

3.9 NOISE

3.9.1 Introduction

This section of the Draft SEIR evaluates the potential for noise and groundborne vibration impacts resulting from implementation of the proposed project. This includes the potential for the project to cause a substantial temporary and/or permanent increase in ambient noise levels in the vicinity of the project site; exposure of people to excessive noise levels, groundborne vibration, or groundborne noise level; and whether this exposure is in excess of standards established in the local general plan or noise ordinance. While the project site is not within two miles of any public use airport or any airport land use plan, it is anticipated that aircraft associated with advertisements (blimps and banner aircraft) could be operated over the stadium during special events. As such, potential noise impacts associated with the operation of these aircrafts on people residing or working in the project area would also be analyzed. Although a private helipad is located in the vicinity of the project site, it is considered to be an existing use and thus would not expose people residing in the project area to excessive noise levels.

As the number of events would not increase as a result of the revised project, and because construction activities would be substantially similar to those analyzed for the proposed project, the baseline conditions as set forth in the FEIR would be unchanged.

3.9.2 Environmental Setting

As described on page 3.9-4 through 3.9-5 of the FEIR, during major sporting events at the Rose Bowl, which occurs primarily on weekends, crowd noise generated at the stadium is the primary source of noise at the project site during an event. Based on data from 1994 to 2003, an average of twelve displacement events have been held annually at the stadium. Any additional events would require the obtainment of a permit from the City Council. In addition to the Rose Bowl, the Rose Bowl Aquatic Center is also considered to be a primary source of noise due to activity from swim meets. According to the 2002 Revised Noise Element of the City of Pasadena General Plan, sound levels measured in the vicinity of the Aquatic Center during a swim meet in 1996 indicated that noise levels were still within the “clearly acceptable” and “normally acceptable” range for residential uses. When major events are not taking place at the Rose Bowl stadium or Aquatic Center, vehicular traffic is the primary source of noise at, and around, the project site.

As the revised project will reduce the overall number of seats within the Rose Bowl and not increase displacement events, no revised traffic study was performed. For operation, it is assumed that traffic will be substantially the same as the current level due to the fact that the revised project will not increase the number of events at the stadium. Therefore, this Draft SEIR relies upon the roadway noise levels as illustrated on pages 3.9-5, 3.9-7 and 3.9-8 to determine existing roadway noise levels.

3.9.3 Regulatory Framework

As stated in the FEIR, there are no federal or state regulations pertaining to noise that would be applicable to the revised project. The proposed project would be required to comply with the Goals and Policies of the City of Pasadena General Plan Noise Element as described on page 3.9-9 of the FEIR, and *Pasadena Municipal Code* Sections 9.36 et seq. The revised project would not change the consistency of the proposed project with the General Plan, because the proposed project would not increase the use or number of vehicle trips associated with the revised project from that evaluated in the FEIR.

3.9.4 Methodology

The analysis in this section focuses on the nature and magnitude of the change in the noise environment associated with implementation of the revised project. The nature of noise that is currently generated at the project site would not change, which typically consists of sports and music events. The primary sources of noise associated with the proposed project would be construction activities and project-related traffic volumes during events. However, because there are no additional displacement events, traffic levels would remain substantially the same as baseline conditions with implementation of the revised project. Secondary sources of noise would include new sound systems associated with the stadium. The noise from human activity would remain substantially the same as it is today. Any increase in project site noise levels generated by these activities and other sources have been quantitatively estimated and compared to the applicable noise standards and thresholds of significance.

3.9.5 Thresholds of Significance

The FEIR indicated that the proposed project would result in significant environmental impacts to noise if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
- Expose persons to or generate excessive groundborne vibration or groundborne noise levels
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project
- Expose people residing or working in the project area to excessive noise levels associated with the operation of advertisement-related aircrafts (e.g., blimps, banner aircrafts) during special events

3.9.6 Revised Project Impacts and Mitigation Measures

The Initial Study for the original project indicated that there are no airports within two miles of the project site, and the project site is not located within an airport land use plan. In addition, as an existing use, the private helipad that is located in the vicinity of the project site would not expose residents or workers in the project area to increased noise levels. Thus, these issues are considered to be an Effect

Not Found to Be Significant for the same reason found in the FEIR, and are not further discussed in this Draft SEIR.

Threshold	Would the revised project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?
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Impact 3.9-1 **The revised project could expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. This is a potentially significant impact. Implementation of mitigation measures MM 3.9-1 through MM 3.9-3 would reduce this impact to *less than significant*.**

Implementation of the proposed revised project would result in the installation of new and upgraded heating, ventilation, and air conditioning (HVAC) systems in the interior spaces of the Rose Bowl. Large HVAC systems associated with the stadium could result in noise levels that average between 50 and 65 dBA L_{eq} at 50 feet from the equipment. As discussed in Impact 3.9-1 of the FEIR, the property lines of the nearest residential uses, which are located on North Arroyo Boulevard east of Rosemont Avenue, are located approximately 200 feet from the edge of the nearest stadium parking lots (Lot B and D) and 600 feet from the edge of the Rose Bowl stadium. As such, the new mechanical equipment installed and operated at the Rose Bowl would not expose the nearby residential uses to noise levels that exceed the City's 70 dBA CNEL exterior standard for single-family residential uses.⁴ In addition, the noise levels from the new HVAC systems are not anticipated to be greater than the current noise levels generated by the existing HVAC systems. The new HVAC systems would be more state-of-the-art and energy efficient than the existing systems, and would be upgraded to exceed industry standards. Thus, the new systems would likely generate lower noise levels. Therefore, this impact would remain less than significant.

Construction of the proposed revised project would result in approximately fifty-four truck trips per day during the excavation phase at the project site, similar to the original project. Following the excavation phase, it is estimated that the truck trips would fall in the range of approximately twenty-five to thirty-five trips per day. These trucks would use the construction haul route, which consists of Seco Street, Mountain Street, and the I-210 (Foothill) Freeway, as discussed in the FEIR. Based on the information presented in Table 3.9-7 of the FEIR, noise levels generated by these trucks could reach approximately 67.4 dBA L_{eq} at 50 feet. Residential uses located along Seco Street and Mountain Street would be exposed to noise levels below the City's standard of 85 dBA L_{eq} . As such, impacts associated with truck trips during construction of the proposed project would remain less-than-significant.

The proposed revised project involves the rehabilitation and alteration of the Rose Bowl, including the construction of new improvements under and outside the existing footprint of the stadium. As implementation of the proposed project would require demolition and renovation activities, as well as

⁴ As described in Section 3.9.1 (Introduction) of this document, CNEL is a 24-hour average L_{eq} with a 10 dBA "penalty" added to noise during the hours of 10:00 P.M. to 7:00 A.M., and an additional 5 dBA penalty during the hours of 7:00 P.M. to 10:00 P.M. to account for noise sensitivity in the evening and nighttime. As such, noise levels are greater when represented in CNEL than L_{eq} .

parking, circulation, and landscaping improvements, the use of heavy equipment for site excavation, installation of utilities, paving, and building fabrication would occur at the project site, similar to the original project. Construction activities would also involve the use of smaller power tools, generators, and other sources of noise. During each stage of construction there would be a different mix of equipment operating, and noise levels would vary based on the amount of equipment in operation and the location of the activity.

The EPA has compiled data regarding the noise generating characteristics of typical construction activities. This data is presented in Table 3.9-8 of the FEIR. These noise levels would diminish rapidly with distance from the construction site at a rate of approximately 6 dBA per doubling of distance. For example, a noise level of 86 dBA measured at 50 feet from the noise source to the receptor would reduce to 80 dBA at 100 feet from the source to the receptor, and reduce by another 6 dBA to 74 dBA at 200 feet from the source to the receptor.

The uses nearest the project site that are sensitive to construction noise are the single-family dwelling units that are located along residential street segments surrounding the general vicinity of the Rose Bowl. As discussed in Impact 3.9-1 of the FEIR, the property lines of the nearest residential uses are located approximately 200 feet from the edge of the stadium's nearest parking lots (Lot B and D) and 600 feet from the edge of the Rose Bowl stadium. Based on the information presented in Table 3.9-8 of the FEIR, construction activities occurring at the parking area located immediately east of the stadium could reach approximately 74 dBA L_{eq} during the daytime at the property lines of these residential uses. These noise levels would not exceed the city's standard of 85 dBA L_{eq} . In addition, construction activities at the project site would also be limited to the hours of 7:00 A.M. to 7:00 P.M. on Monday through Friday and 8:00 A.M. to 5:00 P.M. on Saturday in accordance with the city's Noise Ordinance (*Pasadena Municipal Code* Title 9.36.110). As such, the impact associated with construction noise would be less than significant.

Although the typical outdoor construction noise levels generated by the proposed project would generally not exceed the City's noise level standard, pile driving may occur during construction of the proposed revised project. As discussed in Section 3.9 of the FEIR the nearest residential uses that are located approximately 600 feet from the Rose Bowl stadium could experience noise levels from pile driving that exceed the City's noise level standard of 85 dBA L_{eq} . In addition, due to the acoustic nature of the canyon encompassing the Rose Bowl, the noise levels resulting from pile driving would also be amplified. Thus, pile driving associated with construction of the proposed revised project could generate noise levels that exceed the standards established in the City of Pasadena Noise Regulations, and this would be a potentially significant impact. Implementation of mitigation measure MM 3.9-1 in the FEIR would require the use of site-specific noise attenuation measures, including the use of "quiet" pile driving technology, to reduce the noise levels generated from pile driving at the project site. In addition, implementation of mitigation measure MM 3.9-2 in the FEIR would also require the issuance of proper noticing procedures by the project applicant prior to the issuance of the building permit to inform the public of when pile driving activities would occur. With implementation of the mitigation measures and adherence to the City's Noise Ordinance pertaining to pile driving, this impact would be reduced to a less-than-significant level.

As is true for the college football games at the stadium, the primary sources of noise would be crowd noise (yelling, applauding, etc.) and the noise from the loudspeaker system. The actual noise levels that would occur would be extremely variable and would depend on such factors as attendance numbers, the level of crowd excitement, and the placement and volume of the loudspeaker system. The highest sound levels generated by the crowd noise and loudspeaker system may persist for only a few seconds or may last for a much longer period.

For the purpose of analysis, future events on the proposed project site would be similar to noise levels during an existing college football game at the stadium. Table 3.9-3 of the FEIR shows the noise levels at selected off-site sensitive locations, which consist of residential uses, during a UCLA football game at the Rose Bowl in 2003. As shown in Table 3.9-3 of the FEIR, the highest noise level experienced at the property lines of the off-site sensitive locations, including crowd noise and noise from the loudspeaker system, is 60.0 dBA L_{eq} . Periodic increases in ambient noise levels are primarily due to the increase in traffic from events and have been detailed in Impact 3.9-7 and Impact 3.9-8. As such, implementation of the proposed project would not expose nearby residential uses to noise generated from the stadium's loudspeaker system on more occasions over the course of a year due to additional displacement events that would not be held at the Rose Bowl, unlike the original project. However, to ensure that the noise levels generated from the loudspeaker system and potential changed acoustics resulting from renovations of the Rose Bowl Stadium would meet the City's Noise Regulations, MM 3.9-3 would be implemented, which requires the periodic monitoring of stadium noise levels during the first year of operation for special events and, if deemed necessary, the subsequent modification of the sound system at the stadium to reduce the noise levels to the maximum degree feasible. Implementation of MM 3.9-3 would reduce potential impacts from the stadium sound system to a less-than-significant level.

MM 3.9-1 To mitigate potential pile driving or other extreme noise-generating impacts, a set of site-specific noise attenuation measures shall be completed under the supervision of a qualified acoustical consultant. This plan shall be submitted for review and approval by the City to ensure that feasible noise attenuation is achieved to satisfy standards contained in the City of Pasadena Noise Ordinance. These attenuation measures shall include as many of the following control strategies as feasible and shall be implemented prior to any required pile driving activities:

- *Implement "quiet" pile driving technology (e.g., cast-in-drilled hole piles, soil-mix wall technology, shielded pile drivers, vibratory pile driving or pre-drilled pile holes), where feasible, in consideration of geotechnical and structural requirements and conditions*
- *Erect temporary plywood noise barriers around the entire construction site*
- *Adjust the scheduling and duration of pile driving*
- *Monitor the effectiveness of noise attenuation measures by taking noise measurements during pile driving activities*

MM 3.9-2 Prior to the issuance of each building permit, along with the submission of construction documents, the Project Applicant shall submit to the City a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include the following:

- *A procedure for notifying City staff*

- *A plan for posting signs on the project site pertaining to permitted construction days and hours, complaint procedures, and who to notify in the event of a problem*
- *A listing of telephone numbers (during regular construction hours and off hours)*
- *The designation of an on-site construction complaint manager for the proposed project*
- *Notification of residents within 800 feet of the proposed project construction area at least 30 days in advance of pile-driving along with the estimated duration of the activity*

Implementation of MM 3.9-1 would ensure that noise attenuation measures would be implemented at the project site during pile driving to satisfy the noise standards contained in the City of Pasadena Noise Ordinance, while MM 3.9-2 would ensure that the residential uses located around the Rose Bowl stadium would be notified in advance of pile driving and the estimated duration of the activity. Implementation of these mitigation measures along with adherence to the construction time restrictions for pile driving in the City Noise Ordinance would ensure that the noise levels resulting from potential pile driving at the project site would be minimized and reduced to a less-than-significant level.

The following mitigation measure would reduce the impact associated with potentially significant noise levels from the loudspeaker system at the Rose Bowl stadium to a less-than-significant level:

- MM 3.9-3
- (a) *Prior to installation of the new sound system, the project operator shall present a noise analysis to the City that demonstrates that the new sound system will meet the City's Noise Regulations.*
 - (b) *Stadium noise level in the residential areas surrounding the project site shall be monitored periodically during the first year of operation by the operator in cooperation with the City.*
 - (c) *Based on the monitoring results, the operator shall modify operation of the loudspeaker system to reduce noise levels observed at the residential areas to meet City Noise Regulations. Modifications may include adjustments to volumes or relocation of individual loudspeakers and shall ensure any necessary modifications to provide the maximum feasible reduction of noise to the surrounding community.*
 - ~~(d) *Prior to the first special event associated with a NFL football game at the Rose Bowl, the operator shall develop noise performance standards for the stadium loudspeaker system to minimize noise effects at the residential areas surrounding the Rose Bowl. The performance standards shall specify a noise limit and may include suggestions for sound equipment orientation or other measures. The performance standards shall be subject to review and approval by the Director of Community Development.*~~

Implementation of MM 3.9-3 would ensure that the new loudspeaker system installed at the Rose Bowl stadium would not generate noise levels that exceed the City's noise level standards.

Impacts associated with construction and operational noise from the revised project would be ***less than significant***.

Threshold	Would the revised project expose persons to or generate excessive groundborne vibration or groundborne noise levels?
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Impact 3.9-2 **The revised project would not expose persons to or generate excessive groundborne vibration or groundborne noise levels. This impact is *less than significant*.**

Construction activities that would occur under the proposed revised project have the potential to generate low levels of groundborne vibration, similar to the original project. Table 3.9-6 (Vibration Source Levels for Construction Equipment) in the FEIR identified various vibration velocity levels for the types of construction equipment that would operate at the project site during construction. The construction activities would not be significantly different from those analyzed in the FEIR, nor would they be significantly closer to sensitive receptors in the project vicinity, which were identified as the existing single-family dwelling units that are located along residential street segments surrounding the general vicinity of the Rose Bowl. The property lines of the nearest residential uses, which are located on North Arroyo Boulevard east of Rosemont Avenue, are located approximately 200 feet from the edge of the nearest stadium parking lots (Lot B and D) and 600 feet from the edge of the Rose Bowl stadium. Based on the information presented in Table 3.9-6 of the FEIR, vibration levels could reach approximately 75 VdB within 100 feet of the project site. Given that the residential properties nearest to the Rose Bowl stadium are located approximately 200 feet away from the nearest parking lot, vibration levels experienced by these residential uses would be less than 75 VdB. In addition, heavy trucks would also be used to transport materials to and from the project site when construction activities occur. Based on coordination with the City of Pasadena Department of Transportation, the construction haul route would include use of Seco Street, Mountain Street, and the I-210 (Foothill) Freeway, similar to the original project analyzed in the FEIR. These trucks typically generate groundborne vibration velocity levels of around 63 VdB. These levels could reach 72 VdB where trucks pass over bumps in the road. As the expected levels of groundborne vibration resulting from construction of the proposed revised project would be less than the Federal Railway Administration's 80 VdB vibration impact threshold for residences, construction during the implementation of the proposed project would not expose off-site persons to excessive groundborne vibration or groundborne noise levels, and this impact would be *less than significant*.

Threshold	Would the revised project expose people residing or working in the project area to excessive noise levels associated with the operation of advertisement-related aircrafts (e.g., blimps, banner aircrafts) during special events?
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Impact 3.9-3 **The revised project would not expose people residing or working in the project area to excessive noise levels associated with the operation of advertisement-related aircrafts (e.g., blimps, banner aircrafts) during special events. This impact is *less than significant*.**

The area west of the Rose Bowl is noise sensitive to aircraft. During some of the events associated with the proposed revised project, it is anticipated that advertisement-related aircrafts such as blimps or banner aircrafts would operate in the general airspace above the Rose Bowl. Operation of these aircrafts

already occur over the project area during existing special events at the Rose Bowl (e.g., UCLA games) and the frequency of these flights by advertisement-related aircrafts would not increase as a result of implementation of the proposed project. As such, this impact would remain *less than significant*.

Threshold	Would the revised project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?
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Impact 3.9-4 **The revised project would not cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. This impact is *less than significant*.**

As discussed in Impact 3.9-7 of the FEIR, the original project would result in additional displacement events that would increase the temporary or periodic ambient noise levels in the project vicinity. Under the proposed revised project, the number of displacement events would not change, and as such, the proposed revised project would not result in an increase in the number of temporary or periodic ambient noise increases, nor would the proposed revised project result in an intensification of the periodic increase in ambient noise that currently occurs on the project site. As a result, while the original project would result in a significant and unavoidable impact with respect to the temporary or periodic increases in ambient noise, this impact would be less than significant under the proposed revised project.

Implementation of the proposed revised project would not include additional weekday displacement events or increased intensity of weekday displacement events over those which currently happen at the project site under existing conditions. As such, the proposed project would not increase noise levels at residential locations adjacent to roadways surrounding the project site over those that currently occur. Attendance at special events at the Rose Bowl stadium would be similar to existing conditions under the proposed revised project and would not result in a significant increase in ambient traffic noise levels over those that currently occur. As the proposed revised project would not result in an increase in ambient traffic noise levels or a periodic increase in traffic noise levels over those that currently occur in the vicinity of the project site, this impact would be *less than significant*.

3.9.7 Cumulative Impacts

A cumulative impact analysis is only provided for those thresholds that result in a less-than-significant or significant and unavoidable impact. A cumulative impact analysis is not provided for those thresholds where there are no project-related impacts.

The geographic context for the analysis of cumulative noise impacts is the City of Pasadena. The proposed revised project would reduce impacts to noise and vibration associated with increased permanent and temporary ambient traffic noise levels to less-than-significant levels. As the proposed revised project would not increase traffic noise levels over those that currently occur under operation of the Rose Bowl stadium, the proposed revised project would not result in a cumulatively significant increase in ambient noise levels during operation. In addition, construction activities and equipment that would operate during the construction of the proposed revised project would be similar to that of the

original project analyzed in the FEIR. As was discussed in the FEIR, in order to achieve a substantial cumulative increase in construction noise and vibration levels, construction activities would need to occur on a property adjacent to the Rose Bowl site while it is under construction. Because no construction projects are proposed to occur simultaneously on an adjacent property, the cumulative impact from construction on noise and vibration levels is less than significant.

3.9.8 Conclusion

The noise and vibration impacts of the proposed revised project would not result in new significant impacts or a substantial increase in the severity of previously identified significant impacts. The project revisions would reduce the three identified significant and unavoidable impacts of the original project to less than significant, as discussed above. Previously adopted project-specific mitigation measures MM 3.9-1 through MM 3.9-3 will be implemented, and no new or different mitigation measures are required.

