4.10.2 Road Traffic Noise

4.10.2.1 Introduction

This section addresses potential noise impacts associated with changes in roadway traffic attributable to the SPAS alternatives. Specifically, this section evaluates the extent to which ambient exterior noise levels at noise-sensitive uses located along major roadways around LAX may change due to traffic associated with the SPAS alternatives.

As described in greater detail in Section 4.12.2.1, the introduction to the off-airport transportation analysis, project-related impacts to traffic conditions on roadways around the airport are influenced primarily by the ground access improvements proposed under each SPAS alternative. The alternatives that specifically include ground access improvements include Alternatives 1, 2, 3, 4, 8, and 9. Alternatives 5, 6, and 7 focus on airfield improvements, which could be paired with the ground access improvements associated with Alternatives 1, 2, 8, and 9. Therefore, potential traffic impacts associated with Alternatives 5 through 7 are addressed through those other alternatives. The ground access improvements proposed under Alternatives 1 and 2 are identical between the two alternatives; therefore, traffic-related impacts associated with those two alternatives would be the same and are addressed singularly (i.e., "Alternative 1-2"). Based on the above, the road traffic noise impacts discussion in this section is presented in terms of Alternatives 1-2, 3, 4, 8, and 9.

4.10.2.1.1 General Characteristics of Road Traffic Noise

Section 4.10.1.1.1, presented earlier, provides an overview of the basics of sound and the metrics used to measure and characterize sound, and describes typical noise levels associated with aircraft operations. That overview of sound basics and sound metrics also applies to road traffic noise, as addressed in this section, and the following describes typical noise levels associated with road traffic.

Noise can be defined as unwanted sound. Traffic noise (or any noise) can disrupt normal activities when the noise reaches certain levels and when noises are distinctly louder than the typical ambient noise environment. As described in Section 4.10.1.1.2, sound is commonly represented by the dimensionless units of "decibels," represented by the abbreviation "dB." Sound from highway traffic is primarily generated from tire-pavement interaction, vehicle exhaust, and engines. Additionally vehicle horns and wind shear play a small role in noise from highway traffic. Vehicle traffic sounds are generally considered to be unwanted, or noise, to most people. Table 4.10.1-1, presented in the previous section, delineates common sound levels on the A-weighted decibel (dBA) scale, including the typical sound level on a busy street, 80 dBA, or from a quiet automobile at a slow speed, 50 dBA.

Highway/roadway traffic noise is never constant. The noise level is always changing with the number, speed, and type of the vehicles that produce the noise as well as the driving habits of the vehicle operator. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and greater numbers of trucks. Vehicle noise is a combination of the noises produced by the engine, exhaust, and tires. The loudness of traffic noise can also be increased by defective mufflers or other faulty equipment on vehicles. Any condition (such as a steep incline) that causes heavy laboring of motor vehicle engines will also increase traffic noise levels. In addition, there are other more complicated factors that affect the loudness of traffic noise. For example, as a person moves away from a highway, traffic noise levels are reduced by distance, terrain, and vegetation, as well as natural and man-made obstacles.

4.10.2.2 Methodology

The road traffic noise impacts analysis completed for the SPAS project included the following steps:

- Identify sensitive noise receptor locations that could be affected by project-related changes in traffic conditions;
- Calculate road traffic noise levels at those locations for baseline conditions (2010) and for future conditions (2025 at project build-out) with implementation of each alternative;

- Assess the project-related change in ambient noise levels at the receptor locations and determine whether the change would result in a significant impact; and
- If a significant impact is identified, identify feasible mitigation measures to reduce the noise impact and determine whether the impact would be reduced to a level that is less than significant.

For purposes of this analysis, the baseline year for roadway traffic volumes is 2010, which is the year that the Notice of Preparation for this EIR was published and is also the year that traffic counts were completed within the off-airport transportation study area.[590]

For the determination of noise-sensitive receptors to include in the road traffic noise analysis, traffic volume data for baseline (2010) conditions and for future (2025) conditions, which would include cumulative traffic associated with projected regional growth, under each alternative were reviewed to identify roadways most likely to experience increased traffic. This was accomplished through the SPAS EIR off-airport traffic model described in Section 4.12.2, *Off-Airport Transportation*, which delineated the percent increase in traffic on each roadway segment in the model study area during the modeled peak hours. In conjunction with the evaluation of the traffic data, a review of the land use database used for the SPAS EIR aircraft noise analysis was completed, along with review of aerial photographs and site visits, to determine the nature and location of noise-sensitive uses located along roadways projected to experience higher percentages of traffic volume increases than most other roads nearby. **Figure 4.10.2-1** identifies the locations of the 15 noise-sensitive receptors selected for the road traffic noise impacts analysis, and **Table 4.10.2-1** delineates the nature of the noise-sensitive use at each location as well as its address. These locations are representative of the surrounding noise-sensitive uses.

Table 4.10.2-1

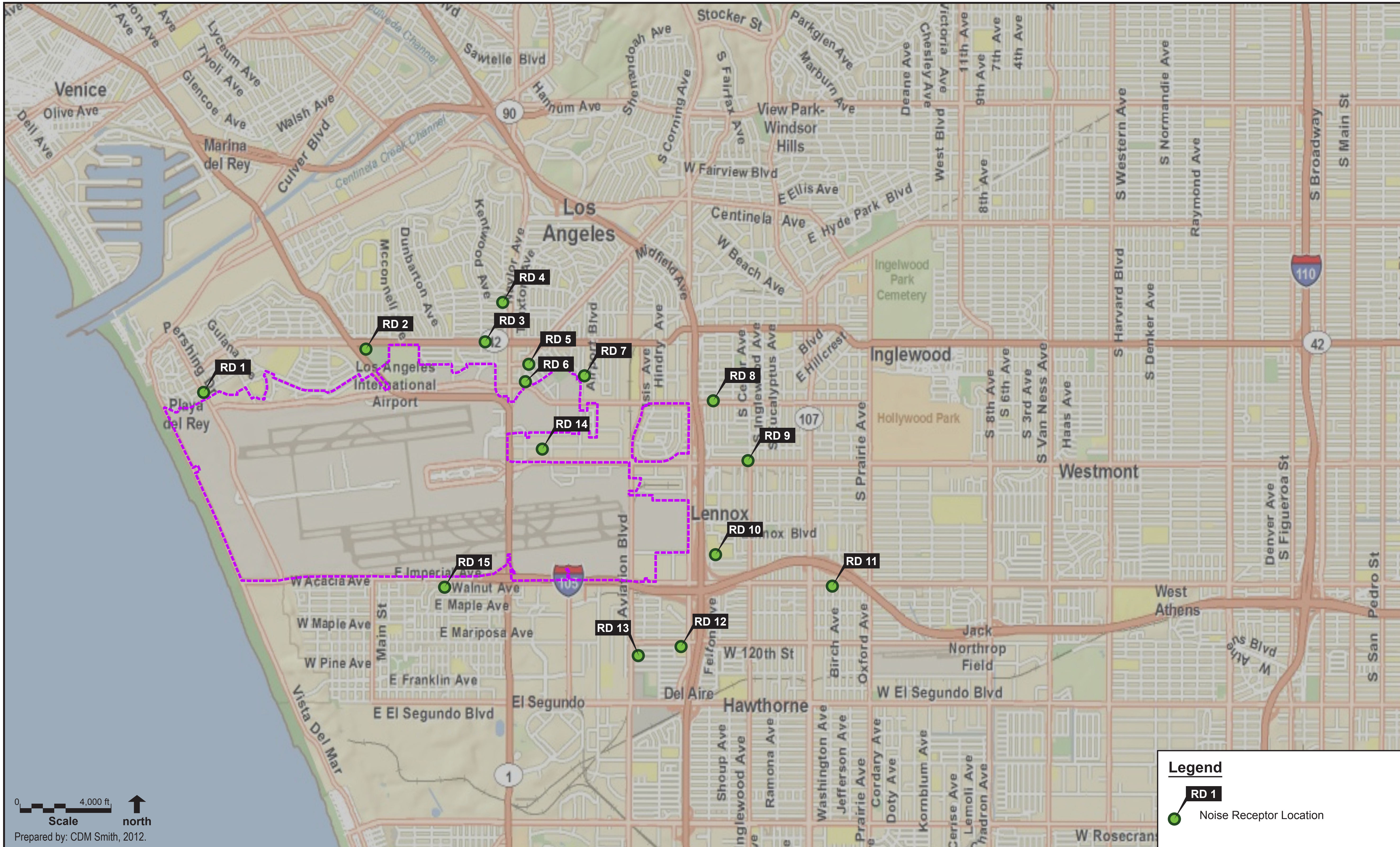
Noise-Sensitive Receptors Selected for Road Traffic Noise Analysis

Receptor ID	Use	Address
RD1	Residential Development	8880 Pershing Dr. (near Waterview St.), Playa del Rey
RD2	Westchester-Loyola Branch Library	7114 West Manchester Ave., Westchester
RD3	Residential Development	8605 Kentwood Ave. (near W. Manchester Ave.), Westchester
RD4	Residential Development	8300 S. Sepulveda Blvd. (near 83rd St.), Westchester
RD5	Wish Charter Elementary School	8740 La Tijera Blvd. (Near Sepulveda Eastway), Westchester
RD6	Residential Development	8957 Kittyhawk Ave. (at Westchester Parkway), Westchester
RD7	Residential Development	8976 Airport Blvd. (at Interceptor St.), Westchester
RD8	Residential Development	675 W. Arbor Vitae St. (near S. Ash Ave.), Inglewood
RD9	Residential Development	4821 W. Century Blvd. (near Inglewood Ave.), Inglewood
RD10	Lennox Middle School	11033 Buford Ave., Lennox
RD11	Residential Development	11406 Birch Ave. (at Imperial Highway), Hawthorne
RD12	Juan de Anza School	12110 South Hindry Ave., Del Aire
RD13	Residential Development	12200 Aviation Blvd. (at 122nd St.), El Segundo
RD14	LAX Sheraton Hotel[1]	6101 W. Century Blvd., Los Angeles
RD15	Residential Development	910 East Imperial Ave. (near McCarthy Ct.), El Segundo

1 Although hotel uses are not typically considered a noise-sensitive use for road traffic noise impact analyses, hotel uses along Century Boulevard east of the airport, such as the LAX Sheraton, were considered for informational purposes in this EIR.

Source: CDM Smith, 2012.

590 As described in Section 4.12.2.2.1, traffic counts at additional intersections within the off-airport transportation study area were also taken in 2012 and are considered to be generally representative of 2010 baseline conditions, for reasons described therein. Notwithstanding, traffic data for roadways near the 15 noise-sensitive receptors addressed in this section are based on the 2010 traffic counts.



LAX Specific Plan Amendment Study Draft EIR	Road Traffic Noise Sensitive Receptor Sites	Figure 4.10.2-1

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Next, FHWA's Traffic Noise Model version 2.5 (TNM 2.5) traffic noise prediction and analysis software was used to predict highway traffic noise for baseline (2010) and future (2025) conditions at each of the 15 receptor locations within the road traffic noise analysis study area. The TNM program performs the noise level predictions by constructing a three-dimensional terrain model encompassing the location of the noise sources and the receptors, and predicts noise levels at the receptor location based on vehicle volume, speed, fleet mix, distance to receiver, and area terrain.

Ambient noise level measurements were taken at each of the 15 receptor locations. The noise measurement data was used to confirm that road traffic noise estimates from the TNM program were within acceptable limits. Outdoor field measurements were taken using a calibrated Type II SoundPro DL-2 sound level meter on February 28, 2012 and February 29, 2012. The noise meter was placed five feet above the ground level. Test periods were chosen to be 20 minutes at each location and the maximum, minimum, and equivalent steady-state sound level (L_{eq}) was collected for each site logged in one minute intervals. Special observations were made of any unusual events affecting the noise level at each location. Noise measurement output data and field notes for each location are presented in Appendix J2, *Road Traffic Noise*.

Based on traffic data compiled during the ambient noise level measurements described above, the TNM program was run for a sampling of the 15 locations (i.e., locations where road traffic noise was considered to be a primary contributor to the ambient noise level based on observations and measurements at the time) to confirm that the predicted noise levels were within acceptable limits compared to the measured noise levels.

The TNM program was used to estimate baseline (2010) and future (2025) road traffic noise levels using p.m. peak hour traffic volumes for each receptor location, based on data from the SPAS traffic model described in Section 4.12.2, *Off-Airport Transportation*. The peak-hour L_{eq} noise levels predicted using the TNM program were converted to 24-hour Community Noise Equivalent Level (CNEL) values using conversion equations set forth in Section N-2230 of the California Department of Transportation (Caltrans) *Technical Noise Supplement (TENS)* manual,[591] based on accepted assumptions of peak hour traffic typically constituting approximately ten percent of the daily traffic, and that approximately 80 percent of the daily traffic occurs during daytime hours (7:00 a.m. to 7:00 p.m.), five percent during evening hours (7:00 p.m. to 10:00 p.m.), and ten percent during nighttime hours (10:00 p.m. to 7:00 a.m.). In quantifying and assessing the change in existing ambient noise levels resulting from future traffic conditions under each alternative, the basis of comparison used in the evaluation is the baseline (2010) roadway traffic noise level at each receptor location as determined through the TNM program. All of the receptor locations, which are in general proximity to LAX and more likely to experience changes in traffic conditions due to the SPAS alternatives than more distant receptors located away from the airport, experience ambient noise levels that are, throughout the course of a 24-hour period, influenced largely by aircraft noise. Using road traffic noise values from the TNM program as the basis to measure the predicted future increase in road traffic noise levels is considered to be more conservative than using the measured ambient exterior noise levels because the TNM value is typically lower than the measured ambient noise level (i.e., TNM values focus on road traffic noise while measured ambient noise includes multiple sources, including aircraft noise associated with operations at LAX) and, moreover, provides a more direct reflection of changes in noise levels that are attributable to project-related changes in traffic conditions.

4.10.2.3 Existing Conditions

As noted above, 15 noise-sensitive receptor locations were selected for the road traffic noise analysis. The receptor sites include schools, a library, a hotel, and residential uses. These uses are located near the major arterial roadways in the road traffic noise analysis study area used by airport-related vehicles.

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591 California Department of Transportation, Technical Noise Supplement (TENS) - A Technical Supplement to the Traffic Noise Analysis Protocol, October 1998.

The locations of these 15 receptor sites are shown in **Figure 4.10.2-1**. The estimated baseline (2010) ambient exterior noise levels at the 15 receptor locations ranged from 54.7 dBA CNEL to 72.6 dBA CNEL, as shown in **Table 4.10.2-2**.

Table 4.10.2-2

Baseline (2010) Ambient Exterior Noise Levels

Receptor ID	Baseline (2010) CNEL
RD1	65.1
RD2	69.2
RD3	72.6
RD4	69.8
RD5	58.5
RD6	58.0
RD7	63.5
RD8	66.3
RD9	63.5
RD10	62.4
RD11	59.1
RD12	63.9
RD13	67.5
RD14	54.7
RD15	71.6

Source: CDM Smith, 2012.

4.10.2.4 Thresholds of Significance

A significant road 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:

- Roadway traffic from that SPAS alternative causes the ambient noise level measured at the property line of affected uses to increase by 3 dBA or more in CNEL.

The above threshold is derived from the L.A. CEQA Thresholds Guide relative to operational noise impacts, including road traffic noise, associated with a proposed project.

4.10.2.5 Applicable LAX Master Plan Commitments and Mitigation Measures

No LAX Master Plan commitments or mitigation measures for road traffic noise were identified in the LAX Master Plan Mitigation Monitoring and Reporting Program (MMRP).

4.10.2.6 Impacts Analysis

Table 4.10.2-3 presents the predicted road traffic noise level, in terms of CNEL, for each receptor location for baseline (2010) conditions with a hypothetical assumption that each SPAS alternative is in place, and also shows the associated change in CNEL as compared to baseline (2010) conditions without SPAS. **Table 4.10.2-4** provides similar type information for future (2025) conditions, that is, predicted road traffic noise levels, in CNEL, at buildout of each alternative in 2025 as compared to the future noise levels that are predicted to occur in 2025 without any of the SPAS alternatives. The following describes the impacts specific to each alternative.

Table 4.10.2-3

Change in Roadway Noise Levels - Baseline (2010) Conditions Without and With SPAS Alternatives

	dBA CNEL Baseline (2010)										
	Baseline (2010) Without SPAS	With Alt. 1-2		With Alt. 3		With Alt. 4		With Alt. 8		With Alt. 9	
Receptor ID			Change from Baseline		Change from Baseline		Change from Baseline		Change from Baseline		Change from Baseline
RD1	65.1	65.3	0.2	65.0	-0.1	65.0	-0.1	65.3	0.2	65.3	0.2
RD2	69.2	69.1	-0.1	69.3	0.1	69.3	0.1	69.1	-0.1	69.1	-0.1
RD3	72.6	72.6	0.0	72.8	0.2	72.8	0.2	72.7	0.1	72.7	0.1
RD4	69.8	70.0	0.2	70.2	0.4	70.2	0.4	70.0	0.2	70.0	0.2
RD5	58.5	57.9	-0.6	57.7	-0.8	57.7	-0.8	57.9	-0.6	57.9	-0.6
RD6	58.0	57.5	-0.5	59.1	1.1	59.1	1.1	57.6	-0.4	57.6	-0.4
RD7	63.5	62.0	-1.5	62.1	-1.4	62.1	-1.4	62.0	-1.5	62.0	-1.5
RD8	66.3	67.0	0.7	66.7	0.4	66.7	0.4	67.4	1.1	67.4	1.1
RD9	63.5	63.6	0.1	63.9	0.4	63.9	0.4	63.6	0.1	63.6	0.1
RD10	62.4	62.4	0.0	62.3	-0.1	62.3	-0.1	62.4	0.0	62.4	0.0
RD11	59.1	59.2	0.1	60.5	1.4	60.5	1.4	60.1	1.0	60.1	1.0
RD12	63.9	63.8	-0.1	63.2	-0.7	63.2	-0.7	63.7	-0.2	63.7	-0.2
RD13	67.5	67.5	0.0	67.4	-0.1	67.4	-0.1	67.5	0.0	67.5	0.0
RD14	54.7	54.4	-0.3	52.3	-2.4	52.3	-2.4	54.7	0.0	54.7	0.0
RD15	71.6	71.5	-0.1	71.5	-0.1	71.5	-0.1	71.5	-0.1	71.5	-0.1

Source: CDM Smith, 2012.

Table 4.10.2-4

Change in Roadway Noise Levels - Future (2025) Conditions Without and With SPAS Alternatives

	dBA CNEL Future (2025)										
		With Alt. 1-2		With Alt. 3		With Alt. 4		With Alt. 8		With Alt. 9	
Receptor ID	Future (2025) Without SPAS		Change from Future w/o SPAS		Change from Future w/o SPAS		Change from Future w/o SPAS		Change from Future w/o SPAS		Change from Future w/o SPAS
RD1	65.7	65.5	-0.2	65.2	-0.5	65.8	0.1	65.5	-0.2	65.5	-0.2
RD2	70.7	70.0	-0.7	70.1	-0.6	70.0	-0.7	70.0	-0.7	70.0	-0.7
RD3	73.2	73.2	0.0	73.4	0.2	73.3	0.1	73.2	0.0	73.2	0.0
RD4	70.4	70.4	0.0	70.3	-0.1	70.4	0.0	70.4	0.0	70.4	0.0
RD5	59.0	59.7	0.7	58.6	-0.4	59.0	0.0	59.6	0.6	59.6	0.6
RD6	58.2	59.0	0.8	60.7	2.5	60.6	2.4	59.0	0.8	59.0	0.8
RD7	63.1	64.7	1.6	64.3	1.2	64.5	1.4	64.6	1.5	64.6	1.5
RD8	68.0	67.5	-0.5	67.0	-1.0	67.7	-0.3	67.6	-0.4	67.6	-0.4
RD9	64.4	65.6	1.2	64.8	0.4	64.8	0.4	64.5	0.1	64.5	0.1
RD10	64.5	64.1	-0.4	64.4	-0.1	64.4	-0.1	64.5	0.0	64.5	0.0
RD11	59.5	60.0	0.5	60.8	1.3	59.7	0.2	60.1	0.6	60.1	0.6
RD12	64.6	64.6	0.0	63.9	-0.7	64.5	-0.1	64.5	-0.1	64.5	-0.1
RD13	69.5	69.7	0.2	69.6	0.1	69.7	0.2	69.4	-0.1	69.4	-0.1
RD14	54.8	55.9	1.1	53.7	-1.1	56.9	2.1	55.6	0.8	55.6	0.8
RD15	72.2	71.6	-0.6	72.3	0.1	72.3	0.1	72.3	0.1	72.3	0.1

Source: CDM Smith, 2012.

4.10.2.6.1 Alternative 1-2

The changes in baseline (2010) road traffic noise with implementation of Alternative 1-2, as compared to baseline (2010) conditions without SPAS, would range from a decrease of 1.5 dBA CNEL at RD7 to a maximum increase of 0.7 dBA CNEL at RD8.

The changes in future (2025) road traffic noise with implementation of Alternative 1-2, as compared to future (2025) conditions without SPAS, would range from a decrease of 0.7 dBA CNEL at RD2 to a maximum increase of 1.6 dBA CNEL at RD7. The predicted changes in road traffic noise levels for future (2025) conditions at the 15 receptor locations would all be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternative 1-2 would be less than significant.

4.10.2.6.2 Alternative 3

The changes in baseline (2010) road traffic noise with implementation of Alternative 3, as compared to baseline (2010) conditions without SPAS, would range from a decrease of 2.4 dBA CNEL at RD14 to a maximum increase of 1.4 dBA CNEL at RD11.

The changes in future (2025) road traffic noise with implementation of Alternative 3, as compared to future (2025) conditions without SPAS, would range from a decrease of 1.1 dBA CNEL at RD14 to a maximum increase of 2.5 dBA CNEL at RD6. The predicted changes in road traffic noise levels for future (2025) conditions at the 15 receptor locations would all be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternative 3 would be less than significant.

4.10.2.6.3 Alternative 4

The changes in baseline (2010) road traffic noise with implementation of Alternative 4, as compared to baseline (2010) conditions without SPAS, would range from a decrease of 2.4 dBA CNEL at RD14 to a maximum increase of 1.4 dBA CNEL at RD11.

The changes in future (2025) road traffic noise with implementation of Alternative 4, as compared to future (2025) conditions without SPAS, would range from a decrease of 0.7 dBA CNEL at RD2 to a maximum increase of 2.4 dBA CNEL at RD6. The predicted changes in road traffic noise levels for future (2025) conditions at the 15 receptor locations would all be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternative 4 would be less than significant.

4.10.2.6.4 Alternative 8

The changes in baseline (2010) road traffic noise with implementation of Alternative 8, as compared to baseline (2010) conditions without SPAS, would range from a decrease of 1.5 dBA CNEL at RD7 to a maximum increase of 1.1 dBA CNEL at RD8.

The changes in future (2025) road traffic noise with implementation of Alternative 8, as compared to future (2025) conditions without SPAS, would range from a decrease of 0.7 dBA CNEL at RD2 to a maximum increase of 1.5 dBA CNEL at RD7. The predicted changes in road traffic noise levels for future (2025) conditions at the 15 receptor locations would all be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternative 8 would be less than significant.

4.10.2.6.5 Alternative 9

The changes in baseline (2010) road traffic noise with implementation of Alternative 9, as compared to baseline (2010) conditions without SPAS, would range from a decrease of 1.5 dBA CNEL at RD7 to a maximum increase of 1.1 dBA CNEL at RD8.

The changes in future (2025) road traffic noise with implementation of Alternative 9, as compared to future (2025) conditions without SPAS, would range from a decrease of 0.7 dBA CNEL at RD2 to a maximum increase of 1.5 dBA CNEL at RD7. The predicted changes in road traffic noise levels for future

(2025) conditions at the 15 receptor locations would all be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternative 9 would be less than significant.

4.10.2.6.6 Summary of Impacts

The ground access improvements proposed under Alternatives 1, 2, 3, 4, 8, and 9 would result in changes in road traffic noise levels at off-site noise-sensitive receptors. The predicted changes in road traffic noise levels under each of these alternatives would be less than a 3 dBA increase in CNEL; therefore, the road traffic noise impacts associated with Alternatives 1, 2, 3, 4, 8, and 9 would be less than significant. Alternatives 5, 6, and 7 do not include ground access improvements and would therefore not affect road traffic noise levels at off-site noise-sensitive uses.

4.10.2.7 Mitigation Measures

Impacts associated with road traffic noise under Alternatives 1, 2, 3, 4, 8, and 9 would be less than significant; therefore, no mitigation measures specific to SPAS are required.

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