Draft Supplemental Environmental Impact Report for

METRO GOLD LINE FOOTHILL EXTENSION

Evaluating Relocation of the San Dimas Station Parking Facility

Azusa to Montclair (SCH No. 2010121069)

February 2022

APPENDIX C:

Noise and Vibration Technical Memorandum

Foothill Gold Line

Metro Gold Line Foothill Extension Construction Authority

Cross-Spectrum Acoustics

Cross-Spectrum Acoustics Inc.

Massachusetts

Utah

California

TECHNICAL MEMORANDUM

To: Natasha Peterson, Foothill Gold Line Construction Authority

From: Shannon McKenna, Cross-Spectrum Acoustics Inc.

Date: August 23, 2021

Subject: Noise Assessment of San Dimas Modified Parking Facility
Foothill Gold Line Construction Authority

This technical memorandum presents the evaluation of noise levels for a change in the site of the parking facility in San Dimas for the Foothill Gold Line Azusa to Montclair project. The Foothill Gold Line Construction Authority originally approved parking structures as part of the Final Environmental Impact Report (EIR). Modified parking lots were subsequently approved for Glendora, San Dimas, La Verne, Pomona, and Claremont stations as part of Supplemental EIR #2. The noise levels for the originally approved San Dimas parking structure from the Final EIR, the modified lot option from the Supplemental EIR #2, and the currently proposed modified parking option are assessed using the methodology in the Federal Transit Administration's Noise and Vibration Impact Assessment guidance manual (the FTA guidance manual)[1].

The proposed modified parking facility location for San Dimas is located south of the project right-of-way between Monte Vista Avenue and San Dimas Avenue, in the location of an existing parking lot. The location of the proposed modified parking facility is shown in Figure 1 with the nearest noise-sensitive receivers. The parking structure assessed in the Final EIR, shown in Figure 2, is located two blocks to the east, south of the project right-of-way and west of Walnut Avenue. The parking lot assessed for the Supplemental EIR #2 overlaps the Final EIR location and is also shown in in Figure 2. The change in noise level resulting from the modifications depend on the change in number of parking spaces and the change in distance to the noise-sensitive receivers. The predicted noise levels for the proposed modified San Dimas parking facility, including noise generated as a result of proposed access points, are lower than the predicted noise levels for the Final EIR parking facility due to a reduced number of spaces proposed resulting from changing the parking structure to a surface lot. The predicted noise levels for the proposed modified San Dimas parking facility, including access points, are lower than the predicted noise levels for the Supplemental EIR #2 facility because the nearest sensitive receivers are farther from the proposed modified lot location.

METHODOLOGY

The FTA guidance manual provides screening distances for different noise sources. The screening distances recommended for parking facilities is 125 feet for unobstructed sensitive receivers and 75 feet for sensitive receivers with intervening buildings between the parking area and the receiver. The nearest noise sensitive receivers to the modified parking facility in San Dimas are within the FTA's recommended screening distance of 125 feet, indicating a noise impact assessment is needed.

[1] *Transit Noise and Vibration Impact Assessment* Document FTA Report No. 0123. Office of Planning and Environment Federal Transit Administration. September 2018.

The noise levels from the parking facility are predicted using the reference noise levels and formulas provided in the FTA guidance manual. The reference Sound Exposure Level (SEL)[2] for parking garages is 92 dBA at 50 feet for a garage with 1000-car capacity in peak activity hour. The reference level is adjusted for distance to the sensitive receiver and the car capacity of the garage using the following formula:

$$Leq(1hr) = SEL_{ref} + 10\log\left({}^{N_{autos}}/_{1000}\right) - 25\log\left({}^{D}/_{50}\right) - 35.6$$

where:

Leq(1hr)	=	1-hour equivalent noise level at the sensitive receiver
SELref	=	Reference Sound Exposure Level
Nautos	=	Number of automobiles per hour
D	=	Distance from the parking garage to the sensitive receiver

NOISE ASSESSMENT

Figure 1 shows an aerial map of the proposed modified parking lot in San Dimas. The nearest noise sensitive receiver is located 60 feet to the south of the lot. Table 1 presents the parking volumes for the previously approved structure and the modified lot, the distance to the nearest noise-sensitive receiver, and the predicted change in 1-hour Leq noise levels. The Final EIR structure and the proposed modified lot are a similar distance to the nearest noise sensitive receiver, but the modified lot has fewer spaces resulting in a lower predicted noise level compared to the Final EIR structure. The Supplemental EIR #2 modified lot has an equal number of spaces to the proposed modified lot, but the proposed modified lot is farther from the nearest noise sensitive receivers, resulting in a lower predicted noise level.

Table 1. Changes in Parking Volumes and Predicted 1-hr Leq Noise Levels

	2013 Final EIR Structure	2020 Supplemental EIR #2 Modified Lot	Proposed Modified Lot
Number of Parking Spaces Proposed	450	289	289
Minimum Distance to Sensitive Receivers	55 feet	45 feet	60 feet
Predicted Noise Level, 1-hr Leq	52 dBA	52 dBA	49 dBA

The FTA noise impact criteria for residential land use utilizes the 24-hour day-night noise level metric, or Ldn. The Ldn is the sound exposure level over 24-hours with a 10 dB penalty for noise during nighttime hours to account for the greater sensitivity of people to nighttime noise. The impact threshold is based on the existing noise level. The existing noise levels for the noise sensitive receivers shown in Figure 1 are based on the noise measurement data presented in the Final EIR[3].

Table 2 presents the predicted Ldn compared to the FTA impact threshold for the noise sensitive receivers closest to the proposed modified parking lot in San Dimas. The Ldn is predicted assuming that the number of automobiles per hour using the lot is the full capacity of the lot (289 vehicles) between 4 a.m. to 10 p.m. Predictions assume the number of automobiles per hour is half the capacity of the lot from 10

[2] Sound Exposure Level is the level of sound accumulated over a given time interval or event.
[3] 2013 Final Environmental Impact Report (Final EIR) for the Metro Gold Line Foothill Extension from Azusa to Montclair Project

p.m. to 2 a.m. and that no cars enter or exit the lot from 2 a.m. to 4 a.m. The assumptions for number of automobiles per hour are meant to be conservative to avoid underpredicting noise levels from the parking lots, and is consistent with the assumptions in Supplemental EIR #2. Table 2 shows the predicted noise level at the San Dimas modified parking lot is below the FTA impact threshold.

Because the predicted noise level is below the FTA impact threshold for moderate or severe noise, no noise mitigation measures are recommended for the San Dimas modified parking lot.

Table 2. Noise Impact Assessment for San Dimas Modified Parking Lot

	San Dimas
Existing Noise Level, Ldn	65 dBA
Moderate Noise Impact Threshold, Ldn	61 dBA
Severe Noise Impact Threshold, Ldn	66 dBA
Predicted Ldn	53 dBA
Impact Assessment	No Impact

Figure 1: Aerial Map of Proposed Modified Parking Lot and the Nearest Noise-Sensitive Receiver for San Dimas Station

Figure 2: Aerial Map of 2013 FEIR Parking Structure, Modified SEIR #2 Parking Structure, and the Nearest Noise-Sensitive Receiver for San Dimas Station

Foothill Gold Line

Metro Gold Line Foothill Extension Construction Authority