRITERIA

To describe the existing noise environment, the hourly noise levels were measured during typical weekday conditions over a 24-hour period. By collecting individual hourly noise level measurements, it is possible to describe the daytime and nighttime hourly noise levels and calculate the 24-hour CNEL. The long-term noise readings were recorded using Piccolo Type 2 integrating sound level meter and dataloggers. The Piccolo sound level meters were calibrated using a Larson-Davis calibrator, Model CAL 150. All noise meters were programmed in "slow" mode to record noise levels in "A" weighted form. The sound level meters and microphones were equipped with a windscreen during all measurements. All noise level measurement equipment satisfies the American National Standards Institute (ANSI) standard specifications for sound level meters ANSI S1.4-2014/IEC 61672-1:2013. (24)

1.2 NOISE MEASUREMENT LOCATIONS

The long-term noise level measurements were positioned as close to the nearest sensitive receiver locations as possible to assess the existing ambient hourly noise levels surrounding the Project site. Both Caltrans and the FTA recognize that it is not reasonable to collect noise level measurements that can fully represent every part of a private yard, patio, deck, or balcony normally used for human activity when estimating impacts for new development projects. This is demonstrated in the Caltrans general site location guidelines which indicate that, *sites must be free of noise contamination by sources other than sources of interest. Avoid sites located near sources such as barking dogs, lawnmowers, pool pumps, and air conditioners unless it is the express intent of the analyst to measure these sources*. (7) Further, FTA guidance states, t*hat it is not necessary nor recommended that existing noise exposure be determined by measuring at every noise-sensitive location in the project area. Rather, the recommended approach is to characterize the noise environment for clusters of sites based on measurements or estimates at representative locations in the community*. (5)

Based on recommendations of Caltrans and the FTA, it is not necessary to collect measurements at each individual building or residence, because each receiver measurement represents a group of buildings that share acoustical equivalence. (5) In other words, the area represented by the receiver shares similar shielding, terrain, and geometric relationship to the reference noise source. Receivers represent a location of noise sensitive areas and are used to estimate the future noise level impacts. Collecting reference ambient noise level measurements at the nearby

sensitive receiver locations allows for a comparison of the before and after Project noise levels and is necessary to assess potential noise impacts due to the Project's contribution to the ambient noise levels.

1.3 NOISE MEASUREMENT RESULTS

The noise measurements presented below focus on the average or equivalent sound levels (Leq). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. Table 1-1 identifies the hourly daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) noise levels at each noise level measurement location. Appendix 5.2 provides a summary of the existing hourly ambient noise levels described below:

- Location L1 represents the noise levels north of the Project site on El Rivino Road near existing residential homes. The noise level measurements collected show an overall 24-hour exterior noise level of 67.3 dBA CNEL. The hourly noise levels measured at location L1 ranged from 57.9 to 63.8 dBA Leq during the daytime hours and from 52.7 to 62.7 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 61.7 dBA Leq with an average nighttime noise level of 60.3 dBA Leq.
- Location L2 represents the noise levels measured northeast of the Project site adjacent to existing industrial uses in the Santa Ana River area. The noise level measurements collected show an overall 24-hour exterior noise level of 62.4 dBA CNEL. The hourly noise levels measured at location L2 ranged from 53.9 to 57.8 dBA Leq during the daytime hours and from 52.2 to 58.4 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 56.0 dBA Leq with an average nighttime noise level of 55.7 dBA Leq.
- Location L3 represents the noise levels within the existing Milestone MX Park use at the Project site adjacent to motocross dirt trail activities. The 24-hour CNEL indicates that the overall exterior noise level is 66.3 dBA CNEL. At location L3 the background ambient noise levels ranged from 49.7 to 76.6 dBA Leq during the daytime hours to levels of 49.5 to 59.9 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 67.1 dBA Leq with an average nighttime noise level of 54.4 dBA Leq.
- Located southwest of the Project site, location L4 represents the noise levels near existing residential homes on Brown Avenue and Wilson Street. The noise level measurements collected show an overall 24-hour exterior noise level of 65.9 dBA CNEL. The hourly noise levels measured at location L4 ranged from 55.1 to 64.5 dBA Leq during the daytime hours and from 53.0 to 62.3 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 61.6 dBA Leq with an average nighttime noise level of 58.9 dBA Leq.
- Location L5 represents the noise levels south of the Project site on Alamo Street near existing and planned residential homes. The 24-hour CNEL indicates that the overall exterior noise level is 61.0 dBA CNEL. At location L5 the background ambient noise levels ranged from 48.5 to 66.0 dBA Leq during the daytime hours to levels of 49.3 to 54.6 dBA Leq during the nighttime hours. The energy (logarithmic) average daytime noise level was calculated at 59.9 dBA Leq with an average nighttime noise level of 52.1 dBA Leq.

Table 1-1 provides the (energy average) noise levels used to describe the daytime and nighttime ambient conditions. These daytime and nighttime energy average noise levels represent the average of all hourly noise levels observed during these time periods expressed as a single number. Appendix 5.2 provides summary worksheets of the noise levels for each hour as well as the minimum, maximum, L_1, L_2, L_5, L_8, L_{25}, L_{50}, L_{90}, L_{95}, and L_{99} percentile noise levels observed during the daytime and nighttime periods.

The background ambient noise levels in the Project study area are dominated by the transportation-related noise associated with the arterial transportation network, such as State Route 60 (SR-60), and background industrial land use activities. This includes the auto and heavy truck activities on study area roadway segments near the noise level measurement locations. The 24-hour existing noise level measurement results are shown on Table 1-1.

TABLE 1-1: 24-HOUR AMBIENT NOISE LEVEL MEASUREMENTS

Location[1]	Distance to Project Boundary (Feet)	Description	Energy Average Hourly Noise Level (dBA Leq)[2]		CNEL
			Daytime	Nighttime	
L1	2,775'	Located north of the Project site on El Rivino Road near existing residential homes.	61.7	60.3	67.3
L2	735'	Located northeast of the Project site adjacent to existing industrial uses in the Santa Ana River area.	56.0	55.7	62.4
L3	0'	Located within the existing Milestone MX Park use at the Project site adjacent to motocross dirt trail activities.	67.1	54.4	66.3
L4	838'	Located southwest of the Project site near existing residential homes on Brown Avenue and Wilson Street.	61.6	58.9	65.9
L5	2,096'	Located south of the Project site on Alamo Street near existing and planned residential homes.	59.9	52.1	61.0

[1] See Exhibit 1-A for the noise level measurement locations.

[2] Energy (logarithmic) average hourly levels. The long-term 24-hour measurement worksheets are included in Appendix 5.2.
"Daytime" = 7:00 a.m. to 10:00 p.m.; "Nighttime" = 10:00 p.m. to 7:00 a.m.

EXHIBIT 1-A: NOISE MEASUREMENT LOCATIONS