

SUBCHAPTER 4.7

NOISE

Introduction

2012 AQMP Control Measures with Potential Noise Impacts

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4.7 NOISE

4.7.1 Introduction

This subchapter identifies 2012 AQMP control measures that could result in potential adverse noise impacts. Control measures that may have noise impacts are primarily those associated with construction activities.

4.7.2 2012 AQMP Control Measures with Potential Noise Impacts

All control measures in the 2012 AQMP were evaluated to determine whether or not they could generate noise impacts based on the anticipated methods of control. Control measures that may result in noise impacts are included in Table 4.7-1. Construction activities that could be required to implement the following control measures in the 2012 AQMP, BCM-03 - Emission Reductions from Under-Fired Charbroilers, CMB-01 - Further NO_x Reductions from RECLAIM – *Phase I and Phase II*, CMB-02 - NO_x Reductions from Biogas Flares, CMB-03 - Reductions from Commercial Space Heating, IND-01 - Backstop Measure for Indirect Sources of Emissions from Ports and Port-Related Facilities, FUG-01 - ~~Further~~ VOC Reductions from Vacuum Trucks, FUG-02 - Emission Reduction from LPG Transfer and Dispensing – Phase II, FUG-03 - Further ~~VOC~~ Reductions from Fugitive VOC Emissions, MCS-01 - Application of All Feasible Measures Assessment, MCS-03 - Improved Start-up, Shutdown and Turnaround Procedures, INC-01 - Economic Incentive Programs to Adopt Zero and Near-Zero Technologies, OFFRD-04 - Further Emission Reductions from Ocean-Going Marine Vessels at Berth, ONRD-03 - Further Emission Reductions from Passenger Locomotives, ONRD-05 - Further Emission Reductions from Heavy-Duty Vehicles Serving Near-Dock Railyards, ADV-01 - Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission On-Road Heavy-Duty Vehicles, ADV-02 - Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission Locomotives, ADV-03 - Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission Cargo Handling Equipment, ADV-04 - Actions for the Deployment of Cleaner Commercial Harborcraft, ADV-05 - Proposed Implementation Measures for the Deployment of Cleaner Ocean-Going Marine Vessels, and ADV-06 - Proposed Implementation Measures for the Deployment of Cleaner Off-Road Equipment. Some of the control measures could require construction activities which could generate noise impacts. Specifically, ONRD-03, ONRD-05, and ADV-01 propose to advance zero-emission and cleaner combustion emission technologies for on-road heavy-duty vehicles. Possible methods associated with this control measure could include cleaner engines using technologies such as electric, battery electric, and fuel cells, as well as alternative and renewable fuels. ONRD-03, ONRD-5 and ADV-01 could also result in the construction of "wayside" electric or magnetic power built into roadway infrastructure to boost the pulling capacity or range of the heavy-duty vehicles. This may include battery changing or fueling infrastructure as well as overhead electrical catenary lines. ADV-02 could require electrification of existing rail lines.

TABLE 4.7-1

Control Measures with Potential Secondary Noise Impacts

CONTROL MEASURE	CONTROL MEASURE TITLE (POLLUTANT)	CONTROL METHODOLOGY	NOISE IMPACT
SHORT-TERM PM2.5 CONTROL MEASURES			
BCM-03 <i>(formerly BCM-05)</i>	Emission Reductions from Under-Fired Charbroilers	Add-On Control Equipment with Ventilation Hood Requirements (e.g., ESPs, HEPA filters, wet scrubbers, and thermal oxidizers).	Construction activities associated with air pollution control equipment could generate noise impacts.
IND-01 ^a	Backstop Measure for Indirect Sources of Emissions from Ports and Port-Related Facilities	Environmental lease conditions, port rules, tariffs or incentives.	Control measure could result in construction activities associated with air pollution control equipment and other control strategies that could generate noise impacts.
MCS-01 ^a	Application of All Feasible Measures Assessment	SCAQMD District will adopt and implement new retrofit technology control standards as new BARCT standards become available.	Control measure could result in construction activities associated with air pollution control equipment and other control strategies that could generate noise impacts.
OZONE CONTROL MEASURES			
CMB-01	Further NOx Reductions from RECLAIM – <i>Phase I and Phase II</i>	Selective catalytic reduction, low NOx burners, NOx reducing catalysts, oxy-fuel furnaces, and selective non-catalytic reduction.	Implementation of BARCT technologies could result in construction activities that would generate noise impacts.
CMB-02	NOx Reductions from Biogas Flares (NOx)	Replacement of existing biogas flares with more efficient biogas flares	Replacement of flares could generate construction noise impacts.
CMB-03	Reductions from Commercial Space Heating (NOx)	This control measure seeks emission reductions from unregulated commercial fan-type central furnaces used for space heating.	Replacement of unregulated commercial fan-type central furnaces could generate noise impacts.
FUG-01	Further VOC Reductions from Vacuum Trucks	VOC control devices such as carbon adsorption systems, internal combustion engines, thermal oxidizers, refrigerated condensers, liquid scrubbers and positive displacement (PD) pumps.	Construction activities associated with air pollution control equipment could generate noise impacts.
FUG-02	Emission Reduction from LPG Transfer and Dispensing – <i>Phase II</i>	Expand applicability of rule to LPG transfer and dispensing at facilities other than those that offer LPG for sale to end users included currently exempted facilities.	Construction activities associated with air pollution control equipment could generate noise impacts.

TABLE 4.7-1 (CONTINUED)

Control Measures with Potential Secondary Noise Impacts

CONTROL MEASURE	CONTROL MEASURE TITLE (POLLUTANT)	CONTROL METHODOLOGY	NOISE IMPACT
OZONE CONTROL MEASURES			
MCS-03	Improved Start-up, Shutdown and Turnaround Procedures (All Pollutants)	Diverting or eliminating process streams that are vented to flares, and installing redundant equipment to increase operational reliability	Construction activities could generate noise impacts.
INC-01	Economic Incentive Programs to Adopt Zero and Near-Zero Technologies (NOx)	Installation of cleaner, more efficient combustion equipment, such as boilers, water heaters and commercial space heating or installation of control technologies including fuel cells, diesel particulate filters (DPF), NOx reduction catalysts, alternative electricity generation, such as wind and solar, battery electric, hybrid electric, and usage of low NOx and alternative fuels such as natural gas.	Replacement of existing combustion equipment and installation of emissions controls could generate noise impacts.
ONRD-03	Accelerated Penetration of Partial Zero Emission and Zero Emission Light-Heavy- and Medium-Heavy-Duty Vehicles [NOx, PM]	Construct "wayside" electric or magnetic infrastructure, construction battery charging and fueling infrastructure.	Construction activities associated with battery charging or fueling infrastructures, as well as transportation infrastructure, could generate noise impacts.
ONRD-05	Further Emission Reductions from Heavy-Duty Vehicles Serving Near-Dock Railyards (NOx, PM)	Incentives to replace older medium-duty vehicles with low-emitting vehicles.	Construction activities associated with wayside power, catenary lines or other similar technologies could generate noise impacts.
OFFRD-04	Further Emission Reductions from Ocean-Going Marine Vessels at Berth	Shore power of vessels at berth, use of air pollution control technologies on exhaust gases from auxiliary engines and boilers (e.g., SCRs, DPM filters, electric batteries, and alternative fuels).	Construction activities associated with emission control technologies could generate noise impacts.
ADV-01	Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission On-Road Heavy-Duty Vehicles (NOx)	Construct "wayside" electric or magnetic infrastructure, construction battery charging and fueling infrastructure.	Construction activities associated with battery charging or fueling infrastructures, as well as transportation infrastructure, could generate noise impacts.

TABLE 4.7-1 (CONCLUDED)
Control Measures with Potential Secondary Noise Impacts

CONTROL MEASURE	CONTROL MEASURE TITLE (POLLUTANT)	CONTROL METHODOLOGY	NOISE IMPACT
OZONE CONTROL MEASURES			
ADV-02	Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission Locomotives (NOx)	Construct "wayside" electric or magnetic infrastructure, construct battery charging or fueling infrastructure.	Construction activities associated with wayside power, catenary lines or other similar technologies could generate noise impacts.
ADV-03	Proposed Implementation Measures for the Deployment of Zero- and Near-Zero Emission Cargo Handling Equipment (NOx)	Construct electric gantry cranes, construct battery charging or fueling infrastructure, use of alternative fuels and fuel additives.	Construction activities associated with emission control technologies could generate noise impacts.
ADV-04	Actions for the Deployment of Cleaner Commercial Harborcraft (NOx)	Construct battery charging or fueling infrastructure, use of air pollution control equipment (e.g., SCR, use of alternative fuels and fuel additives).	Construction activities associated with emission control technologies could generate noise impacts.
ADV-05	Proposed Implementation Measures for the Deployment of Cleaner Ocean-Going Marine Vessels [NOx]	Construction of control technologies such as SCR and wet/dry scrubbers, use of alternative fuels.	Construction activities associated with emission control technologies could generate noise impacts.
ADV-06	Proposed Implementation Measures for the Deployment of Cleaner Off-Road Equipment [NOx]	Construct battery charging or fueling infrastructure, increased use of alternative fuels and fuel additives.	Construction activities associated with emission control technologies could generate noise impacts.

- a. The specific actions associated with the control measure are unknown and, therefore, the impacts are speculative. In order to provide a conservative analysis, it is assumed that the control measure could require air pollution control technologies that are similar to those that are currently required (e.g., SCR, electrification, use of alternative fuels, etc.) and would have the potential to require construction activities that would generate noise.

4.7.3 Significance Criteria

Implementation of the 2012 AQMP would be considered to have significant adverse impact on noise or vibration if any of the following conditions occur:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.

- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.
- Construction and operation would have a significant vibration impact if ground vibration levels for residential structures would exceed 72 VdB for frequent events (70+ vibration events), 75 VdB for occasional events (30-70 events), and/or 80 VdB for infrequent events (e.g., 30 or fewer events) such as the acceptability limits prescribed by the Federal Transit Administration.

4.7.4 Potential Noise Impacts and Mitigation

Construction Activities: Potential noise impacts associated with the 2012 AQMP relate primarily to the construction activities associated with air pollution control equipment and construction of support systems (e.g., wayside power, catenary overhead electrical lines, battery charging or fueling infrastructures related to operation of zero- and near-zero transport systems). Control Measures ONRD-03, ONRD-05, and ADV-01 could require the installation of catenary overhead electrical lines within or adjacent to existing roadways, streets, freeways, and/or transportation corridors. ADV-02 could require the installation of electrical or magnetic infrastructure along rail lines. For purposes of evaluating potential noise impacts, it has been assumed herein that no new rail or truck traffic routes would be constructed, but rather some of these existing routes/corridors will be modified to include catenary overhead electrical lines or magnetic lines. A number of control measures could result in the construction of air pollution control equipment including BCM-03, IND-01, MCS-01, CMB-01, FUG-01, FUG-02, INC-01, OFFRD-04, ADV-01, ADV-02, ADV-03, ADV-04, ADV-05, and ADV-06.

The existing rail and truck routes/corridors likely to be modified are located primarily in commercial and industrial zones within the Southern California area. Examples of these areas include, but are not limited to, the Port of Los Angeles, Port of Long Beach, and industrial areas in and around container transfer facilities (rail and truck) near the Terminal Island Freeway, along the Alameda Corridor, as well inland railyards near downtown Los Angeles. Construction activities may also occur at stationary sources where air pollution control equipment or new equipment may be installed.

Construction activities may require the use of heavy construction equipment. As specific construction projects are not currently proposed, the specific types of construction equipment necessary to implement the proposed control measures are not currently known. The noise levels from typical construction equipment are presented in Table 4.7-2.

The construction equipment noise sources identified in Table 4.7-2 represent typical construction equipment that range from 72 [dBA](#) to over 100 ~~decibels~~ (dBA) for activities such as pile driving. The construction equipment, hours of operations, number of pieces of equipment operating at the same time, and construction phases, would vary depending on the specific project; therefore, the construction noise levels are also expected to vary. Each construction phase would use a combination of equipment and personnel that would vary throughout that phase. In addition, construction phases could overlap at the site. This

would lead to a variety of possible construction activities and equipment that may occur at any given time throughout the construction process.

Construction activities would generate noise from heavy construction equipment and construction-related traffic. A typical construction site would be expected to generate noise levels of about 85 dBA at 50 feet from the center of construction activity. Most of the construction noise sources would be located at or near ground level, which would help attenuate noise levels. The estimated noise from a representative construction site at increasing distances from the site is provided in Table 4.7-3.

TABLE 4.7-2

Noise Level Ranges of Typical Construction Equipment

EQUIPMENT	TYPICAL RANGE IN DECIBELS (dBA) ^a
Truck	82-95
Front Loader	73-86
Backhoe	73-95
Vibrator	68-82
Saws	72-82
Pneumatic Impact Equipment	83-88
Jackhammers	81-98
Pumps	68-72
Generators	71-83
Compressors	75-87
Concrete Mixers	75-88
Concrete Pumps	81-85
Pile Driving (peaks)	95-107
Tractor	77-98
Scrapers, Graders	80-93
Pavers	85-88
Cranes	75-89

^a City of Los Angeles, 2006. Levels are in dBA at 50-foot reference distance.

TABLE 4.7-3

Noise Level Attenuation at a Representative Construction Site

DISTANCE FROM CONSTRUCTION NOISE SOURCE	ESTIMATED NOISE LEVEL (dBA)
50	85
100	79
200	73
400	67
800	61
1,600	55
3,200	49
6,400	43

Assuming construction activities of about 85 dBA at 50 feet from the center of construction activity and using an estimated six dBA reduction for every doubling of distance, the noise levels are expected to decrease about 61 dBA at about 800 feet from construction activities.

The potential noise impact of construction activities would vary depending on the existing noise levels in the environment and the location of sensitive receptors (e.g., residents, hotels, hospitals, etc.) from proposed construction activities. Because no specific projects are currently proposed, the noise impacts are speculative. Nonetheless, construction activities associated with control measures in the 2012 AQMP could occur throughout the Basin. The 2012 AQMP may require existing commercial or industrial owners/operators of affected facilities to install air pollution control equipment or modify their existing operations to reduce stationary source emissions. Potential modifications would occur at facilities typically located in appropriately zoned industrial or commercial areas. Installing air pollution control equipment could generate noise impacts, but virtually all of the control equipment would be installed within industrial and commercial facilities, so that construction noise impacts at stationary sources on sensitive receptors are expected to be less than significant.

The 2012 AQMP may also require construction of overhead catenary lines or other similar technologies along existing roadways and transportation corridors. Noise levels from the existing roadways and transportation corridors that could be impacted by these control measures (e.g., ONRD-03, ONRD-05, ADV-01 and ADV-02) are expected to be high as they are heavily traveled transportation corridors (e.g., Terminal Island Freeway and Alameda Street). The construction of catenary lines or similar technologies would result in additional noise sources (e.g., heavy construction equipment) near these transportation corridors. There are residential areas and other sensitive receptors near some of these transportation corridors that include: 1) the western portions of the City of Long Beach near and adjacent to the Terminal Island Freeway and near Sepulveda Boulevard; 2) residents in the City of Wilmington near Alameda Street; and, 3) residents in the City of Carson and other cities and jurisdictions along Alameda Street. Some of these residents are located within several hundred feet of the existing roadways so noise levels associated with construction activities could be in the range of 65-75 dBA, which could result in noise increases of three dBA or greater and generate significant impacts.

Vibration associated with ground-borne sources is generally not a common environmental problem. However, construction activities such as blasting, pile driving, and heavy earth-moving equipment are potential sources of vibration during construction activities. As described for construction noise impacts, some residents are located with several hundred feet of the existing roadways and construction activities could result in noticeable vibration impacts.

Project construction would involve equipment and activities that may have the potential to generate groundborne vibration. In general, demolition of structures during construction generates the highest levels of vibration. The FTA has published standard vibration levels and peak particle velocities for construction equipment operations (FTA, 2006). The approximate velocity level and peak particle velocities for large construction equipment are listed in Table 4.7-4. Ground-borne vibration is quantified in terms of decibels, since that

scale compresses the range of numbers required to describe the oscillations. The FTA uses vibration decibels (abbreviated as VdB) to measure and assess vibration amplitude. In the United States, vibration is referenced to one micro-inch/sec (25.4 micro-mm/sec) and presented in units of VdB.

The FTA recommends using an estimated six VdB reduction for every doubling of distance (FTA, 2006). Using the FTA methodology, the VdB would range from 40 to 82 VdB within 200 feet from construction activities, depending on the type of equipment used. The predicted vibration during construction activities can be compared to the significance threshold of 72 VdB. Vibration from construction activities could exceed the 72 VdB threshold for structures and sensitive receptors within 200 feet of construction activities, if certain types of construction equipment are used. Therefore, vibration impacts associated with construction activities are potentially significant.

TABLE 4.7-4
Representative Construction Equipment Vibration Impacts

EQUIPMENT	APPROXIMATE PEAK PARTICLE VELOCITY AT 25 FT. (INCHES/SECOND)^a	APPROXIMATE VELOCITY LEVEL AT 25 FT. (VdB)^a	APPROXIMATE VELOCITY LEVEL AT 200 FT. (VdB)^a
Pile Driver typical	0.644	100	82
Vibratory Roller	0.210	94	76
Large Bulldozers	0.089	87	69
Loaded Trucks	0.076	86	68
Jackhammer	0.035	79	61
Small Bulldozer	0.003	58	40

a. Source: FTA, 2006. Data reflects typical vibration level.

Construction activities are often limited to daytime hours to prevent noise impacts during the more sensitive nighttime hours. However, transportation-related construction activities often occur during the evening/nighttime hours to minimize traffic impacts during the more heavy traffic periods. For example, construction activities related to catenary overhead lines may occur during the evening/nighttime hours to minimize traffic conflicts, as construction would be expected along existing roads and transportation corridors. Therefore, there is the potential for significant noise and vibration impacts during construction activities.

Workers exposed to noise sources in excess of 90 dBA for an eight-hour period would be required to wear hearing protection devices that conform to Occupational Safety and Health Administration/National Institute for Occupational Safety and Health (NIOSH) standards.

Operational Activities: As discussed above, the 2012 AQMP may require existing commercial or industrial owners/operators of affected facilities to install air pollution control equipment or modify their existing operations to reduce stationary source emissions. Potential modifications would occur at facilities typically located in appropriately zoned industrial or commercial areas. Installing air pollution control equipment on stationary sources could generate noise and vibration impacts, but virtually all of the control equipment would be installed within industrial and commercial facilities. Further, noise

requirements and noise ordinances would continue to apply to stationary sources, so that noise impacts on sensitive receptors are expected to be less than significant.

Wayside electrification/magnetizing could be installed as a result of implementing Control Measures ONRD-03, ONRD-05, ADV-01 and ADV-02. Installation of catenary lines/rail electrification would likely occur along existing transportation corridors and railways and is not expected to require constructing new roadways or corridors. It is not expected that trucks and locomotives using wayside sources of electricity electric would be louder than non-electrified mobile sources. Indeed, electric motors connected to wayside power would likely be quieter than diesel mobile sources because electric motors have fewer moving parts. Further, wayside power would likely be installed on major transportation corridors where noise levels are already high and, often, are the major noise sources in many areas, especially industrial areas and near the ports. Therefore, operational noise and vibration impacts associated with the 2012 AQMP are expected to be less than significant.

Noise Impacts Mitigation: The impact of the proposed project on local noise levels during construction, although temporary in nature, could be significant. In order to mitigate potential noise impacts during construction activities, project-specific information would be necessary in order to first identify the specific impacts (e.g., project location, distance of roadway to be altered, etc.) to develop appropriate mitigation measures.

Ultimately, mitigation measures for construction would need be identified on a project-by-project basis and would be the responsibility of the lead agencies based on their underlying legal authority to mitigate project impacts. For example, in the Draft Program EIR prepared for SCAG's 2012-2035 Regional Transportation Plan/Sustainable Communities Strategy, mitigation measure TR29 (MM-TR29) identifies noise mitigation measures during construction as follows:

NO-1: To reduce noise impacts due to construction, project sponsors may require construction contractors to implement a site-specific noise reduction program, subject to the Lead Agency (or other appropriate government agency) review and approval, which includes the following measures:

- Equipment and trucks used for project construction may utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- Except as may be exempted by the Lead Agency (or other appropriate government agency), impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for project construction may be hydraulically or electrically powered to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust may be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves may be used, if such jackets are commercially available and this could achieve a reduction of five dBA. Quieter procedures may be used, such as drills rather than impact equipment, whenever such procedures are available and consistent with construction procedures.

- Stationary noise sources may be located as far from adjacent sensitive receptors as possible and they may be muffled and enclosed within temporary sheds, incorporate insulation barriers, or use other measures as determined by the Lead Agency (or other appropriate government agency) to provide equivalent noise reduction.

NO-2: Prior to the issuance of a building permit, along with the submission of construction documents, each project sponsor may submit to the Lead Agency (or other government agency as appropriate) a list of measures to respond to and track complaints pertaining to construction noise. These measures may include:

- A procedure and phone numbers for notifying the Lead Agency staff and local Police Department (during regular construction hours and off-hours);
- A sign posted on-site pertaining with permitted construction days and hours and complaint procedures and who to notify in the event of a problem. The sign may also include a listing of both the Lead Agency and construction contractor's telephone numbers (during regular construction hours and off hours);
- The designation of an on-site construction complaint and enforcement manager for the project;
- Notification of neighbors and occupants within 300 feet of the project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity; and
- A preconstruction meeting may be held with the job inspectors and the general contractor/on-site project manager to confirm that noise measures and practices (including construction hours, neighborhood notification, posted signs, etc.) are completed.

NO-3: Project sponsor may implement use of portable barriers in the vicinity of sensitive receptors during construction including construction of subsurface barriers, debris basins, and storm water drainage facilities.

NO-4: For projects that require pile driving or other construction noise above 90 dBA in proximity to sensitive receptors, to further reduce potential pier drilling, pile driving and/or other extreme noise generating construction impacts greater than 90dBA, a set of site-specific noise attenuation measures may be completed under the supervision of a qualified acoustical consultant. Prior to commencing construction, a plan for such measures may be submitted for review and approval by the Lead Agency (or other appropriate government agency) to ensure that maximum feasible noise attenuation would be achieved. This plan may be based on the final design of the project. A third-party peer review, paid for by the project sponsor, may be required to assist the Lead Agency in evaluating the feasibility and effectiveness of the noise reduction plan submitted by the project sponsor. The criterion for approving the plan may be a determination that maximum feasible noise attenuation would be achieved. The noise reduction plan may include, but not be limited to, an evaluation of implementing the following measures. These attenuation measures may include as many of the following control strategies as applicable to the site and construction activity:

- Erect temporary plywood noise barriers around the construction site, particularly along on sites adjacent to residential buildings;
- Implement “quiet” pile driving technology (such as pre-drilling of piles, the use of more than one pile driver to shorten the total pile driving duration), where feasible, in consideration of geotechnical and structural requirements and conditions;
- Utilize noise control blankets on the building structure as the structures are erected to reduce noise emission from the site;
- Evaluate the feasibility of noise control at the receivers by temporarily improving the noise reduction capability of adjacent buildings by the use of sound blankets for example and implement such measure if such measures are feasible and would noticeably reduce noise impacts; and
- Monitor the effectiveness of noise attenuation measures by taking noise measurements.

NO-5: Noise generated from any rock-crushing or screening operations performed within 3,000 feet of any occupied residence may be mitigated by the project sponsor by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by the local jurisdiction.

NO-6: Where feasible, pile holes may be pre-drilled to reduce potential noise and vibration impacts.

NO-7: As necessary, each project sponsor may retain a structural engineer or other appropriate professional to determine threshold levels of vibration and cracking that could damage any adjacent historic or other structure subject to damage, and design means and construction methods to not exceed the thresholds.

NO-8: Project sponsors may comply with all local sound control and noise level rules, regulations, and ordinances.

NO-9: As part of the appropriate environmental review of each project, a project specific noise evaluation may be conducted and appropriate mitigation identified and implemented.

Remaining Noise Impacts: The noise impacts from the proposed project are expected to be significant prior to mitigation. While generally mitigation measures could help minimize some of the noise impacts, SCAQMD cannot predict how a future lead agency might choose to mitigate a particular significant noise impact. Thus, the potential exists for future noise impacts to be significant even after feasible mitigation measures are identified and imposed. Therefore, noise impacts that may occur as a result of implementing the 2012 AQMP are expected to remain significant.

4.7.5 Summary of Noise Impacts

The following is the summary of the noise and vibration impacts associated with implementation of the 2012 AQMP.

- Noise and vibration impacts would be temporary in nature and related solely to construction activities, but could be significant.
- No modification to existing rail or truck traffic routes/corridor is expected; therefore, noise and vibration impacts associated with operational activities are expected to be less than significant.

Summary of PM_{2.5} Control Measure Impacts: PM_{2.5} Control Measures were evaluated and it was determined that noise and vibration impacts would be limited to construction activities associated with air pollution control activities. Construction noise/vibration impacts associated with these activities are expected to be less than significant as they will occur within appropriately zoned industrial and commercial areas, impacts are temporary and limited to construction activities, and construction noise/vibration impacts to sensitive receptors would not be expected.

Summary of Ozone Control Measure Impacts: Three Ozone Control Measures could result in the construction of overhead catenary lines. The potential noise/vibration impacts of the Ozone Control Measures during the construction phases were determined to be significant, mitigation measures were imposed, however, construction noise/vibration impacts could remain significant in areas where sensitive receptors are located near transportation corridors.