TO: **City of Moreno Valley**

Attn: Josh Frohman

14177 Frederick St., Moreno Valley, CA, 92553

FROM: WSP, USA

SUBJECT: **Sunnymead Master Drainage Plan – Storm Drain Lines F and F-7: Noise Technical Memorandum (City Project 804-0008)**

DATE: **February 3, 2025**

SCOPE AND NOISE STUDY METHODS

This report is an assessment of the noise impacts due to construction of the Proposed Project, improvements to the Master Drainage Plan Line F from Hemlock Avenue to north of Eucalyptus Avenue. The improvements will be below ground; therefore, the Proposed Project will not result in an increase overall ambient noise levels after construction.

LOCAL REGULATIONS

The City of Moreno Valley's General Plan, Section 5.4, includes goals and policies related to noise. For construction noise, policy 6.5.2 requires construction activities to limit noise impacts on surrounding uses, and Policy 6.3.6 prohibits construction between 8 p.m. and 6 a.m. during the week and 8 p.m. and 7 a.m. weekends and holidays.

Title 11 Peace, Morals and Safety Chapter 11.80 noise regulations of the Moreno Valley Municipal Code provides the provisions and prohibitions for noise levels within the City. Sound Levels limits in Chapter 11.80 are based on statics from the Center of Disease Control and National Institute of Occupational Safety and Health. Table 1 below show the maximum continuous sound levels limits at the adjacent property line.

Table 1. Maximum Continuous Sound Levels

Duration Per Day Continuous Hours	Sound Level [dB(A)]
8	90
6	92
4	95
3	97
2	100
1.5	102
1	105
0.5	110
0.25	115

Under the noise regulations, 11.80.030 prohibited acts Construction and Demolition. "No person shall operate or cause the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of eight p.m. and seven a.m., the

following day such that the sound there from creates a noise disturbance, expect for emergency work by public service utilities or for other work approved by the city manager or designee.

BACKGROUND

Noise is unwanted sound that disturbs human activity. Environmental noise levels typically fluctuate over time, and different types of noise descriptors are used to account for this variability. 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 power 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).

Because of the logarithmic scale of the decibel unit, sound levels cannot be added or subtracted arithmetically. If the physical intensity of a sound is doubled, the sound level increases by 3 dBA, regardless of the initial sound level. For example, 60 dBA plus 60 dBA equals 63 dBA. Where ambient noise levels are high in comparison to a new noise source, the change in noise level would be less than 3 dBA. For example, when 70 dBA ambient noise levels are combined with a 60 dBA noise source the resulting noise level equals 70.4 dBA.

Properties adjoining project construction may be exposed to noise caused by construction activities of the Proposed Project. Examples of construction equipment noise are shown in Table 2. Construction noise has the following characteristics:

- Construction noise lasts only for the duration of construction, with most construction activities in noise-sensitive areas being conducted during hours that are least disturbing to most nearby residents, when feasible.
- Construction activities generally are short term and, depending on the nature of the construction operations, last from seconds (e.g., a truck passing a receptor) to months (e.g., bridge construction).
- Construction equipment noise is intermittent and depends on the type of operation, location, and function of the equipment, as well as the equipment usage cycle.

Table 2. Typical Construction Equipment Noise

Equipment	Maximum Noise Level (dBA at 50 feet)[1]
Scraper	89
Dozer (Bulldozer)	85
Truck (Heavy Truck)	88[2]
Pickup Truck	55
Concrete Pump Truck	82
Backhoe	80
Pneumatic Tools	85

Notes:

Equipment	Maximum Noise Level (dBA at 50 feet)[1]

1. Noise levels are from Table 9.1 of FHWA's 2006 Construction Noise Handbook (FHWA, 2006), unless otherwise noted.
2. This noise level is from Table 9.9 of FHWA's 2006 Construction Noise Handbook (FHWA, 2006), which is taken from Chapter 12 of the FTA Transit Noise and Vibration Guidance Handbook.

IMPACT ANALYSIS

CONSTRUCTION

Project construction would result in groundborne vibration and noise from ground disturbing activities, such as excavation and grading that is necessary for construction. Impacts would be temporary and for short durations of time. The total project construction is anticipated to take 18 months, but as Figure 1 shows, the construction will be done in ten phases, with durations from 11 to 85 days. Activities such as clearing and grubbing and the pavement cutting, and pipe trenching would result in the highest noise levels. Noise from construction equipment such as a dozers, excavators and saw cutting would be expected for at least one to three weeks in duration per phase. Other construction equipment that is anticipated to be used includes: front end loader, backhoes, generators, 10-wheel dump truck, 18-wheel trailers, concrete delivery trucks and pumps.

For phases 0 to 3, the rear property lines of homes on the following streets could be within 25 feet of construction, while the back of the homes are at least 50 feet from the construction: Sunny Meadows Drive, Penske Street, Donohue Court, Yarborough Drive, Gurney Place, Surtees Court, and Adeline Ave. Apart from the north end of Sunny Meadows Drive and Penske Street, construction activities would occur behind these homes for 23 to 26 days. Phase 3 will take 35 days and will be 20 to 25 feet from the homes at the north end of Sunny Meadows Drive and Penske Street. One-hour r Leq(dBA) noise levels at the back yard property line for phases 0 and 1 will range from 89 to 87 dBA, with the noise levels at the homes around 80 dBA. For the homes close to phase 3 the one-hour noise levels will range between 84 dBA at the property line to 78 dBA at the edge of structure.

Phases 4,5 and 6 have no noise sensitive land uses within 200 feet.

For phases 7 and 8 the Segovia Apartment building at 23227 Hemlock would be within 25 feet of phase 7 activities and within 60 feet of phase 8 activities. Phase 7 has a duration of 11 days and phase 8 duration is 49 days, but the phases can be done concurrently, so the construction time in this area would be 49 days. Phase7 one-hour Leq(dBA) levels are expected to be 84 to 87 dBA at the back of the apartment building. Phase 8 one-hour Leq(dBA) levels are expected to be 77 to 81 dBA at the back of the apartment building.

Phase 9 construction is along Hemlock Avenue, to the intersection with Graham Street, phase 9 has a duration of 85 days. Along Hemlock Avenue are several residential properties with front yards are within 15 feet from the street, while the buildings set back to 30 to 35 feet from Hemlock Avenue. During phase 9, one-hour Leq(dBA) levels are expected to between 83 to 96 dBA at nearest point of the front yard and between 83 to 90 dBA at the front of the buildings.

The highest noise levels during phase 9 are due to the use of concrete saws to cut the asphalt on Hemlock Avenue; this activity has a duration of 19 days.

Construction would comply to the City of Moreno Valley's General Plan section 5.4 and Chapter 11.80 of the city's Municipal Code. The project would conform with N5 and N10 in the General Plan, which state:

- N5. Construction activities shall be operated in a manner that limits noise impacts on surrounding uses (Policy 6.5.2).
- N10 Building construction shall be prohibited between 8 p.m. and 6 a.m. during the week and 8 p.m. and 7 a.m. weekends and holidays (Policy 6.3.6)

PROJECT IMPACT

Construction will be done in compliance with the City of Moreno Valley's General Plan section 5.4 and the Chapter 11.80 or the Municipal Code. There would be no construction related noise impacts.

Figure 1. Project Construction Phase