4.10.3 Construction Traffic and Equipment Noise

4.10.3.1 Introduction

The analysis presented in this section addresses potential noise impacts associated with construction-related traffic and operation of construction equipment during development of the SPAS alternatives. Given the conceptual nature of the SPAS alternatives and the absence of any construction schedules or construction plans for those alternatives, which would normally be developed at more detailed levels of planning and provide a basis to delineate construction-related noise assumptions, the construction noise analysis presented herein is at a general, programmatic level.

4.10.3.2 Methodology

Sound is generally characterized by frequency and intensity. Frequency describes the sound's pitch and is measured in hertz (Hz); intensity describes the sound's level, volume, or loudness and is measured in decibels (dB). Sound frequency is a measure of how many times the crest of a sound pressure wave passes a fixed point each second. For example, when a drummer beats a drum, the skin of the drum vibrates at a certain number of times per second. Sound frequencies between 20 Hz and 20,000 Hz are within the range of perception for a sensitive human ear.

The method commonly used to quantify environmental sounds consists of evaluating all the frequencies of a sound according to a weighting system that reflects the reduced sensitivity of human hearing to low frequencies and extremely high frequencies. This frequency-dependent modification is called A-weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve. A sound level of 0 dBA is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal conversational speech has a sound level of approximately 60 dBA. Sound levels above about 120 dBA begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

In general, humans find a change in sound level of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving sound level. Due to the logarithmic scale of the decibel unit, sound levels cannot be added or subtracted arithmetically. If a sound's physical intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example, 60 dB plus 60 dB equals 63 dB, 80 dB plus 80 dB equals 83 dB. However, where ambient noise levels are high in comparison to a new noise source, there will be a small change in noise levels. For example, if 70 dB ambient noise levels are combined with a 60 dB noise source, the resulting noise level equals 70.4 dB.

Construction Traffic Noise

The analysis of construction traffic noise impacts focused on off-airport areas by: (1) identifying major roadways near the airport that may be used for construction worker commute routes or truck haul routes; (2) generally identifying the nature and location of noise-sensitive receptors along those routes; and (3) evaluating the traffic characteristics along those routes, specifically as related to existing traffic volumes. Acoustic energy is additive in nature. For example the sound energy of two identical vehicles is twice as great as that for one vehicle, and so on; however, the relationship for sound pressure level (SPL), measured in decibels, is logarithmic, not arithmetic. For example, when the energy is doubled, the SPL increases by 3 dB. Therefore, while the energy is doubled when the volume of traffic is doubled, the SPL would increase from, say, 60 to 63 dBA. Continuing with this relationship, because the scale is logarithmic, adding another vehicle and tripling the energy would not result in another 3 dBA increase, but would result in a lesser increase. If traffic conditions on a road are good (Level of Service [LOS] A or B), sound levels increase at a rate of 3 dBA per doubling of traffic volume. However, when traffic conditions are already at LOS C, D, E, or F, increased traffic volumes (including construction traffic) may result in decreasing speeds, and traffic noise would get progressively quieter based on reduced engine operation

levels, reduced drive-train and tire rotations, and reduced wind shear. On roads with good traffic conditions, roadway traffic volumes would have to increase more than three-fold to reach a 5 dBA increase. Traffic would have to increase even more on roads with poor operating conditions (LOS C or worse) to reach the 5 dBA increase (see Section 4.10.3.4 below).

Construction Equipment Noise

Construction activities typically generate noise from the operation of equipment required for demolition and construction of various facilities. **Table 4.10.3-1** lists the range of typical noise levels associated with basic construction equipment types. The actual noise level would vary, depending upon the equipment model and the type of work activity being performed.

Table 4.10.3-1

Typical Construction Equipment Noise Levels

Equipment	Noise Level (dBA) at 50 feet
Compactor (Rollers)	72 - 74
Front Loaders	72 - 84
Backhoes	72 - 93
Tractors	72 - 95
Scrapers, Graders	80 - 93
Pavers	85 - 87
Trucks	81 - 95
Concrete Mixers	74 - 87
Concrete Pumps	81 - 84
Cranes (Moveable)	74 - 88
Cranes (Derrick)	86 - 88
Pumps	69 - 71
Generators	72 - 82
Compressors	74 - 88
Pneumatic Wrenches	82 - 88
Jack Hammers and Rock Drills	81 - 95
Pile Driver (Peaks)	93 - 108
Vibrator	69 - 81
Saws	72 - 81

Source: U.S. Environmental Protection Agency, Noise from Construction Equipment & Operations, December 31, 1971.

Noise levels from outdoor construction activities, independent of background ambient noise levels, indicate that the noisiest phases of construction are typically during excavation and grading, and that noise levels from equipment with mufflers are typically 86 dBA L_{eq}[592] at 50 feet from the noise source. This type of sound typically dissipates at a rate of 4.5 dBA to 6.0 dBA for each doubling of distance. Based on a sound dissipation rate of 4.5 dBA per doubling of distance, a sound level of 86 dBA at 50 feet from the noise source would be approximately 81.5 dBA at a distance of 100 feet, 77 dBA at a distance of 200 feet, and so on. That sound drop off rate does not take into account any intervening shielding (including landscaping or trees) or barriers, such as structures or hills between the noise source and noise receptor. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction. A higher barrier may provide as much as 20 dB of noise reduction.

Construction equipment noise was evaluated by determining the noise levels generated by typical outdoor construction activity and calculating the potential for exposure to noise-sensitive uses. Representative ambient noise levels (non-construction noise) at the noise-sensitive uses were

592 L_{eq} = equivalent noise level.

determined based on information contained in the LAX Master Plan Final EIR[593] and the airport noise contours shown on a recent quarterly noise monitoring report (i.e., 4th Quarter 2010, the date of publication of the SPAS EIR Notice of Preparation).[594] Construction noise levels were based on typical levels from U.S. Environmental Protection Agency (USEPA) (see **Table 4.10.3-1**). Distances between the noise-sensitive uses and the construction sites were measured and construction noise levels at the sensitive uses were calculated based on standard noise-versus-distance relationships. Impacts were identified if the results exceeded the CEQA thresholds when compared to existing ambient noise levels.

Construction noise typically dissipates at a rate of 4.5 dBA to 6.0 dBA for each doubling of distance. For the SPAS EIR noise analysis, the more conservative attenuation rate of 4.5 dBA was used. Based on typical noise levels associated with construction equipment/activities and a sound dissipation rate of 4.5 dBA for each doubling of distance, calculations were made to determine if the noise from the construction equipment would exceed ambient noise levels by 5 dBA at the locations of noise-sensitive uses.

Notwithstanding that the SPAS alternatives are only conceptual and there are no construction programs or schedules defined at this time, it is anticipated that the majority of construction activities would occur during daytime hours. It is likely, however, that there could be some limited periods when construction activities are scheduled to occur both during the daytime and nighttime hours, as second and third shifts would be used for work activities that cannot be accomplished during the daytime shift (i.e., during large-scale pours of concrete when it would be necessary to maintain a continuous stream of concrete deliveries through multiple shifts, or when it is safer and more efficient to complete airfield improvement work late at night when aircraft activity levels are very low). To evaluate the potential noise impacts of such occurrences, the Community Noise Equivalent Level (CNEL)[595] metric was chosen to quantify the 24-hour noise levels and include a noise weighting "penalty" for noise occurring during evening and nighttime hours. In order to calculate a construction CNEL, hourly activity or utilization factors (i.e., the percentage of normal construction activity that would occur, or construction equipment that would be active, during each hour of the day) were estimated based on the temporal characteristics of other previous and current construction projects at LAX. The hourly activity factors were expressed as the percentage of time that construction activities would emit average noise levels equaling 86 dBA L_{eq} at 50 feet from the activity.[596] The hourly activity levels may be considered average values. Hourly activity factors for an average day were delineated by construction shift estimates used for other major construction projects recently occurring at LAX such as the Bradley West Project. Those hourly activity factors are presented in **Table 4.10.3-2**. The hourly activity factors were used in computing average hourly construction L_{eq} levels, which were then applied a penalty-weighting of 5 dBA to the construction noise levels in the evening (7:00 p.m. to 9:59 p.m.), and 10 dBA during nighttime hours (10:00 p.m. to 6:59 a.m.).

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593 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.1, April 2004.

594 City of Los Angeles, Los Angeles World Airports, California State Airport Noise Standards Quarterly Report, Fourth Quarter 2010, Available: http://www.lawa.org/welcome_lax.aspx?id=1090.

595 CNEL is used in this analysis to describe annual average day noise levels. CNEL, an average sound level expressed in terms of average day A-weighted decibels (dBA) such as "65 dBA CNEL," or simply "65 CNEL," considers both the loudness and duration of exposure.

596 The use of 86 dBA L_{eq} at 50 feet as an overall construction noise level is based on Section 4.1.3.3 (page 4-49) of the LAX Master Plan Final EIR.

Table 4.10.3-2

Estimate of Hourly Construction Activity Levels

	Hour[1]	Hourly Activity Factor
Nighttime	12:00 a.m. - 01:00 a.m.	50%
	01:00 a.m. - 02:00 a.m.	50%
	02:00 a.m. - 03:00 a.m.	0%
	03:00 a.m. - 04:00 a.m.	0%
	04:00 a.m. - 05:00 a.m.	0%
	05:00 a.m. - 06:00 a.m.	0%
	06:00 a.m. - 06:59 a.m.	90%
Daytime	07:00 a.m. - 08:00 a.m.	100%
	08:00 a.m. - 09:00 a.m.	100%
	09:00 a.m. - 10:00 a.m.	100%
	10:00 a.m. - 11:00 a.m.	100%
	11:00 a.m. - 12:00 p.m.	100%
	12:00 p.m. - 01:00 p.m.	100%
	01:00 p.m. - 02:00 p.m.	100%
	02:00 p.m. - 03:00 p.m.	100%
	03:00 p.m. - 04:00 p.m.	100%
	04:00 p.m. - 05:00 p.m.	100%
	05:00 p.m. - 06:00 p.m.	100%
	06:00 p.m. - 06:59 p.m.	100%
Evening	07:00 p.m. - 08:00 p.m.	75%
	08:00 p.m. - 09:00 p.m.	75%
	09:00 p.m. - 09:59 p.m.	75%
Nighttime	10:00 p.m. - 11:00 p.m.	50%
	11:00 p.m. - 12:00 a.m.	50%

[1] No activity expected on Sundays.

Source: CDM Smith, 2012.

Table 4.10.3-3 presents the estimated daily average CNEL construction noise level, whereby each hourly L_{eq} value identified in **Table 4.10.3-2** was weighted according to CNEL weighting factors and averaged together to determine a 24-hour construction site CNEL of 89.0 dBA at 50 feet from the source.

Table 4.10.3-3

Estimated Daily CNEL Construction Noise Level at 50 Feet

	Hour	Hourly Activity Factor	Hourly Average Sound Level (L_{eq})[1]	Weighted-Hourly Average Sound Level (L_{eq} + Penalty[2])
Nighttime	12:00 a.m. - 01:00 a.m.	50%	83.0	93.0
	01:00 a.m. - 02:00 a.m.	50%	83.0	93.0
	02:00 a.m. - 03:00 a.m.	0%	0.0	0.0
	03:00 a.m. - 04:00 a.m.	0%	0.0	0.0
	04:00 a.m. - 05:00 a.m.	0%	0.0	0.0
	05:00 a.m. - 06:00 a.m.	0%	0.0	0.0
	06:00 a.m. - 06:59 a.m.	90%	85.5	95.5
Daytime	07:00 a.m. - 08:00 a.m.	100%	86.0	86.0
	08:00 a.m. - 09:00 a.m.	100%	86.0	86.0
	09:00 a.m. - 10:00 a.m.	100%	86.0	86.0
	10:00 a.m. - 11:00 a.m.	100%	86.0	86.0
	11:00 a.m. - 12:00 p.m.	100%	86.0	86.0
	12:00 p.m. - 01:00 p.m.	100%	86.0	86.0
	01:00 p.m. - 02:00 p.m.	100%	86.0	86.0
	02:00 p.m. - 03:00 p.m.	100%	86.0	86.0
	03:00 p.m. - 04:00 p.m.	100%	86.0	86.0
	04:00 p.m. - 05:00 p.m.	100%	86.0	86.0
	05:00 p.m. - 06:00 p.m.	100%	86.0	86.0
	06:00 p.m. - 06:59 p.m.	100%	86.0	86.0
Evening	07:00 p.m. - 08:00 p.m.	75%	84.8	89.5
	08:00 p.m. - 09:00 p.m.	75%	84.8	89.5
	09:00 p.m. - 09:59 p.m.	75%	84.8	89.5
Nighttime	10:00 p.m. - 11:00 p.m.	50%	83.0	93.0
	11:00 p.m. - 12:00 a.m.	50%	83.0	93.0
Estimated Daily CNEL[3,4]				**89.0**

1 Noise value is calculated by adding the $\log_{10}$ value of the activity factor to 86 dBA L_{eq}.

2 The penalty value added to L_{eq} is the same level used to calculate CNEL to account for the greater sensitivity of nearby land uses in the quieter hours between 7 p.m. and 7 a.m. During evening hours, 4.77 dBA is added to each hourly L_{eq}. During nighttime hours (10 p.m. to 6:59 a.m.), a 10 dBA weighting is applied to each hourly L_{eq}.

3 CNEL represents cumulative sound level 50 feet from the source.

4 Daily CNEL is calculated via the following equation: Average Daily CNEL= 10*[log (Sum of Hourly L_{eq} energy levels)] - 13.8. (13.8 represents the $\log_{10}$ value of 24 hours- 10*log(24)).

Source: CDM Smith, 2012.

Evaluation of Alternatives

As described in Section 2.3.1, Alternatives 1 through 4 are "fully-integrated" alternatives that include specific improvements in airfield improvements, terminal improvements, and ground access improvements. Alternatives 5 through 7 focus on variations to the airfield improvements, which, in turn, affect the terminal improvements. Alternatives 8 and 9 focus on variations to the ground access improvements.

Although the primary focus of Alternatives 5 through 9 is on specific categories of improvements (i.e., airfield improvements and related terminal improvements), there is a certain amount of compatibility or "interchangeability" between the SPAS alternatives. Specifically, the airfield and terminal improvements in Alternatives 5 through 7 are equally compatible with the ground access improvements in Alternatives 1, 2, 8, and 9. Likewise, the ground access improvements in Alternatives 8 and 9 are equally compatible

with the airfield and terminal improvements in Alternatives 1, 2, 5, 6, and 7. In other words, the proposed ground transportation system incorporated into Alternatives 1 and 2 could function in the same manner with Alternatives 5, 6, or 7. That would also be the case for the ground transportation systems under Alternatives 8 and 9, which could be developed under Alternatives 5, 6, or 7, and could also replace the ground transportation system currently proposed for Alternatives 1 and 2. On the other hand, Alternatives 3 and 4 are unique "fully-integrated" alternatives and are not considered to have elements that are "interchangeable" with the other SPAS alternatives.

Based on the above, the construction noise impacts discussion presented in this section distinguishes the impacts associated with airfield improvements[597] from the impacts associated with ground access improvements. This approach allows the reader to understand the construction noise impacts resulting from various combinations of airfield and ground access improvements for Alternatives 5 through 9. For example, the impacts discussions for Alternatives 5 through 7 focus on the specific airfield improvements proposed under each of those alternatives, while the impacts analyses for Alternatives 1, 2, 8, and 9 provide discussions specific to the ground access improvements associated with each of those alternatives. Similarly, the impacts discussions for Alternatives 8 and 9 focus on the specific ground access improvements proposed under each of those alternatives, while the impacts analyses for Alternatives 1, 2, 5, 6, and 7 provide discussions specific to the airfield improvements associated with each of those alternatives. Depending on which combination of airfield improvements and ground access improvements are of interest for Alternatives 5 through 9, the reader is able to discern the construction noise impacts associated with that scenario.

Although the nature and characteristics of terminal improvements may vary between alternatives, depending largely on the airfield improvements specific to each, there are no noise-sensitive receptors located near the Central Terminal Area (CTA). As such, construction noise impacts specific to terminal improvements are not addressed in this section, as no significant impacts are anticipated.

The construction noise impacts analysis presented in this section also addresses potential impacts associated with the development and use of construction staging areas. As described in Section 2.3.1.12, there are seven potential construction staging areas (i.e., Construction Staging Areas A through G) located in the general vicinity of the improvements proposed under the SPAS alternatives. Any or all of the seven potential construction staging areas could be utilized by any of the nine alternatives being considered. As such, the construction noise impacts associated with each construction staging area are considered to be common to all nine alternatives and are discussed accordingly (i.e., presented as one overall discussion as opposed to being broken out alternative by alternative).

The nature and location of the improvements proposed under each of the nine alternatives, as addressed herein relative to construction noise impacts, are shown in Figures 2-1 through 2-9 in Chapter 2, and the locations of the potential construction staging areas are shown in Figure 2-15 in Chapter 2.

4.10.3.3 Existing Conditions

In general, the noise setting at and around LAX is influenced primarily by aircraft operations (takeoffs and landings). The existing aircraft noise levels at and around LAX delineated in the LAX 4th Quarter 2010 noise monitoring report[598] are representative of existing (baseline) ambient noise levels at the time the SPAS EIR Notice of Preparation was published. In addition to aircraft activities, the noise setting around LAX is influenced by major highways including I-405 and I-105, and several major arterial roads including, but not limited to, Imperial Highway, Sepulveda Boulevard, Century Boulevard, and Lincoln Boulevard.

Noise-sensitive receptors in proximity to LAX include residential uses, schools, places of worship, parks, and library uses in Westchester and Playa del Rey to the north, Inglewood and Lennox to the east, and El

[597] Impacts associated with airfield improvements include those from runway and taxiway improvements as well as from related activities, such as realignment of Lincoln Boulevard for certain alternatives and the modification (covering) of the Argo Drainage Channel.

[598] City of Los Angeles, Los Angeles World Airports, California State Airport Noise Standards Quarterly Report, Fourth Quarter 2010, Available: http://lawa.org/uploadedFiles/LAX/pdf/lax4q10%20noise%20contour%20map.pdf, accessed April 17, 2012.

Segundo and Del Aire to the south and southeast, respectively. Areas of residential development are indicated in Figure 4.9-6 in Section 4.9, *Land Use and Planning*, and the locations of specific noise-sensitive receptors are indicated in Figures 4.10.1-7 through 4.10.1-9 in Section 4.10.1, *Aircraft Noise*. Of these noise-sensitive receptors, residential development in Westchester is the closest to areas where improvements associated with the SPAS alternatives are proposed to occur. Residential development in Westchester is directly north of, and adjacent to, LAX Parking Lots C and D and the nearby "Jenny Lot." Such development is also north of the north airfield, but is set back by approximately 0.1 to 0.5 mile due to the intervening vacant LAX Northside lands. There are also several schools within Westchester north of LAX. Additionally, there are currently residential units within the Manchester Square and Belford development areas, as well as two adjacent charter school facilities within Manchester Square. Both of those areas are within the LAX voluntary acquisition program, which is intended to remove existing noise-sensitive residential units from areas subject to high noise levels from aircraft overflights; most of Manchester Square and Belford has been vacated. Existing ambient noise levels in terms of airport-related CNEL are estimated to be between approximately 65 dBA and 70 dBA along the southern edge of Westchester, including at the Saint Bernard High School site, and within Manchester Square and Belford, based on aircraft noise contours from the 4th quarter of 2010. Existing ambient noise levels in the Playa del Rey area, located near the northwest edge of the airport, are approximately 68 dBA CNEL, based on aircraft noise contours from the 4th quarter of 2010.

Existing ambient noise levels in terms of average hourly L_{eq} in that area of Playa del Rey are estimated to be approximately 65 dBA during the daytime (i.e., 7 a.m. to 7 p.m.) and 61 dBA during the evening and nighttime (i.e., 7 p.m. to 7 a.m.), based on noise monitoring data gathered at the LAWA Noise Monitoring Station PDR1 during the week of October 9, 2010 (i.e., the week when the SPAS EIR Notice of Preparation was published). Although such noise monitoring stations do not exist at Saint Bernard High School or along the southern edge of Westchester, existing ambient noise levels are estimated to be comparable to, or maybe slightly less than (i.e., 1 to 2 dBA less, producing an evening/nighttime low of approximately 59 dBA L_{eq}), those at the PDR1 Noise Monitoring Station, based on the relative relationships of those three areas to the noise contour shown on the LAX quarterly noise monitoring report map for 4th quarter of 2010 (i.e., the dominant noise source at all three sites would be aircraft noise with some additional incremental noise contribution for vehicle traffic on nearby roadways). Similarly, average daytime and evening/nighttime L_{eq} ambient noise levels are estimated to be comparable to those at the PDR1 Noise Monitoring Station, based on those sites' relationship to the airport noise contours for 4th quarter of 2010.

Residential development is located east of SPAS improvement areas such as Manchester Square and Continental City, within the communities of Inglewood and Lennox, respectively, with the majority of such development being removed from LAX by the intervening I-405 Freeway. Existing ambient noise levels within those communities adjacent to SPAS improvements areas are estimated to be between 65 dBA and 70 dBA CNEL, based on aircraft noise contours from the 4th quarter of 2010. Average daytime and evening/nighttime L_{eq} ambient noise levels are estimated to be approximately 65 dBA during the daytime and 60 dBA during the evening/nighttime. This estimate is based on the locations of those areas relative to nearby dominant noise sources such as aircraft (see LAX noise contours for 4th quarter of 2010) and their proximity to the 405 Freeway.

Residential development is located south/southeast of LAX in the unincorporated community of Del Aire, approximately 800 feet south of Continental City. This area experiences considerable ambient noise from the I-405 Freeway, the Burlington Northern and Santa Fe railroad, the Metro Green Line, aircraft, and Imperial Highway. The existing ambient noise levels along the northern edge of Del Aire is estimated, in terms of airport-related CNEL, to be approximately 65 dBA, based on aircraft noise contours from the 4th quarter of 2010. Average daytime and evening/nighttime L_{eq} ambient noise levels are estimated to be approximately 65 dBA during the daytime and 60 dBA during the evening/nighttime. This estimate is based on the location of this area relative to nearby dominant noise sources such as aircraft (see LAX noise contours for 4th quarter of 2010) and their proximity to various noise sources noted above. The northern edge of the residential community in Del Aire is lined by an approximately 8-foot-high cinderblock wall, which provides some amount of noise attenuation to the community.

Residential development is also located south of LAX within the City of El Segundo. The vast majority of improvements proposed under the various SPAS alternatives do not occur near El Segundo, with the one most notable exception being the development of the West Employee Parking facility at the west end of the airport under Alternative 3. The location of this proposed facility is over 2,000 feet from the nearest residential area in El Segundo. Existing ambient noise levels in terms of airport-related CNEL range between approximately 73 dBA to 75 dBA along the northern edge of El Segundo, east of Main Street, based on aircraft noise contours from the 4th quarter of 2010. Daytime ambient noise levels in El Segundo next to the airport are estimated to be 65 dBA L_{eq} or higher, owing to both road traffic and aircraft noise, and nighttime noise levels are about 5 dBA lower than during the day.[599] This estimated daytime noise level is generally consistent with recent ambient noise level measurement taken in February 2012 in the vicinity of Imperial Avenue and McCarthy Court, where the 20-minute (length of measurement period) L_{eq} was found to be 65.1 dBA.

4.10.3.4 Thresholds of Significance

Construction Traffic Noise

A significant construction traffic noise impact would occur if the direct and indirect changes in the environment that may be caused by the particular SPAS alternative would result in the following future condition:

- Ambient noise level measured at the property line of affected uses to increase by 3 dBA or more in CNEL.

Construction Equipment Noise

A significant construction equipment noise impact would occur if the direct and indirect changes in the environment that may be caused by the particular SPAS alternative would result in one or more of the following future conditions:

- Construction activities lasting more than ten days in a three month period would exceed baseline ambient exterior noise levels by 5 dBA or more at a noise-sensitive use; or
- Construction activities would exceed the ambient exterior noise level by 5 dBA at a noise-sensitive use between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday.

These thresholds are based on the L.A. CEQA Thresholds Guide. With regard to application of the second threshold, it is anticipated that construction of most, if not all, of the improvements associated with each of the SPAS alternatives would involve construction activities lasting more than ten days in a three month period; hence, that threshold was utilized throughout the construction equipment noise impacts analysis. As further described below, noise levels associated with daily construction activities were estimated for, and averaged over, a 24-hour period, with penalties applied to equipment noise occurring during evening and nighttime hours. Noise levels were estimated in terms of CNEL, in which case the 5 dBA increase referenced in the first threshold was measured in terms of CNEL. Regarding the third threshold, the 5 dBA increment would be measured in terms of L_{eq}.

4.10.3.5 Applicable LAX Master Plan Commitments and Mitigation Measures

As part of the LAX Master Plan, LAWA adopted one commitment and seven mitigation measures pertaining to noise (denoted with "N") in the Alternative D Mitigation Monitoring and Reporting Program (MMRP). Of these commitment and mitigation measures, four mitigation measures are specific to construction noise impacts. In addition, three surface transportation commitments are also relevant to

[599] City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Proposed Master Plan Improvements, Section 4.1, page 4-103, April 2004.

this analysis. The following commitments and mitigation measures are applicable to the SPAS alternatives and were considered in the construction noise analysis herein.

- **MM-N-7. Construction Noise Control Plan.**

  A Construction Noise Control Plan will be prepared to provide feasible measures to reduce significant noise impacts throughout the construction period for all projects near noise sensitive uses. For example, noise control devices shall be used and maintained, such as equipment mufflers, enclosures, and barriers. Natural and artificial barriers such as ground elevation changes and existing buildings may be used to shield construction noise.

- **MM-N-8. Construction Staging.**

  Construction operations shall be staged as far from noise-sensitive uses as feasible.

- **MM-N-9. Equipment Replacement.**

  Noisy equipment shall be replaced with quieter equipment (for example, rubber tired equipment rather than track equipment) when technically and economically feasible.

- **MM-N-10. Construction Scheduling.**

  The timing and/or sequence of the noisiest on-site construction activities shall avoid sensitive times of the day, as feasible (9 p.m. to 7 a.m. Monday - Friday; 6 p.m. to 8 a.m. Saturday; any time on Sunday or Holidays).[600]

- **ST-16. Designated Haul Routes.**

  Every effort will be made to ensure that haul routes are located away from sensitive noise receptors.

- **ST-18. Construction Traffic Management Plan.**

  A complete construction traffic plan will be developed to designate detour and/or haul routes, variable message, and other sign locations, communication methods with airport passengers, construction deliveries, construction employee shift hours, construction employee parking locations and other relevant factors.

- **ST-22. Designated Truck Routes.**

  For dirt and aggregate and all other materials and equipment, truck deliveries will be on designated routes only (freeways and non-residential streets). Every effort will be made for routes to avoid residential frontages. The designated routes on City of Los Angeles streets are subject to approval by LADOT's Bureau of Traffic Management and may include, but will not necessarily be limited to: Pershing Drive (Westchester Parkway to Imperial Highway); Florence Avenue (Aviation Boulevard to I-405); Manchester Boulevard (Aviation Boulevard to I-405); Aviation Boulevard (Manchester Avenue to Imperial Highway); Westchester Parkway/Arbor Vitae Street (Pershing Drive to I-405); Century Boulevard (Sepulveda Boulevard to I-405); Imperial Highway (Pershing Drive to I-405); La Cienega Boulevard (north of Imperial Highway); Airport Boulevard (Arbor Vitae Street to Century Boulevard); Sepulveda Boulevard (Westchester Parkway to Imperial Highway); I-405; and I-105.

While implementation of the LAX Master Plan commitments and mitigation measures above would reduce construction noise impacts associated with the SPAS alternatives, the amount of construction noise reduction would depend on the particular locations of nearby noise-sensitive receptors and the noise reduction specifications set forth in the noise control plan for each improvement project. Such details are not currently known at this conceptual level of planning and analysis. As such, the construction noise

[600] The specification of noise-sensitive hours on Saturdays has been corrected from 8 p.m. - 6 a.m., as originally stated in the LAX Master Plan Final EIR, to 6 p.m. - 8 a.m., which is consistent with the hours indicated in the L.A. CEQA Thresholds Guide and the City's Noise Ordinance.

levels estimated in the impacts analysis below do not take credit for the noise control measures described above and are, therefore, considered to be conservative.

4.10.3.6 Impacts Analysis

4.10.3.6.1 Alternative 1

Construction Traffic Noise

Construction traffic noise would be generated by both trucks and employee vehicles. As part of the traffic-related LAX Master Plan commitments identified in Section 4.10.3.5 above, a construction traffic management plan would be prepared with each improvement project and would seek to locate haul routes away from noise-sensitive receptors. Additionally, construction-related trucks would be restricted to designated routes ensuring that these vehicles utilize the nearby freeways and major arterials to the maximum extent and minimize use of local roadways. As indicated above in Section 4.10.3.2, traffic volumes on roads with good operating conditions (i.e., LOS B or better) would have to increase more than three-fold to reach the CEQA threshold of significance of a 5 dBA increase, and would need to increase even more on roads with poor operating conditions (i.e., LOS C or worse). The construction routes applicable to all SPAS alternatives, including Alternative 1, are intentionally designated for freeways and major arterials around the airport, avoiding minor arterials and local streets. These freeways and major arterials are high-volume routes that are already at LOS C or worse. Although specific construction-related information such as schedules, durations, equipment and manpower estimates, are not known at this time for any of the SPAS alternatives, including Alternative 1, construction-related traffic would not result in a doubling or tripling of existing daily traffic volumes on streets around the airport, particularly given the LAX Master Plan commitments to utilize freeways and major arterials. For a recent major construction project at LAX, the Bradley West Project, the highest peak-hour construction trip estimate for the highest peak-quarter of construction activity, which included the possibility of a 60 percent temporary surge in construction activity over normal peak construction activities, projected a total of 1,226 construction trips.[601] That estimate includes a "passenger car equivalent" adjustment to all truck trips, whereby each medium-duty truck trip is counted as two passenger car trips and each heavy-duty truck trip is counted as 2.5 passenger car trips. Notwithstanding that total trip generation would be distributed to, and dispersed between, several different streets, that total trip generation is well below the existing traffic volumes on the freeways and major arterial streets around LAX and would not result in a tripling of traffic volumes (please see the traffic count data in Appendix K2, *Off-Airport Transportation*). As a result, the construction traffic noise impact associated with Alternative 1 would be less than significant.

Construction Equipment Noise

As described above in Section 4.10.3.3, the existing ambient CNEL within noise-sensitive areas to the north, east, and south of LAX, range from approximately 65 to 70 dBA. A significant impact is considered to occur if construction equipment noise exceeds the baseline ambient exterior noise level by 5 dBA or more at a noise sensitive use. Based on the 24-hour construction site CNEL of 89 dBA at 50 feet from the source, which would dissipate at 4.5 dB per doubling of distance, the approximate distances from construction activities to the 70 and 75 dBA CNELs (i.e., points at which construction equipment noise would result in a 5 dBA increase over the baseline ambient exterior noise level of 65 to 70 dBA CNEL) would be 925 feet and 425 feet, respectively. In other words, noise-sensitive uses in areas with an existing ambient CNEL of 65 dBA would be significantly impacted if SPAS-related construction activity occurred within a distance of 925 feet or less. If the existing ambient CNEL is 70 dBA, a significant impact would occur if construction activities occurred within 425 feet or less. These distances do not account for any intervening topography, buildings, or other obstructions that would reduce the noise reaching the receptors; hence, the impacts analysis is conservative.

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601 City of Los Angeles, Los Angeles World Airports, Final Environmental Impact Report for Los Angeles International Airport (LAX) Bradley West Project, Table 4.3-7, September 2009.

It should be noted that the second and third thresholds of significance presented above in Section 4.10.3.4 indicate a significant construction noise impact would occur if one or both of the following conditions occur: (1) if project-related construction noise results in a 5 dBA or more increase in the existing ambient noise level at noise-sensitive uses; or (2) if project-related construction noise results in a 5 dBA increase over ambient exterior noise levels at noise-sensitive uses during particular times of the week - specifically, between the hours of 9:00 p.m. and 7:00 a.m. Monday through Friday, before 8:00 a.m. or after 6:00 p.m. on Saturday, or at any time on Sunday. As further described below, the first of those two conditions is considered to be the more restrictive of the two. Therefore, the analyses in Sections 4.10.3.6.1 through 4.10.3.6.9 address the second and third significance thresholds.

As described above in Section 4.10.3.2 and delineated in **Table 4.10.3-2**, it is anticipated that the majority of construction activities would occur during daytime hours, primarily within a Monday through Friday work week. It is likely, however, that there may be some limited periods when construction is scheduled to occur during both the daytime and nighttime hours. During such periods, it is anticipated that nighttime construction would have lower equipment activity levels than otherwise would occur during the daytime and certain hours are unlikely to have any activity. **Table 4.10.3-2** indicates the estimated construction activity level for each hour of the day under this conservative "worst-day" construction scenario and **Table 4.10.3-3** delineates the hourly average sound level for each hour. In focusing on the hourly activity levels and associated hourly average sound levels for the greatest time span when this significance criterion would be applicable (i.e., 9:00 p.m. on a Friday to 8:00 a.m. on a Saturday, the overall construction-related hourly average noise level at 50 feet during this period would be 82.3 dBA L_{eq} (Note: Although the affected time period for a Saturday starts earlier than 9:00 p.m., construction activities are not anticipated to occur on Sundays; hence, the longer duration of 9 p.m. to 8 a.m. was assumed for the analysis).

As indicated above, under the second significance threshold, 24-hour construction site CNEL would dissipate and be less than significant at approximately 925 feet (where existing levels are 65 dBA CNEL), and 425 feet (where existing levels are 70 dBA CNEL).

As described in Section 4.10.3.3 above, the existing ambient average hourly noise level during the evening/nighttime period at the subject noise-sensitive areas is estimated to range from approximately 59 dBA L_{eq} to 65+ dBA L_{eq}. Based on an evening/nighttime construction activity average hourly noise level of 82.3 dBA L_{eq} at 50 feet, construction activities would be less than significant at 830 feet, under the third significance threshold, assuming the quieter nighttime ambient noise level of 59 dBA L_{eq}.

Given that a significant impact would occur under the second significance threshold at 925 feet of a noise-sensitive use, and 830 feet under the third significance threshold, the analyses below use the more conservative distance under the second significance threshold.

The impact analyses below discuss various noise-sensitive receptors which are considered representative of other nearby noise-sensitive receptors, described in Section 4.10.3.3 above.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

Residential development at the south end of Playa del Rey would be over 1,300 feet from the closest point of construction associated with Alternative 1, that being the relocation of navigational aids within the Los Angeles/El Segundo Dunes due to the 260-foot northward shift of Runway 6L/24R. Given the existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, construction activities would need to occur within a distance of approximately 585 feet in order to result in construction noise that is 5 dBA higher than the baseline exterior noise level.[602] As such, construction equipment noise impacts in Playa del Rey would be less than significant.

[602] This is a worst-case analysis that assumes a full complement of construction equipment producing a combined noise level of 89 dBA at 50 feet; however, the relocation of navigational aids would likely require very few pieces of construction equipment, resulting in noise levels of less than 89 dBA.

Saint Bernard High School

This facility, located on the east side of Fallmouth Avenue north of Westchester Parkway, could be impacted by construction noise from the improvements required for the Argo Drainage Channel (i.e., cover/enclose the channel to meet runway safety requirements associated with relocation of Runway 6L/24R). Although the western portion of the Argo Drainage Channel is approximately 950 feet from the southern tip of the school site, it is likely that the limits of construction would extend northward, to provide for equipment maneuvering on top of the banks along the channel, and be less than 925 feet from the school site, which would result in significant construction equipment noise impacts.

Residential Uses Along Southern Edge of Westchester

The existing residences closest to LAX, along the south side of West 91st Street, generally between and near Stanmoor Drive and Rayford Drive, would potentially be affected by construction noise from the improvements required for the Argo Drainage Channel. Similar to the discussion above under Saint Bernard High School, the Argo Drainage Channel is located approximately 950 feet from the nearest residence; hence, significant construction equipment noise impacts would occur.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

This apartment complex is near the west end of the Lincoln Boulevard improvement (i.e., realignment) area associated with relocation of Runway 6L/24R. Construction activity for the nearby roadway improvements (i.e., the realignment of Lincoln Boulevard) would result in significant construction equipment noise impacts to apartment residents. Additionally, the southern end of the apartment complex is approximately 650 feet from the Argo Drainage Channel and approximately 750 feet from the 260-foot northward shift of Runway 6L/24R; hence, the apartment complex would also be subject to significant construction equipment noise impacts from those improvements proposed under Alternative 1.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

The northward realignment of Lincoln Boulevard, which would accompany the northward relocation of Runway 6L/24R under Alternative 1, would occur approximately 1,100 feet away from (south of) the residential uses along West 88th Street between Liberator Avenue and Sepulveda Westway. Based on distance alone, not including the noise attenuation function of the existing 8-foot-high noise wall along West 88th Street and the 15- to 20-foot high noise walls along portions of La Tijera and West 88th Place, no significant construction noise impacts are expected to occur in this area under Alternative 1.

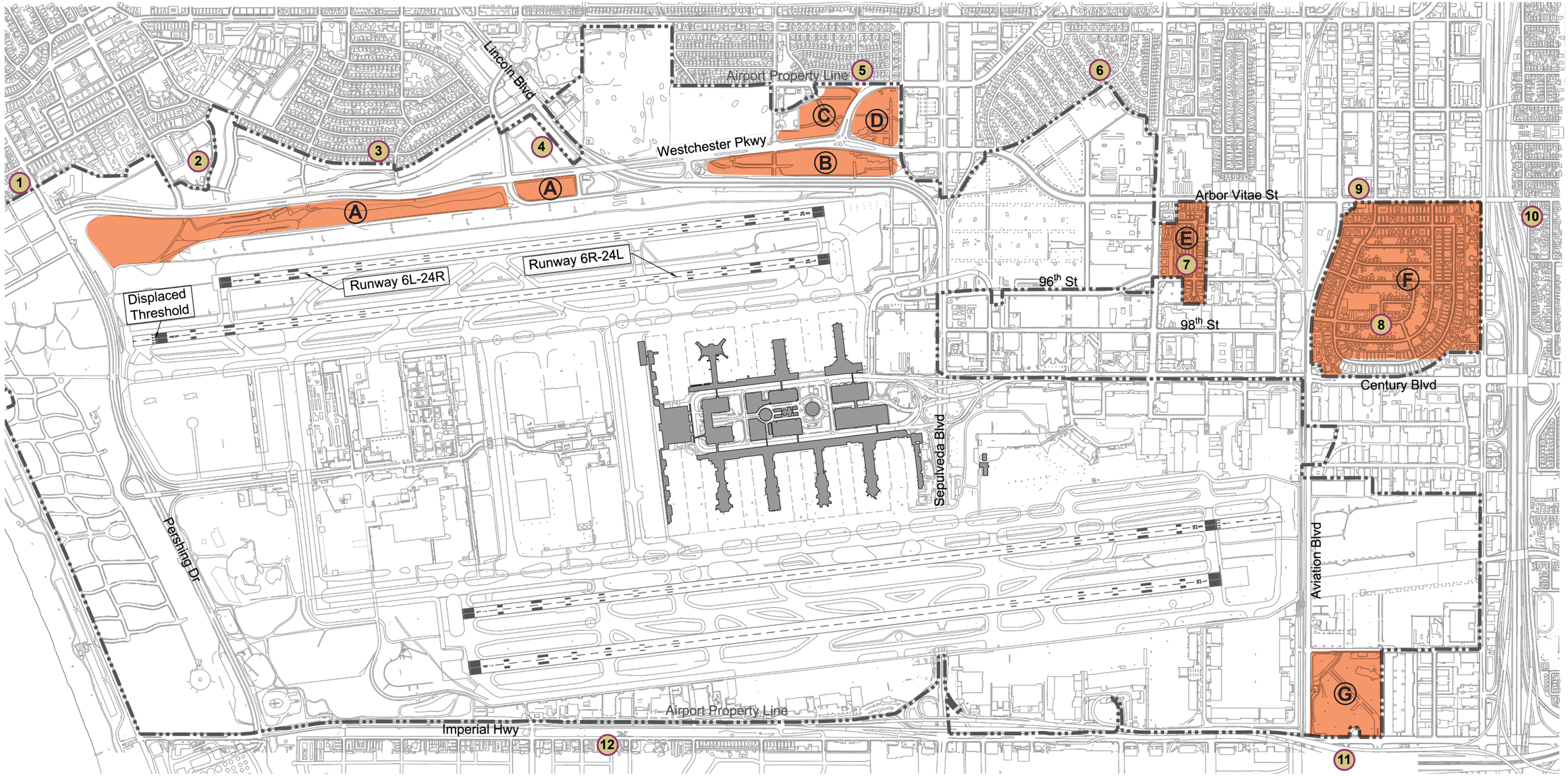
Impacts from Ground Access Improvements

Remaining Residences Within Belford

The majority of the Belford area has been cleared of residential uses; however, there are a few residences currently remaining, including along the west side of Belford Avenue south of 96th Street, which are approximately 500 feet from the eastern edge of the Intermodal Transportation Facility (ITF) proposed under Alternative 1, and approximately 500 feet north of the elevated busway proposed along 98th Street. Should those residences still remain and be occupied at the time of ITF and busway development, there is the potential for significant impacts from construction equipment noise. As such, the potential construction equipment noise impacts from development of the ITF and busway under Alternative 1 are considered significant.

Noise-Sensitive Uses Within Manchester Square

Similar to Belford, the majority of Manchester Square has been cleared of residential development; however, there are currently some remaining units, primarily apartment complexes. There are also school facilities (Bright Star Secondary Charter Academy and Stella Middle Charter Academy) within Manchester Square. It is possible that the development of surface parking under Alternative 1 would be sequenced to occur in phases over the course of several years. Should noise-sensitive uses still be present at the time Manchester Square is developed for surface parking, significant construction equipment noise impacts would occur. Additionally, construction of the eastern end of the elevated



0 1,500 ft
Scale north

Source: Los Angeles World Airports, Airports Development Group, 2011, CDM Smith, 2012.

Prepared by: CDM Smith, 2012.

1. Residential Uses in Playa Del Rey
2. Saint Bernard High School
3. Residential Uses Along Southern Edge of Westchester
4. Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard
5. Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway
6. Noise-Sensitive Uses North of Parking Lots C and D and "Jenny Lot"
7. Remaining Residences Within Belford
8. Noise-Sensitive Uses Within Manchester Square
9. Animo Leadership Charter High School
10. Residential Uses Within City of Inglewood
11. Residential Uses Within Del Aire
12. Residential Uses Within El Segundo

Legend

- (A) Potential Construction Staging Area
- 1 Sensitive Noise Receptor Area

LAX Specific Plan Amendment Study Draft EIR

Construction Noise Analysis
Sensitive Noise Receptor Areas and Potential Construction Staging Areas

Figure
4.10.3-1

busway, which would terminate at Manchester Square, would result in significant construction equipment noise impacts should occupied residential units be present in the southwest portion of Manchester Square at the time of development. As such, the potential for construction equipment noise from development of surface parking under Alternative 1 are considered significant.

Animo Leadership Charter High School[603]

This school facility is located at the northeast corner of Aviation Boulevard and Arbor Vitae Street, across from Manchester Square. Under Alternative 1, development of surface parking in Manchester Square would result in significant construction equipment noise impacts at the school site (i.e., construction activities would occur as close as approximately 75 feet from the school site).

Residential Uses Within City of Inglewood

Although there are residential units in Inglewood that are nominally within 925 feet of the Manchester Square surface parking lot proposed under Alternative 1, such units are on the east side of the I-405 Freeway, which effectively removes them from the project site area and would mask the SPAS-related construction noise with the intervening freeway noise that is not otherwise attenuated by the existing noise wall/barrier located along the eastern edge of the freeway. Therefore, construction equipment noise impacts would be less than significant.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 1 are considered at this time to be significant.

4.10.3.6.2 Alternative 2

Construction Traffic Noise

Under Alternative 2, construction traffic noise impacts would be similar to Alternative 1. As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 2 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

The nearest airfield improvement associated with Alternative 2 would be the new high-speed taxiway exit near the west end of Runway 6L/24R, which would be over 3,500 feet from Playa del Rey. Given this distance, construction equipment noise impacts would be less than significant.

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603 At the publication time of the Notice of Preparation for the SPAS Draft EIR, October 2010 (i.e., the baseline year for the EIR impacts analysis), the Animo Leadership Charter High School was located at the northeast corner of Aviation Boulevard and Arbor Vitae Street, across from Manchester Square. This school is, however, proposed to move to a new location in Lennox, approximately 2.5 miles from the current site (see http://anewhomeforanimoleadership.wordpress.com/abouttheproject/, accessed on June 16, 2012). It is anticipated that the new facility and relocation will be completed in 2012. At the time of this writing, the school was still at the Arbor Vitae Street location; hence, it is included in the impacts analysis.

Saint Bernard High School

The nearest airfield improvement associated with Alternative 2 would be the new high-speed taxiway exit near the west end of Runway 6L/24R, which would be approximately 1,800 feet from the school. Given this distance, construction equipment noise impacts would be less than significant.

Implementation of Alternative 2 would require modifications to (i.e., covering of) only the eastern portion of the Argo Drainage Channel, situated approximately 9,000 feet from Saint Bernard High School; hence, there would be no significant construction noise impacts to Saint Bernard High School from those improvements.

Residential Uses Along Southern Edge of Westchester

For the same reasons described above relative to Saint Bernard High School, construction equipment noise impacts to the residential units along the southern edge of Westchester associated with airfield improvements would be less than significant (i.e., the nearest home in Westchester would be approximately 1,800 feet from the closest taxiway improvements).Alternative 2 does not propose modifications to the Argo Drainage Channel that would be in proximity to residences (i.e., nearest residence is over 1,750 feet from the eastern portion of the Argo Drainage Channel); hence, no significant noise impacts would occur from those improvements.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Under Alternative 2, there would be no airfield, drainage channel, or roadway improvements occurring near the Park West Apartments; hence, construction equipment noise impacts would be less than significant.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

Under Alternative 2, the airfield improvement nearest to this residential area would be the modification (covering) of the eastern end of the Argo Drainage Channel, which would occur over 1,600 feet to the south. Based on distance alone, not including the noise attenuation function of the existing 8- to 20-foot-high noise walls along this area, no significant construction noise impacts would occur in this area.

Impacts from Ground Access Improvements

Remaining Residences Within Belford

Construction equipment noise impacts to residences within the Belford area would be the same as described above for Alternative 1. As with Alternative 1, due to the proximity of the few remaining residences to the eastern edge of the ITF, the elevated busway, and the potential for these residences to still be in place during construction of these ground access facilities, the potential construction equipment noise impacts would be significant.

Noise-Sensitive Uses Within Manchester Square

Construction equipment noise impacts to residences and schools within Manchester Square would be the same as described above for Alternative 1. As with Alternative 1, due to the potential for those noise-sensitive uses to still be present at the time Manchester Square is developed for surface parking under Alternative 2 (i.e., if the development of surface parking is sequenced to occur in phases over the course of several years and residential units and/or school facilities are within the later phase areas) or be present during construction of the eastern end of the busway, construction equipment noise impacts would be significant.

Animo Leadership Charter High School[604]

Under Alternative 2, impacts to this school would be the same as described above for Alternative 1. As with Alternative 1, development of surface parking in Manchester Square would result in significant

[604] See footnote 603 with regard to the pending relocation of this facility.

construction equipment noise impacts at the school site, which is only about 75 feet north of Manchester Square.

Residential Uses Within City of Inglewood

Under Alternative 2, impacts to residential uses within the City of Inglewood would be the same as described above for Alternative 1. These impacts would be less than significant.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 2 are considered at this time to be significant.

4.10.3.6.3 Alternative 3

Construction Traffic Noise

Under Alternative 3, construction traffic noise impacts would be similar to Alternative 1. As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 3 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

The nearest airfield improvement associated with Alternative 3 would be the westerly extension of Runway 6L/24R and associated relocation of navigational aids within the Los Angeles/El Segundo Dunes, which would be over 2,000 feet and 1,500 feet, respectively, from Playa del Rey. Given the existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, construction activities would need to occur within a distance of approximately 585 feet in order to result in a 5 dBA increase over the ambient noise level.[605] As such, construction equipment noise impacts would be less than significant.

Saint Bernard High School

The nearest airfield improvement associated with Alternative 3 would be the westerly extension of Runway 6L/24R, which would be over 1,500 feet from the school. Given this distance, construction equipment noise impacts would be less than significant.

Implementation of Alternative 3 would require modifications to (i.e., covering of) only the eastern portion of the Argo Drainage Channel, situated approximately 9,000 feet from Saint Bernard High School; hence, there would be no significant construction noise impacts to Saint Bernard High School from those improvements.

Residential Uses Along Southern Edge of Westchester

For the same reasons described above relative to Saint Bernard High School, construction equipment noise impacts to the residential units along the southern edge of Westchester associated with airfield

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605 This is a worst-case analysis that assumes a full complement of construction equipment producing a combined noise level of 89 dBA at 50 feet; however, the relocation of navigational aids would likely require very few pieces of construction equipment, resulting in noise levels of less than 89 dBA.

improvements would be less than significant (i.e., the nearest home in Westchester would be approximately 1,600 feet from the closest taxiway improvements).

Alternative 3 does not propose modifications to the Argo Drainage Channel that would be in proximity to residences (i.e., nearest residence is over 1,750 feet from the eastern portion of the Argo Drainage Channel); hence, no significant noise impacts would occur from those improvements.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Similar to Alternative 2, under Alternative 3, there would be no airfield, drainage channel, or roadway improvements occurring near the Park West Apartments; hence, construction equipment noise impacts would be less than significant.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

Under Alternative 3, the airfield improvement nearest to this residential area would be the modification (covering) of the eastern end of the Argo Drainage Channel, which would occur over 1,600 feet to the south. Based on distance alone, not including the noise attenuation function of the existing 8- to 20-foot-high noise walls along this area, no significant construction noise impacts would occur in this area.

Impacts from Ground Access Improvements

Noise-Sensitive Uses North of Parking Lots C and D and "Jenny Lot"

Under Alternative 3, Parking Lots C and D and the "Jenny Lot" would be redeveloped with a Consolidated Rental Car Facility (CONRAC). Existing residential uses north of Westchester Parkway near Lot C, residential uses along Will Rogers Street northwest of Lot D, Carl E. Nielsen Park north of Lot D and the Jenny Lot, and residential uses northeast of the Jenny Lot are noise-sensitive uses that could be affected by construction equipment noise from development of the CONRAC. All are well within 925 feet of proposed CONRAC improvement areas; hence, the construction equipment noise impact would be significant.

Remaining Residences Within Belford

As noted previously, the majority of the Belford area has been cleared of residential uses; however, there are a few residences currently remaining, including along the west side of Belford Avenue, approximately 500 feet from the eastern edge of the CONRAC site. Due to the potential for those residences to still remain and be occupied at the time of CONRAC development, there is the potential for significant impacts from construction equipment noise. As such, the potential construction equipment noise impacts to residences in Belford from development of the CONRAC would be significant.

Noise-Sensitive Uses Within Manchester Square

Under Alternative 3, a Ground Transportation Center (GTC) would be developed at Manchester Square. Based on the size and conceptual design of the GTC, development of the GTC would occur with no school or residential units remaining at the site (i.e., construction would not be phased to occur around remaining residential units). As such, no construction equipment noise impacts to existing residential units or school facilities within Manchester Square would occur from development of the GTC (i.e., the existing noise-sensitive would be removed or vacated prior to construction).

Animo Leadership Charter High School[606]

Under Alternative 3, impacts to this school would be similar to Alternative 1. Under Alternative 3, development of the GTC in Manchester Square would result in significant construction equipment noise impacts at the school site, which is only about 75 feet north of Manchester Square.

606 See footnote 603 with regard to the pending relocation of this facility.

Residential Uses Within City of Inglewood

Under Alternative 3, impacts to residential uses within the City of Inglewood would be the same as described above for Alternative 1. These impacts would be less than significant.

Residential Uses Within Del Aire

Under Alternative 3, an Intermodal Transportation Center (ITC) would be developed at Continental City. The nearest residences in Del Aire are approximately 800 feet from the southern edge of Continental City. Much of construction equipment noise impacts associated with development of the ITC to residences in Del Aire would be attenuated by the existing noise wall along the northern edge of the community. However, construction of the upper levels of the ITC, as well as construction of a pedestrian walkway between the ITC and the existing Metro Green Line Station under this alternative, which would place construction activities within approximately 300 feet of residential development in Del Aire, would result in significant construction noise impacts.

Residential Uses Within El Segundo

Under Alternative 3, a West Employee Parking facility would be developed in the western portion of the airport, south of World Way West. The nearest residential area in El Segundo is over 2,000 feet away; hence, construction equipment noise impacts would be less than significant.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 3 are considered at this time to be significant.

4.10.3.6.4 Alternative 4

Construction Traffic Noise

Under Alternative 4, construction traffic noise impacts would be the same as described above for Alternative 1. These impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 4 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

No construction equipment noise impacts would occur in Playa del Rey relative to airfield improvements under Alternative 4. The nearest airfield improvement associated with Alternative 4 would be the easterly extension of Runway 6R/24L, and associated relocation of navigational aids at that end of the runway, which would be almost two miles away.

Saint Bernard High School

The nearest airfield improvement associated with Alternative 4 would be the easterly extension of Runway 6R/24L, which would be over 9,000 feet from the school. Given this distance, construction equipment noise impacts would be less than significant.

Implementation of Alternative 4 would require modifications to (i.e., covering of) only the eastern portion of the Argo Drainage Channel, situated approximately 9,000 feet from Saint Bernard High School; hence, there would be no significant construction noise impacts to Saint Bernard High School from those improvements.

Residential Uses Along Southern Edge of Westchester

For the same reasons described above relative to Saint Bernard High School, construction equipment noise impacts to the residential units along the southern edge of Westchester associated with airfield improvements would be less than significant (i.e., the nearest home in Westchester would be over 5,000 feet from the closest taxiway improvements).

Alternative 4 does not propose modifications to the Argo Drainage Channel that would be in proximity to residences (i.e., nearest residence is over 1,750 feet from the eastern portion of the Argo Drainage Channel); hence, no significant noise impacts would occur from those improvements.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Similar to Alternative 2, under Alternative 4, there would be no airfield, drainage channel, or roadway improvements occurring near the Park West Apartments; hence, construction equipment noise impacts would be less than significant.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

Under Alternative 4, the airfield improvement nearest to this residential area would be the modification (covering) of the eastern end of the Argo Drainage Channel, which would occur over 1,600 feet to the south. Based on distance alone, not including the noise attenuation function of the existing 8- to 12-foot-high noise walls along this area, no significant construction noise impacts would occur in this area.

Impacts from Ground Access Improvements

Noise-Sensitive Uses North of Parking Lots C and D and "Jenny Lot"

Impacts to these noise sensitive uses would be the same as described above for Alternative 3. As with Alternative 3, these uses are well within 925 feet of proposed CONRAC improvement areas; hence, the construction equipment noise impact would be significant.

Remaining Residences Within Belford

Construction equipment noise impacts to residences within the Belford area would be the same as described above for Alternative 3. As with Alternative 3, due to the proximity of the few remaining residences to the eastern edge of the CONRAC, and due to the potential for these residences to still be in place during construction of this facility, the construction noise impacts would be significant.

Noise-Sensitive Uses Within Manchester Square

Under Alternative 4, no ground access improvements are proposed at or near Manchester Square; hence, no construction noise impacts to noise-sensitive uses within this area would occur.

Animo Leadership Charter High School[607]

No ground access improvements near Animo Leadership Charter High School are proposed under Alternative 4; hence, no construction noise impacts to that noise-sensitive use would occur.

Residential Uses Within City of Inglewood

No new use of Manchester Square is proposed under Alternative 4; consequently, no construction equipment noise impacts would occur at residential areas in Inglewood.

Residential Uses Within Del Aire

Under Alternative 4, a new parking structure would be developed at Continental City. The nearest residences in Del Aire are approximately 800 feet from the southern edge of Continental City. Similar to Alternative 3 above, construction of upper levels of the parking structure along the southern edge of

607 See footnote 603 with regard to the pending relocation of this facility.

Continental City (i.e., construction activity less than 925 feet away and at an elevation well above the top of the existing noise wall in Del Aire) would result in significant construction equipment noise impacts.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 4 are considered at this time to be significant.

4.10.3.6.5 Alternative 5

Construction Traffic Noise

As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 5 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

Residential development at the south end of Playa del Rey would be approximately 1,000 feet from the closest point of construction associated with Alternative 5, that being the relocation of navigational aids within the Los Angeles/El Segundo Dunes due to the 350-foot northward shift of Runway 6L/24R. Given the existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, construction activities would need to occur within a distance of approximately 585 feet in order to result in a 5 dBA increase over the ambient noise level.[608] As such, construction equipment noise impacts in Playa del Rey would be less than significant.

Saint Bernard High School

Under Alternative 5, impacts to Saint Bernard High School from construction equipment noise would be the same as described previously for Alternative 1. While Alternative 5 would relocate Runway 6L/24R farther northward than Alternative 1 (i.e., 350 feet versus 260 feet), the northerly limits of construction activity would be defined by the proposed modification (covering) of the Argo Drainage Channel, which would essentially be the same for both alternatives. The potential construction noise impacts associated with the Argo Drainage Channel improvements would be significant.

Residential Uses Along Southern Edge of Westchester

Under Alternative 5, impacts to residential uses along the southern edge of Westchester from construction equipment noise would be the same as described previously for Alternative 1 due to construction of the Argo Drainage Channel modifications which are the same as Alternative 1. These impacts would be significant.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Under Alternative 5, impacts to the Park West Apartments from construction equipment noise would be the same as described previously for Alternative 1, including construction noise impacts associated with

608 This is a worst-case analysis that assumes a full complement of construction equipment producing a combined noise level of 89 dBA at 50 feet; however, the relocation of navigational aids would likely require very few pieces of construction equipment, resulting in noise levels of less than 89 dBA.

the realignment of Lincoln Boulevard and with the modifications to the Argo Drainage Channel. Additionally, the southern end of the apartment complex is approximately 550 feet from the improvement area for the 350-foot northward shift of Runway 6L/24R, which would also contribute to significant construction equipment noise impacts at the apartments. These impacts would be significant.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

The northward realignment of Lincoln Boulevard, which would accompany the northward relocation of Runway 6L/24R under Alternative 1, would occur approximately 1,100 feet away from (south of) the residential uses along West 88th Street between Liberator Avenue and Sepulveda Westway. Based on distance alone, not including the noise attenuation function of the existing 8-foot-high noise wall along West 88th Street and the 15- to 20-foot high noise walls along portions of La Tijera and West 88th Place, no significant construction noise impacts are expected to occur in this area under Alternative 5.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 5 are considered at this time to be significant.

4.10.3.6.6 Alternative 6

Construction Traffic Noise

As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 6 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

Residential development at the south end of Playa del Rey would be over 1,450 feet from the closest point of construction associated with Alternative 6, that being the relocation of navigational aids within the Los Angeles/El Segundo Dunes due to the 100-foot northward shift of Runway 6L/24R. Given the existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, construction activities would need to occur within a distance of approximately 585 feet in order to result in a 5 dBA increase over the ambient noise level.[609] As such, construction equipment noise impacts in Playa del Rey would be less than significant.

Saint Bernard High School

Under Alternative 6, only the eastern portion of the Argo Drainage Channel would be covered and there would be no construction activities for the Argo Drainage Channel near the school site. Therefore, construction equipment noise impacts to Saint Bernard High School from construction associated with the Argo Drainage Channel would be less than significant. The 100-foot northern shift of the runway would occur approximately 1,100 feet from the southern tip of the school site. Based on the estimate that construction activities would need to be at least 925 feet away in order to avoid a 5 dBA increase over an

[609] This is a worst-case analysis that assumes a full complement of construction equipment producing a combined noise level of 89 dBA at 50 feet; however, the relocation of navigational aids would likely require very few pieces of construction equipment, resulting in noise levels of less than 89 dBA.

existing ambient noise level of 65 dBA CNEL, no significant construction noise impacts to Saint Bernard High School would occur from the runway relocation under this alternative.

Residential Uses Along Southern Edge of Westchester

Impacts to the existing residences closest to LAX, along the south side of West 91st Street, generally between and near Stanmoor Drive and Rayford Drive, associated with construction equipment noise from the 100-foot northward relocation of Runway 6L/24R would be the same as described above for Saint Bernard High School. As such, no significant construction equipment noise impacts would occur.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Under Alternative 6, impacts to the Park West Apartments from construction equipment noise associated with construction of the Lincoln Boulevard improvement (i.e., realignment) area associated with relocation of Runway 6L/24R would be the same as described previously for Alternative 1. These impacts would be significant. Additionally, the southern end of the apartment complex is approximately 900 feet from the improvement area for the 100-foot northward shift of Runway 6L/24R, which would also contribute to significant construction equipment noise impacts at the apartments.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

The northward realignment of Lincoln Boulevard, which would accompany the northward relocation of Runway 6L/24R under Alternative 1, would occur approximately 1,100 feet away from (south of) the residential uses along West 88th Street between Liberator Avenue and Sepulveda Westway. Based on distance alone, not including the noise attenuation function of the existing 8-foot-high noise wall along West 88th Street and the 15- to 20-foot high noise walls along portions of La Tijera and West 88th Place, no significant construction noise impacts are expected to occur in this area under Alternative 6.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 6 are considered at this time to be significant.

4.10.3.6.7 Alternative 7

Construction Traffic Noise

As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 7 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Airfield Improvements

Residential Uses In Playa del Rey

Residential development at the south end of Playa del Rey would be approximately 2,300 feet from the closest point of construction associated with Alternative 7, that being the relocation of navigational aids within the Los Angeles/El Segundo Dunes due to the 100-foot southward shift of Runway 6R/24L. Given the existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, construction activities would need to occur within a distance of approximately 585 feet in order to result in a 5 dBA increase

over the ambient noise level.[610] As such, construction equipment noise impacts in Playa del Rey would be less than significant.

Saint Bernard High School

This facility, located on the east side of Fallmouth Avenue north of Westchester Parkway, could be affected by construction equipment noise from the 100-foot southward relocation of Runway 6R/24L; however, as the distance between the high school and the construction area is well over 2,000 feet, construction equipment noise impacts would be less than significant.

Implementation of Alternative 7 would require modifications to (i.e., covering of) only the eastern portion of the Argo Drainage Channel, situated approximately 9,000 feet from Saint Bernard High School; hence, there would be no significant construction noise impacts to Saint Bernard High School from those improvements.

Residential Uses Along Southern Edge of Westchester

Impacts to the existing residences closest to LAX, along the south side of West 91st Street, generally between and near Stanmoor Drive and Rayford Drive, associated with construction equipment noise from the 100-foot southward relocation of Runway 6R/24L would be the same as described above for Saint Bernard High School under Alternative 7. As with the high school, these impacts would be less than significant.

Alternative 7 does not propose modifications to the Argo Drainage Channel that would be in proximity to residences (i.e., nearest residence is over 1,750 feet from the eastern portion of the Argo Drainage Channel); hence, no significant noise impacts would occur from those improvements.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

Under Alternative 7, there would be no airfield, drainage channel, or roadway improvements occurring near the Park West Apartments; hence, construction equipment noise impacts would be less than significant.

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

Under Alternative 7, the airfield improvement nearest to this residential area would be the modification (covering) of the eastern end of the Argo Drainage Channel, which would occur over 1,600 feet to the south. Based on distance alone, not including the noise attenuation function of the existing 8- to 20-foot-high noise walls along this area, no significant construction noise impacts would occur in this area.

Construction Noise Control Measures

Given the distances described above between the noise-sensitive receptors and construction equipment activities, impacts from construction equipment noise under Alternative 7 would be less than significant. Furthermore, LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would further ensure construction equipment noise impacts remain less than significant.

4.10.3.6.8 Alternative 8

Construction Traffic Noise

As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

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610 This is a worst-case analysis that assumes a full complement of construction equipment producing a combined noise level of 89 dBA at 50 feet; however, the relocation of navigational aids would likely require very few pieces of construction equipment, resulting in noise levels of less than 89 dBA.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 8 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Ground Access Improvements

Remaining Residences Within Belford

Under Alternative 8, potential construction equipment noise impacts from development of the ITF, parking, and the busway on remaining residences within Belford would be the same as described previously for Alternative 1. As with Alternative 1, should these residences remain and be occupied at the time these facilities are developed, these impacts would be significant. Additionally, under Alternative 8, the existing Avis Car Rental facility located directly west of Belford would be converted to surface parking. Given the proximity of this site to residences that currently remain at the eastern edge of Belford, the construction activities associated the removal of the rental car facilities and development of new parking would result in significant noise impacts.

Noise-Sensitive Uses Within Manchester Square

As indicated above, the majority of Manchester Square has been cleared of residential development; however, there are currently some remaining units, primarily apartment complexes. There are also two school facilities on-site. It is possible that the development of surface parking and CONRAC proposed under Alternative 8 would be sequenced to occur in phases over the course of several years. Should noise-sensitive uses still be present at the time Manchester Square is developed for those uses, significant construction equipment noise impacts would occur. Additionally, construction of the eastern end of the elevated busway, which would terminate at Manchester Square, would result in significant construction equipment noise impacts should occupied residential units be present in the southwest portion of Manchester Square at the time of development. As such, the potential for construction equipment noise impacts from development of surface parking, the CONRAC, and the elevated/dedicated busway under Alternative 8 are considered significant.

Animo Leadership Charter High School[611]

Under Alternative 8, impacts to Animo Leadership Charter High School from construction equipment noise would be the same as described previously for Alternative 1 (i.e., construction activities within Manchester Square could occur as close as approximately 75 feet from the school site). These impacts would be significant.

Residential Uses Within City of Inglewood

Under Alternative 8, impacts to residential uses within the City of Inglewood would be the same as described previously for Alternative 1. These impacts would be less than significant.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 8 are considered at this time to be significant.

611 See footnote 603 with regard to the pending relocation of this facility.

4.10.3.6.9 Alternative 9

Construction Traffic Noise

As with Alternative 1, construction-related traffic would not result in a doubling or tripling of traffic volumes on nearby roadways, as would be needed to occur in order to exceed the threshold of significance; therefore, these impacts would be less than significant.

Construction Equipment Noise

The following discussion of construction equipment noise impacts associated with Alternative 5 is based on the information and methodology presented above for Alternative 1. The analysis also conservatively assumes the low end of the existing ambient noise levels (65 dBA CNEL), unless otherwise stated.

Impacts from Ground Access Improvements

Remaining Residences Within Belford

Under Alternative 9, potential construction equipment noise impacts from development of the ITF, parking, and the Automated People Mover (APM) on remaining residences within Belford would be the same as described previously for Alternative 1. As with Alternative 1, should these residences remain and be occupied at the time these facilities are developed, these impacts would be significant. Additionally, under Alternative 8, the existing Avis Car Rental facility located directly west of Belford would be converted to surface parking. Given the proximity of this site to residences that currently remain at the eastern edge of Belford, the construction activities associated the removal of the rental car facilities and development of new parking would result in significant noise impacts.

Noise-Sensitive Uses Within Manchester Square

As indicated above, the majority of Manchester Square has been cleared of residential development; however, there are currently some remaining units, primarily apartment complexes. There are also two school facilities on-site. It is possible that the development of surface parking and CONRAC proposed under Alternative 9 would be sequenced to occur in phases over the course of several years. Should noise-sensitive uses still be present at the time Manchester Square is developed for those uses, significant construction equipment noise impacts would occur. Additionally, construction of the eastern end of the APM system, which would terminate at Manchester Square, would result in significant construction equipment noise impacts should occupied residential units be present in the southwest portion of Manchester Square at the time of development. As such, the potential for construction equipment noise impacts from development of surface parking, CONRAC, and APM system under Alternative 9 are considered significant.

Animo Leadership Charter High School[612]

Under Alternative 9, impacts to Animo Leadership Charter High School from construction equipment noise would be the same as described previously for Alternative 1 (i.e., construction activities within Manchester Square could occur as close as approximately 75 feet from the school site). These impacts would be significant.

Residential Uses Within City of Inglewood

Under Alternative 9, impacts to residential uses within the City of Inglewood would be the same as described previously for Alternative 1. These impacts would be less than significant.

Construction Noise Control Measures

LAX Master Plan Commitments ST-16, ST-18, and ST-22 and LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of

[612] See footnote 603 with regard to the pending relocation of this facility.

planning, it cannot be concluded that the construction equipment noise impacts described above would be fully mitigated; hence, the impacts above for Alternative 9 are considered at this time to be significant.

4.10.3.6.10 Construction Staging Areas

As described in Section 4.10.3.2, the analysis of construction noise impacts addresses impacts associated with the airfield/terminal improvements and the ground access improvements that are specific to each of the alternatives. That analysis is presented in the sections above. The construction noise analysis also addresses impacts associated with the potential construction staging areas that are common to all alternatives (i.e., any or all of the seven potential construction staging areas could be utilized by any of the alternatives). The following describes potential noise impacts associated with the development and use of each construction staging area, understanding that such impacts could occur with any of the nine alternatives.

Construction Staging Area A

Residential Uses In Playa del Rey

The western edge of Construction Staging Area A is approximately 1,000 feet from Playa de Rey. The western portion of Construction Staging Area A is already developed for, and used as, a construction staging area; consequently, the need for major grading or improvements at the site is unlikely. Site improvements, if any, would likely occur during daytime hours, which would avoid the evening and nighttime penalties associated with CNEL values. Based on the average construction activity noise level (non-penalized) of 86 dBA at a distance of 50 feet and an existing ambient noise level of 68 dBA CNEL in that area of Playa del Rey, the distance at which that sound level would dissipate to 73 dBA (i.e., a 5 dBA increase over the baseline ambient exterior noise level) is approximately 370 feet, which is well short of Playa de Rey. While the specifics of how Construction Staging Area A would be used are not currently known and would be determined in the future in conjunction with more detailed development plans, it is generally anticipated that use of the site would be for construction contractor trailers/offices, equipment and materials storage, and light- to medium-assembly of construction components. Construction staging activity is likely to occur primarily, if not entirely, in the daytime hours and largely involve street-legal vehicles that are quieter than off-road construction equipment. Based on existing information, construction equipment noise impacts to residential uses in Playa del Rey from the development and use of Construction Staging Area A would be less than significant.

Saint Bernard High School

As described above, construction activity associated with improvements to Construction Area A would likely be limited in nature and have a noise level of approximately 86 dBA at 50 feet. Based on an existing ambient noise level of 65 dBA CNEL estimated for the school site, construction activities would need to be approximately 585 feet or more away in order to avoid a 5 dBA increase over existing ambient noise levels. The distance between the southern portion of the school site and northern edge of Construction Staging Area A is slightly less than this distance (i.e., separation distance is approximately 550 feet). As such, construction equipment noise impacts to Saint Bernard High School from development and use of Construction Staging Area A would be significant.

Residential Uses Along Southern Edge of Westchester

Construction noise impacts to the residential uses along the southern edge of Westchester associated with the development and use of Construction Staging Area A, which is approximately 650 feet south of the nearest residence in the subject residential area, would be less than significant.

Park West Apartments Northwest on Lincoln Boulevard South of La Tijera Boulevard

The eastern portion of Construction Staging Area A is situated approximately 250 feet south of the apartment complex, across Westchester Parkway. The subject area is already fully improved for and

currently used as a construction staging area; consequently, no other notable improvements are anticipated to occur. Given the past and present construction staging uses at the site and the fact that it does not have direct access to the airfield or other main areas of the airport, it is anticipated that future use of the area would primarily involve materials storage and light assembly during daytime hours, and possibly construction contractor trailer/offices. It is possible, however, that other types of construction staging activities could occur within the subject area from time to time that would result in noise levels reaching 86 dBA at 50 feet. Such occurrences would result in significant construction noise impacts to the nearby apartments.

Construction Staging Areas B, C, and D

Residential Uses Along West 88th Street between Liberator Avenue and Sepulveda Westway

Construction Staging Areas C and D are proposed immediately south of the residential area north of West 88th Street between Liberator Avenue and Sepulveda Westway. Potential Construction Staging Area B is situated south of Areas C and D.

Construction Staging Area B is flat and not expected to require notable improvements. It is anticipated that future use of the area for most of the alternatives would likely involve materials storage and light assembly during daytime hours, and possibly construction contractor trailer/offices. Under Alternatives 1, 5, and 6, which involve northward relocation of Runway 6L/24R, it is anticipated that Construction Staging Area B may be more actively used in conjunction with the associated realignment of Lincoln Boulevard. The proposed realignment would extend through much of Construction Staging Area B, placing it in close proximity of, and use for, the Lincoln Boulevard realignment construction activities. Given its distance from the nearest residential development (i.e., approximately 1,000 feet away) and the presence of the existing 8-foot-high block wall along the north side of West 88th Street, between residents to the north and the subject construction staging area, no significant noise impacts would occur from the use of Construction Staging Area B.

Construction Staging Area C is flat and not expected to require notable improvements. Given its distant location from the airfield and other main areas of the airport, it is anticipated that future use of the area would likely involve materials storage and light assembly during daytime hours, and possibly construction contractor trailer/offices. An existing 8-foot-high block wall is located along the north side of West 88th Street, between residents to the north and the subject construction staging area.

Construction Staging Area D is already improved as, and has long been used for, staging of LAX construction and soundproofing activities and includes a block wall approximately 15 to 20 feet tall along the northern and western edges of the site (i.e., between the interior of the site and residential areas to the north and northwest, in addition to the aforementioned block wall along the north side of West 88th Street). No additional construction staging area improvements are expected.

Based on the nature, location, and anticipated use of Construction Staging Areas B, C, and D, construction equipment noise impacts to nearby residential areas would be less than significant.

Construction Staging Area E

Remaining Residences Within Belford

The improvement and use of Belford for Construction Staging Area E poses the potential for construction equipment noise to occupied residences if they are still remaining at the time the area is needed for construction staging. Given that the portions of Belford that would likely be used for construction staging have been, or will have been, cleared and leveled, it is not expected that substantial improvements would be necessary to ready the site for construction staging. Although most of the site has been cleared and portions with residential uses remaining are very limited, it is possible that construction staging activities could occur within 575 feet of occupied residential uses, if any, remaining at the time. Therefore, construction equipment noise impacts are considered significant.

Construction Staging Area F

Noise-Sensitive Uses Within Manchester Square

The potential improvement and use of Manchester Square for construction staging poses the potential for construction equipment noise impacts to noise-sensitive uses at the site such as any remaining occupied residential units and/or the existing school facilities, if active. For the same reasons described above for Belford, construction equipment noise impacts to residential uses and schools within Manchester Square from staging activities could occur in close proximity. Therefore, construction equipment noise impacts are considered significant.

Animo Leadership Charter High School[613]

This school facility is located at the northeast corner of Aviation Boulevard and Arbor Vitae Street, across from Manchester Square. Under Alternative 1, development of surface parking in Manchester Square would result in significant construction equipment noise impacts at the school site (i.e., construction activities would occur as close as approximately 75 feet from the school site).

Residential Uses Within City of Inglewood

Although there are residential units in Inglewood that are nominally within 925 feet of the Manchester Square surface parking lot proposed under Alternative 1, such units are on the east side of the I-405 Freeway, which effectively removes them from the project site area and would mask the SPAS-related construction noise with the intervening freeway noise that is not otherwise attenuated by the existing noise wall/barrier located along the eastern edge of the freeway. Therefore, construction equipment noise impacts would be less than significant.

Construction Staging Area G

Residential Uses Within Del Aire

Development and use of the Continental City site for construction staging would occur north of the Del Aire residential area. Although such activity would occur as close as 800 feet from residences in Del Aire, such construction staging activity would occur at approximately the same elevation as Del Aire, at which the existing 8-foot-high cinderblock wall along the northern edge of Del Aire would serve to attenuate potential noise impacts. Based on the above, construction equipment noise impacts are less than significant.

4.10.3.6.11 Summary of Impacts

None of the alternatives would result in significant impacts related to construction traffic noise; however, all nine alternatives would result in significant impacts from construction equipment noise. The sources of those impacts can be generally characterized and compared in terms of those associated with airfield improvements, those associated with ground access system improvements, and those associated with construction staging areas. The impacts of the alternatives from construction equipment noise are summarized in **Table 4.10.3-4** and in the text below.

613 See footnote 603 with regard to the pending relocation of this facility.

Table 4.10.3-4

Summary of Construction Equipment Noise Impacts After Mitigation

	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Alt. 5	Alt. 6	Alt. 7	Alt. 8	Alt. 9
Impacts Associated with Airfield Improvements									
Residential Uses in Playa del Rey	LS	LS	LS	NI	LS	LS	LS	NA	NA
Saint Bernard High School	SU	LS	LS	LS	SU	LS	LS	NA	NA
Residential Uses Along Southern Edge of Westchester	SU	LS	LS	LS	SU	LS	LS	NA	NA
Park West Apartments Northwest on Lincoln Boulevard South of La Tijera	SU	LS	LS	LS	SU	SU	LS	NA	NA
Residential Uses Along 88th Street between Liberator Avenue and Sepulveda Westway	LS	LS	LS	LS	LS	LS	LS	NA	NA
Impacts Associated with Ground Access Improvements									
Noise-Sensitive Uses North of Parking Lots C and D and "Jenny Lot"	NI	NI	SU	SU	NA	NA	NA	NI	NI
Remaining Residences within Belford	SU	SU	SU	SU	NA	NA	NA	SU	SU
Noise-Sensitive Uses within Manchester Square	SU	SU	NI	NI	NA	NA	NA	SU	SU
Animo Leadership Charter High School	SU	SU	SU	NI	NA	NA	NA	SU	SU
Residential Uses within City of Inglewood	LS	LS	LS	NI	NA	NA	NA	LS	LS
Residential Uses within Del Aire	NI	NI	SU	SU	NA	NA	NA	NI	NI
Residential Uses within El Segundo	NI	NI	LS	NI	NA	NA	NA	NI	NI
Impacts Associated with Construction Staging Areas									
Construction Staging Area A									
Residential Uses in Playa del Rey	LS	LS	LS	LS	LS	LS	LS	LS	LS
Saint Bernard High School	SU	SU	SU	SU	SU	SU	SU	SU	SU
Residential Uses Along Southern Edge of Westchester	LS	LS	LS	LS	LS	LS	LS	LS	LS
Park West Apartments Northwest of Lincoln Boulevard South of La Tijera	SU	SU	SU	SU	SU	SU	SU	SU	SU
Construction Staging Areas B, C, and D									
Residential Uses Along 88th Street between Liberator Avenue and Sepulveda Westway	LS	LS	LS	LS	LS	LS	LS	LS	LS
Construction Staging Area E									
Remaining Residences within Belford	SU	SU	SU	SU	SU	SU	SU	SU	SU
Construction Staging Area F									
Noise-Sensitive Uses within Manchester Square	SU	SU	SU	SU	SU	SU	SU	SU	SU
Animo Leadership Charter High School	SU	SU	SU	SU	SU	SU	SU	SU	SU
Residential Uses within City of Inglewood	LS	LS	LS	LS	LS	LS	LS	LS	LS
Construction Staging Area G									
Residential Uses within Del Aire	LS	LS	LS	LS	LS	LS	LS	LS	LS

Notes:

NI = No Impact
LS = Less Than Significant Impact
SU = Significant Unavoidable Impact
NA = Not Applicable

Alternatives 1 through 4 consist of airfield, terminal, and ground access improvements. Alternatives 5 through 7 focus on airfield and terminal improvements only. Alternatives 8 and 9 focus on ground access improvements only. The airfield/terminal improvements associated with Alternatives 1, 2, 5, 6, and 7 could be paired with the ground access improvements associated with Alternatives 1, 2, 8, or 9. Similarly, the ground access improvements associated with Alternatives 1, 2, 8, and 9 could be paired with the airfield improvements associated with Alternatives 1, 2, 5, 6, or 7. The full impacts of any alternative must consider airfield, terminal, and ground access contributions. The airfield, terminal, and ground access improvements associated with Alternatives 3 and 4 are specific to each of those alternatives and cannot be paired with other alternatives.

Source: CDM Smith, 2012.

Airfield Improvements

Alternatives 1, 5, and 6 would result in significant construction equipment noise impacts at noise-sensitive receptors north of the north airfield, including Saint Bernard High School (Alternatives 1 and 5), residential units along the southern edge of Westchester nearest to the airfield (Alternatives 1 and 5), and the Park West Apartments on Lincoln Boulevard just north of Westchester Parkway (Alternatives 1, 5, and 6). The impacts would occur primarily from construction activity associated with the northward relocation of Runway 6L/24R, and associated covering of the Argo Drainage Channel and realignment of Lincoln Boulevard, under these alternatives. Under Alternative 6, which would relocate Runway 6L/24R 100 feet to the north, only the eastern portion of the Argo Drainage Channel would need to be covered, which would reduce the potential for significant construction equipment noise impacts at the high school site and the southern edge of Westchester.

Under Alternatives 2, 3, 4, and 7, the proposed airfield improvements, which include, depending on the alternative, the southward relocation of Runway 6R/24L, taxiway improvements between the two existing runways, and runway extensions, would occur farther south than those of the alternatives described above; therefore, construction equipment noise impacts associated with airfield improvements under these alternatives would be less than significant.

Ground Access System Improvements

Under Alternatives 1, 2, 3, 4, 8, and 9, there is the potential for significant construction equipment noise impacts to residential uses within Belford and Manchester Square only if those uses are present and occupied at the time when construction of the ITF, elevated busway or APM, and a CONRAC and/or parking within Manchester Square occurs. Both Belford and Manchester Square are included in a voluntary property acquisition program designed to remove residential uses from areas that are subject to high noise levels from aircraft operations and the majority of the two areas has been cleared. Under that program, all residential uses within the two subject areas would ultimately be vacated/removed. Additionally, there are presently two schools within Manchester Square that are noise-sensitive receptors.

In addition to residential uses and schools within Manchester Square, there is a charter high school located immediately to the north, which would be subject to significant construction equipment noise impacts from development of transportation-related improvements in Manchester Square under Alternatives 1, 2, 3, 8, and 9.

Under Alternatives 3 and 4, a CONRAC and associated parking would be developed within the area currently occupied by LAX parking lots C and D and "the Jenny Lot." The existing residential and park uses located immediately to the northwest, north, and northeast, as well as the potentially remaining residential uses within Belford to the east, would be subject to significant construction equipment noise impacts. Alternatives 3 and 4 could also result in significant impacts to residences in Del Aire associated with construction of the ITC and the parking structure, respectively.

Under all of these alternatives, LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 would reduce construction equipment noise impacts. However, at this level of planning, it cannot be concluded that the impacts identified above would be reduced to a level that is less than significant. As such, impacts associated with construction equipment noise under Alternatives 1, 2, 3, 4, 5, 6, 8, and 9 are considered to be significant and unavoidable.

Construction Staging Areas

The following summary of noise impacts related to the development and use of potential construction staging areas applies to all alternatives.

The development and use of Construction Staging Area A would result in significant impacts at Saint Bernard High School and the Park West Apartments northwest of Lincoln Boulevard south of La Tijera. Other noise-sensitive land uses in the general area, such as residential uses in Playa del Rey, and residential uses along the southern edge of Westchester, would not be significantly impacted because they are sufficiently distant from the construction staging area.

In addition, the development and use of Construction Staging Areas B, C, and D would not significantly impact noise-sensitive residential uses nearby along West 88th Street, based on how far away the construction staging activities would occur and/or the nature of staging activities anticipated and the presence of an existing 8- to 20-foot-high sound walls (noise barriers).

Should any remaining residential units in Belford be occupied at the time Construction Staging Area F is needed for use, construction staging activities occurring in close proximity to those units would result in a significant noise impact.

Similar to above, should any remaining residential units or school facilities within Manchester Square be occupied/active when Construction Staging Area F is used, the presence of construction staging activities occurring nearby units would result in a significant noise impact. Additionally, construction staging activities along the northern edge of Construction Staging Area F would significantly impact the Animo Leadership Charter High School,[614] which is approximately 75 feet north of the subject area.

The development and use of Construction Staging Area G would not significantly impact the nearest noise-sensitive use, residential development in Del Aire, because the subject use is sufficiently distant from the construction staging area.

4.10.3.7 Mitigation Measures

Implementation of LAX Master Plan Mitigation Measures MM-N-7 through MM-N-10 and LAX Master Plan Commitments ST-16, ST-18, and ST-22 would reduce construction equipment noise impacts associated with Alternatives 1 through 9. No additional measures are available to address construction equipment noise.

4.10.3.8 Level of Significance After Mitigation

LAX Master Plan commitments and mitigation measures would reduce construction equipment noise impacts associated with all of the SPAS alternatives. However, given that the design and effectiveness of such measures, such as the noise control plan, depend on site- and project-specific conditions that would be addressed at future, more detailed levels of planning, it cannot be definitively concluded at this time that all construction equipment noise impacts would be reduced to levels that are less than significant. No additional measures are available to address construction equipment noise. As such, construction equipment noise impacts for all the SPAS alternatives are considered to be significant and unavoidable.

614 See footnote 603 with regard to the pending relocation of this facility.