Appendix G Noise Technical Report This page intentionally left blank.



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# HERITAGE FIELDS PROJECT 2012 GENERAL PLAN AMENDMENT / ZONE CHANGE NOISE IMPACT ANALYSIS CITY OF IRVINE, CALIFORNIA

June 18, 2012

JN:08141-10 GPA-ZC Noise Study

# TABLE OF CONTENTS

<u>Section</u>	<u>on</u>	Page
1.0	<b>Exec</b> 1.1 1.2 1.3	UTIVE SUMMARY       1         Analysis of Traffic Noise Impacts to Off-Site Sensitive Receptors       1         Analysis of Construction Noise Impacts to Off-Site Sensitive Receptors       1         Aircraft Noise Impacts       1
2.0	<b>INTRO</b> 2.1 2.2 2.3 2.4	DUCTION
3.0	Noisi 3.1 3.2 3.3 3.4 3.5 3.6 3.7 3.8 3.9	<b>FUNDAMENTALS</b> 10         Range of Noise       Effects of Noise         Noise Descriptors       Traffic Noise Prediction         Ground Absorption       Noise Control         Noise Barrier Attenuation       Community Response to Noise         Land Use Compatibility       Image Noise
4.0	<b>REGU</b> 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8	JLATORY SETTING       17         State Of California Noise Requirements       17         State Of California Building Code       17         City of Irvine Land Use Compatibility Criteria       17         City of Irvine Transportation Noise Standards       17         City of Irvine Non-transportation/Stationary-Source Noise Standards       17         Commercial Deliveries/Pickups       17         City of Irvine Construction Noise Standards       17         City of Irvine Construction Noise Standards       17         City of Irvine Noise Standards       17         City of Irvine Noise Standard Exemptions       17
5.0	Signi	FICANCE CRITERIA23
6.0	<b>Meth</b> 6.1 6.2	IODS AND PROCEDURES       25         FHWA Traffic Noise Prediction Model         Off-Site Traffic Noise Prediction Model Inputs
7.0	<b>OFF-</b> 7.1 7.2 7.3	SITE TRAFFIC NOISE ANALYSIS



8.0	OFF-S	SITE CONSTRUCTION NOISE ANALYSIS
	8.1	Construction Noise Levels
		8.1.1 Demolition
		8.1.2 Site Preparation
		8.1.3 Grading
		8.1.4 Paving
		8.1.5 Building Construction and Coating
	8.2	Control of Construction Hours
	8.3	Construction Noise Project Design Features
	8.4	Conclusion
9.0	AIRCF	RAFT NOISE IMPACTS73
10.0	REFE	RENCES

# **APPENDICES**

City of Irvine Noise Element	. 4.1
City of Irvine Noise Ordinance	. 4.2
2011 Approved Project Off-Site Transportation Noise Model Printouts	. 7.1
2012 Modified Project Off-Site Transportation Noise Model Printouts	. 7.2
Roadway Construction Noise Model (RCNM) Database	8.1
Construction Related Noise Impact Calculations	8.2
Reference Materials	10.1

# LIST OF EXHIBITS

<u>Sectio</u>	<u>n</u> <u>F</u>	<sup>&gt;</sup> age
2-A	Project Location	7
3-A	Typical Noise Levels and Their Subjective Loudness And Effects	11
9-A	Year 2010 Airport Noise Contours	74



# LIST OF TABLES

<u>Sectic</u>	<u>n</u> <u>F</u>	<u>'age</u>
3-1	Barrier Attenuation	15
3-2	Decibel Changes, Loudness and Energy Loss	16
4-1	State of California Land Use Compatibility for Exterior Community Noise	19
4-2	City of Irvine Interior and Exterior Noise Standards	20
4-3	City of Irvine Exterior Noise Standards	21
6-1	Roadway Parameters	26
6-2	Hourly Traffic Flow Distribution	27
6-3	Post-2030 Off-Site Average Daily Traffic Volumes	29
7-1	Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts	41
7-2	Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts	52
7-3	Off-Site Traffic Noise Impact Analysis Summary	64
8-1	Construction Noise Impact Analysis Summary	68



# HERITAGE FIELDS PROJECT 2012 GENERAL PLAN AMENDMENT / ZONE CHANGE NOISE IMPACT ANALYSIS CITY OF IRVINE, CALIFORNIA

# **1.0 EXECUTIVE SUMMARY**

This report presents the results of the noise impact analysis for the proposed Heritage Fields Project 2012 (the "Proposed Project"). The Proposed Project is located within the Proposed Project Site, which consists of: 1) the Heritage Fields Development, also known as the Great Park Neighborhoods, consisting of nine existing Development Districts <sup>1</sup>; 2) an 11 acre parcel currently owned by the Transportation Corridor Agencies (TCA) located adjacent to the SR-133 Freeway between Trabuco Road and Irvine Boulevard (the "TCA Property"); 3) Lot D, Lot E, and Lot F as depicted on 2nd Amended Vesting Tentative Tract Map 17008 currently zoned 3.2 Transit Oriented Development within Districts 2 and 3 (together, the "City Parcels"); and 4) an additional 132 acres owned by the City, referred to as the Wildlife Corridor, together with a portion of the Great Park known as the "Sports Park District," all of which are located within the areas designated as Existing "Planning Area (PA) 30" and Existing "PA 51" in the City's General Plan, northeast of the freeway junction of Interstate 5 (I-5) and Interstate 405 (I-405) within the City. This report compares the noise impacts of the 2011 Approved Project (Baseline), the 2012 Modified Project - Option 1, and the 2012 Modified Project – Option 2.<sup>2</sup>

This noise study provides technical analysis to support the Draft Second Supplemental Environmental Impact Report (the "DSSEIR"), which analyzes the environmental impacts associated with the 2012 Modified Project. This noise study briefly describes the 2012 Modified Project, provides information regarding noise fundamentals, describes the regulatory setting, identifies significance criteria, provides the study methods and procedures for the noise analysis



<sup>&</sup>lt;sup>1</sup> Development District 9 will be merged into Development District 6 as part of the 2012 Modified Project, reducing the number of Development Districts to eight.

<sup>&</sup>lt;sup>2</sup> In 2011, the City certified the 2011 Supplemental Environmental Impact Report (the "2011 SEIR") which analyzed the noise impacts for 4,894 dwelling units and 6.585,594 square feet of non-residential development (5,430,894 square feet of which are located within the Heritage Fields Development Districts). The 2011 SEIR is part of the 2011 Certified EIR.

and evaluates the future operational off-site and on-site noise environment. In addition, this noise study includes an analysis of the potential off-site noise impacts during construction activities.

# 1.1 <u>Analysis of Traffic Noise Impacts to Off-Site Sensitive Receptors</u>

Traffic generated by the operation of the 2012 Modified Project will influence the traffic noise levels in surrounding off-site areas. To quantify the off-site traffic noise impacts on the surrounding off-site areas, the changes in traffic noise levels on 395 roadway segments surrounding the Proposed Project Site were estimated based on the change in the average daily traffic volumes. The traffic noise levels provided in this analysis are based on the traffic forecasts provided in the <u>Heritage Fields 2012 General Plan Amendment / Zone Change Traffic Impact Analysis</u> prepared by Urban Crossroads, Inc. in May 2012 [1].<sup>3</sup>

The *Great Park Neighborhoods General Plan Amendment/Zone Change Noise Impact Analysis* prepared by Urban Crossroads on May 25, 2011 (the "2011 Noise Study") [2] identified a traffic noise screening analysis threshold of 1.5 dBA for all project-related traffic noise level increases where the resulting noise levels would be in excess of 65 dBA. Therefore, the 2011 Certified EIR required further analysis if any project-related traffic noise level increased more than 1.5 dBA within residential areas (Section 5-7, *Noise* p. 5.7-29. Although changes in noise levels of 3 dBA are considered "barely perceptible," the 2011 Certified EIR utilized this 1.5 dBA noise level screening threshold to be conservative. That same screening threshold is used in this report.

The off-site traffic noise impacts analysis indicates that the 2012 Modified Project will generate project-related noise increases of up to 1.3 dBA CNEL on 392 of the 395 traffic study area roadway segments as compared to 2011 Approved Project. However, three of the 395 study area roadway segments are expected to experience a project related noise increase ranging from 3.8 to 6.6 dBA CNEL. It is important to note that while three of the 395 off-site study area roadway segments located on Fairbanks near the Proposed Project entrance at Astor are expected to experience a project related noise



<sup>&</sup>lt;sup>3</sup> Numbers appearing in brackets are citations to the reference materials at the end of this report.

level increase of greater than 1.5 dBA CNEL, the overall noise levels will not exceed the 65 dBA significance threshold.

In addition, the three off-site study area roadway segments expected to experience a noise level increase of greater than 3 dBA are located within the Tri-Pointe Business Park and outside the noise sensitive residential areas. Any residence, hospital, school, hotel, resort, library or similar facility where quiet is an important attribute of the environment is considered a noise sensitive land use. Since the 2012 Modified Project's off-site traffic noise level impacts do not exceed the screening significance threshold, its off-site traffic-related noise impacts will be less than significant.

#### 1.2 Analysis of Construction Noise Impacts to Off-Site Sensitive Receptors

The 2011 Certified EIR concluded that the 2011 Approved Project would not result in any significant construction noise impacts to off-site noise-sensitive receptors. The supporting 2011 Noise Study [2] considered a conservative construction noise scenario that analyzed impacts to the nearest off-site residential noise receptors during peak construction activity. The 2011 Certified EIR identified the nearest off-site residential uses (sensitive noise receptors) as ranging from 100 to 300 feet from District 8 and the next sensitive noise receptor located approximately 900 feet east of District 1 North. (Section 5.7, *Noise*, p. 5.7-63). At a distance of 100 feet, the 2011 Certified EIR noise analysis estimated construction noise levels to range from 80.6 to 88.3 dBA  $L_{eq}$ . (Section 5.7, *Noise*, Table 5.7-21, p. 5.7-64.)

To identify potential construction noise impacts, a detailed noise analysis was performed using a typical mix of equipment type, quantity, normal utilization at full power and the hours of operation within the Proposed Project Site. For consistency, the mix of equipment type and quantity is based on the estimates provided in the Heritage Field Project 2012 Air Quality Analysis. This construction information was used in combination with the FHWA's Roadway Construction Noise Model (RCNM) [3] to estimate the off-site construction noise impacts. The results of the construction noise analysis indicate that the 2012 Modified Project's off-site construction noise levels would range from 82.3 to 89.4 dBA Leq at a distance of 100 feet.



While this study includes a detailed analysis of the potential temporary construction noise impacts, the City of Irvine does not regulate construction activities under its Noise Ordinance [4] so long as those activities occur only during the hours of 7:00 a.m. to 7:00 p.m. Mondays through Fridays and from 9:00 a.m. to 6:00 p.m. on Saturdays, absent a grant of a temporary waiver. Accordingly, such impacts are considered temporary and not significant. The 2012 Modified Project will comply with these hours of operation and will in addition include project design features to reduce noise impacts from construction activities adjacent to any developed/occupied noise sensitive land uses, including submission of a construction-related noise mitigation plan and proposed haul routes to the City for review and approval.

The noise mitigation plan will depict the location of the construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project through the use of such methods as temporary noise attenuation barriers, staging of equipment and any other feasible measures. With the incorporation of these project design features, the 2012 Modified Project's temporary construction noise impacts will be less than significant.

## 1.3 <u>Aircraft Noise Impacts</u>

The former MCAS EI Toro operations have ceased and no public airport, public- use airport, or airport land use plan exists in the immediate vicinity of the Proposed Project Site. In addition, the Proposed Project Site is located approximately 6 miles east of the John Wayne Airport. Consequently, the Proposed Project Site is situated well outside the Year 2010 60 dBA CNEL aircraft noise contour boundary. Although distant aircraft operation may on occasion be discernible on-site, any noise impacts associated with operations at John Wayne Airport will not exceed the local noise criteria, and therefore would result in a less than significant impact.

The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, and up to 311 density bonus units granted pursuant to state law. The optional conversion could result in a maximum of 5,806 additional dwelling units, including density bonus units. Although minor changes in roadway volumes on specific segments could result from this option, these changes would not significantly alter the projected noise levels



identified herein. A 3dB increase in noise volumes, which is the threshold for significance, would require a doubling of traffic on a specific roadway segment. Because of the proposed restriction on conversion of Multi Use and the trip limitation set forth in the zoning code, a doubling of traffic volumes on a roadway segment is not possible even with the Density Bonus Units ("DB Units") which are not subject to the trip limit. In addition, PPP 8-2 requires submittal of a final acoustical report to demonstrate that the development will be sound attenuated against present and projected noise levels on-site including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. Therefore, the 2012 Modified Project with Optional Conversion is not anticipated to result in any significant noise impacts.



# 2.0 INTRODUCTION

This noise study has been completed to determine the noise impacts associated with the 2012 Modified Project as compared to the 2011 Approved Project.

# 2.1 <u>Purpose of Report</u>

The purpose of this work effort is to support the DSSEIR that analyzes the environmental impacts associated with the 2012 Modified Project as compared to those of the 2011 Approved Project, which, as noted for noise purposes, is essentially the impact analyzed in the 2003 EIR.

# 2.2 <u>Project Location</u>

The Proposed Project Site refers to and encompasses; 1) the Heritage Fields Development, also known as the Great Park Neighborhoods, consisting of nine existing Development Districts; 2) the TCA Property; 3) the City Parcels; and 4) the Wildlife Corridor Sports Park District, all of which are located within the areas designated as Existing PA 30 and Existing PA 51 in the City's General Plan, northeast of the freeway junction of I-5 and I-405 within the City, as shown on Exhibit 2-A.

# 2.3 2012 Modified Project

The 2012 Modified Project changes the 2011 Approved Project as follows:

- Combines Existing PAs 30 and 51, and the TCA Property, into a single PA, Combined PA 51;
- Rezones property in Districts 2, 3, and 6 from 3.2 Transit Oriented Development,
   4.3 Vehicle Related Commercial, and 5.4 B General Industrial to 8.1 Trails and
   Transit Oriented Development.
- Rezones 13-acres in District 6 (formerly District 9) from its current 1.1 Agriculture zoning to 1.4 Preservation.
- Rezones the City Parcels from 3.2 Transit Oriented Development to 8.1 Trails and Transit Oriented District.



# EXHIBIT 2-A PROJECT LOCATION





Heritage Fields Project 2012 Noise Study City of Irvine, CA (JN - 08141:locmap.mxd)



- Relocates the 132 acre Wildlife Corridor within District 5 adjacent to the Borrego Canyon Wash.
- Zones the approximately 11 acres between the current western boundary of Existing PA 51 and SR-133 between Trabuco Road and Irvine Boulevard, currently owned by TCA to 8.1 TTOD.
- Amends the Master Plan of Arterial Highways, Figure B-1, and other General Plan Maps, as necessary, to eliminate the extension of Rockfield Boulevard from the eastern project boundary to Marine Way once the Orange County Transportation Authority (OCTA) has approved this proposed amendment to the countywide Master Plan of Arterial Highways.
- Amends the General Plan and Zoning Ordinance to allow the following:
  - 3,412 multi-use residential units within Combined PA 51, in addition to the 4,894 units already allocated in Districts 1 North, 1 South, 4, 7, and 8.
  - Modify non-residential uses to allow:
    - o 3,364,000 square feet of Medical and Science
    - 1,318,200 square feet of Multi-Use. The Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, subject to a vehicle trip limit.
    - o 220,000 square feet of Community Commercial
- Grants, pursuant to State law, up to 1,194 additional DB Units (35% of 3,412) plus any additional DB Units associated with the optional conversion and granted pursuant to State law.
- Encourages Accessory Retail within Combined PA 51, as defined in the City of Irvine Zoning Code.

The 2012 Modified Project consists of 4,606 dwelling units (3,412 base units and 1,194 DB Units). The 2012 Modified Project also includes the option to convert up to 535,000 square



feet of Multi-Use to up to 889 base units and 311 DB Units, granted pursuant to State law. These are in addition to the already approved 4,894 dwelling units.

The 2012 Modified Project includes two options for the "Main Street" development along Trabuco Road east of "O" Street. Option 1 includes Community Commercial and Multi-Use north of Trabuco Road with Residential south of Trabuco in District 1 South. Option 2 will study Residential north of Trabuco Road with Community Commercial, Multi-Use, and Residential south of Trabuco Road in District 1 South. Both options will include a 2,600 student high school in District 5.

The 2012 Modified Project also includes implementation of recreational facilities in the previously approved Sports Park District of the Orange County Great Park (Great Park). The 2012 Modified Project also proposes to Modify Objective B-1 to identify locations where LOS E is acceptable. The 2012 Modified Project incorporates the Mitigation Measures recommended by the 2011 Certified EIR and adopted by the City in the Mitigation Monitoring and Reporting Program.

# 2.4 <u>Previous Noise Documentation</u>

The 2011 Certified EIR (see Section 5.7 of the 2011 SEIR) summarized the *Great Park Neighborhoods General Plan Amendment/Zone Change Noise Impact Analysis* prepared by Urban Crossroads on May 25, 2011 (the "2011 Noise Study") was included as Appendix K [2] of the 2011 SEIR. The 2011 Noise Study, as summarized in the 2011 Certified EIR, described mobile noise sources from nearby freeways, roadways, rail facilities, and vehicle use at adjacent commercial businesses, light industrial facilities, and agricultural lands as the dominate noise source in the project area. Stationary sources of noise included temporary and intermittent noise from construction activities and agricultural operations, noise associated with the industrial/business parks to the east and the business park and entertainment uses to the south.

Since certification of the 2011 SEIR, the City has adopted one addendum, Addendum 8. That document concluded that no new environmental noise effects would result from the project analyzed therein.



# 3.0 NOISE FUNDAMENTALS

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm or when it has adverse effects on health.

## 3.1 Range of Noise

Since the range of sound that the human ear can detect is so large, the scale used to measure sound intensity is a scale based on multiples of 10, the logarithmic scale. The unit of measure in which a sound intensity is described is the decibel (dB). Each interval of 10 decibels indicates a sound energy ten times greater than before, which is perceived by the human ear as being roughly twice as loud [5]. However, due to the internal mechanism of the human ear and how it receives and processes noise, when two sound sources of equal intensity or power are measured together, their combined effect (intensity level) is 3 dBA higher than the level of either separately. Thus, two 72 dBA cars together measure 75 dBA under ideal conditions.

The most common sounds vary between 40 dBA (very quiet) to 100 dBA (very loud) [5]. Normal conversation at three feet is roughly at 60 dBA, while loud jet engine noises equate to 110 dBA at approximately 100 feet, which can cause serious discomfort [5]. Exhibit 3-A presents a summary of the typical noise levels and their subjective loudness and effects that are described in more detail below.

## 3.2 <u>Effects of Noise</u>

Harmful effects of noise can include speech interference; sleep disruption and loss of hearing. High background noise levels can affect performance and learning processes through distraction, reduced accuracy, increased fatigue, annoyance and irritability, the inability to concentrate, and sleep prevention [5].

Several factors determine whether a particular noise will interfere with sleep. These factors include the noise level and characteristics, the stage of sleep, the individual's age and motivation to waken [5].



# EXHIBIT 3-A TYPICAL NOISE LEVELS AND THEIR SUBJECTIVE LOUDNESS AND EFFECTS

COMMON OUTDOOR ACTIVITIES	COMMON INDOOR ACTIVITIES	A - WEIGHTED SOUND LEVEL dBA	SUBJECTIVE LOUDNESS	EFFECTS OF NOISE
THRESHOLD OF PAIN		140		
NEAR JET ENGINE		130	INTOLERABLE OR	
		120	DEAFENING	HEARING LOSS
JET FLY-OVER AT 300m (1000 ft)	ROCK BAND	110		
LOUD AUTO HORN		100		
GAS LAWN MOWER AT 1m (3 ft)		90		
DIESEL TRUCK AT 15m (50 ft), at 80 km/hr (50 mph)	FOOD BLENDER AT 1m (3 ft)	80		
NOISY URBAN AREA, DAYTIME	VACUUM CLEANER AT 3m (10 ft)	70	LOUD	SPEECH INTERFERENCE
HEAVY TRAFFIC AT 90m (300 ft)	NORMAL SPEECH AT 1m (3 ft)	60		
QUIET URBAN DAYTIME	LARGE BUSINESS OFFICE	50	MODERATE	CI EED
QUIET URBAN NIGHTTIME	THEATER, LARGE CONFERENCE ROOM (BACKGROUND)	40		DISTURBANCE
QUIET SUBURBAN NIGHTTIME	LIBRARY	30		
QUIET RURAL NIGHTTIME	BEDROOM AT NIGHT, CONCERT HALL (BACKGROUND)	20	FAINT	
	BROADCAST/RECORDING STUDIO	10		NO EFFECT
LOWEST THRESHOLD OF HUMAN HEARING	LOWEST THRESHOLD OF HUMAN HEARING	0		

SOURCE: NOISE TECHNICAL SUPPLEMENT BY CALTRANS



## 3.3 <u>Noise Descriptors</u>

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (Leq). Leq represents a steady sound level containing the same total energy as a time-varying level over a given measurement interval. Leq's may represent any desired length of time; however, one hour is the most commonly used in environmental work. Consequently, Leq's can vary depending upon the time of day. In traffic noise measurements, the noisiest hour of the day is considered the benchmark of a road's noise emissions; therefore, the peak hour Leq is the noise metric used by Caltrans for all traffic noise impact analyses [5].

Peak hour noise levels, while useful, do not completely describe a given noise environment. Noise levels lower than peak hour levels may be disturbing if they occur during times when quiet is most desirable, namely evening and nighttime (sleeping) hours. To account for this, the Community Noise Equivalent Level (CNEL), representing a composite twenty-four hour noise level, is utilized.

The Community Noise Equivalent Level (CNEL) is the weighted average of the intensity of a sound, with corrections for time of day, and averaged over 24 hours. The time of day corrections require the addition of five decibels to sound levels in the evening from 7 p.m. to 10 p.m., and the addition of ten decibels to sound levels at night between 10 p.m. and 7 a.m. These additions are made to account for the noise sensitive time periods during the evening and night hours when sound appears louder and it is weighted accordingly. CNEL does not represent the actual sound level heard at any particular time, but rather represents the total sound exposure. The City of Irvine relies on the CNEL noise standard to assess transportation related impacts on noise sensitive land uses [6], [7].

# 3.4 Traffic Noise Prediction

According to the *Highway Traffic Noise Analysis and Abatement Policy and Guidance,* provided by the Federal Highway Administration [8], the level of traffic noise depends on three primary factors: (1) the volume of the traffic, (2) the speed of the traffic, and (3) the



vehicle mix within the flow of traffic. Generally, the loudness of traffic noise is increased by heavier traffic volumes, higher speeds, and a greater number of trucks. A doubling of the traffic volume, assuming that the speed and vehicle mix do not change, results in a noise level increase of 3 dBA. The vehicle mix on a given roadway may also have an effect on community noise levels. As the number of medium and heavy trucks increases and becomes a larger percentage of the vehicle mix, adjacent noise level impacts will increase. Vehicle noise is a combination of the noise produced by the engine, exhaust, and tires on the roadway.

#### 3.5 Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. Caltrans research has shown that the use of soft site conditions is more appropriate for the application of the FHWA traffic noise prediction model used in this analysis. [5] In addition, the City of Irvine *Noise Modeling and Measurement* guidelines [9] utilize soft site condition to assess roadway noise.

#### 3.6 Noise Control

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receptor by controlling the noise source, transmission path, receptor, or all three. This concept is known as the source-path-receptor concept. In general, noise control measures can be applied to any and all of these three elements.



## 3.7 Noise Barrier Attenuation [8]

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receptor. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of the noise source. Table 3-1 provides summarizes the barrier attenuation.

## 3.8 Community Response to Noise

Approximately ten (10) percent of the population has a very low tolerance for noise and will object to any noise not of their own making. Consequently, even in the quietest environment, some complaints will occur. Another 25 percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment. [10]

Despite this variability in behavior on an individual level, the population as a whole can be expected to exhibit the following responses to changes in noise levels. An increase or decrease of 1.0 dBA cannot be perceived except in carefully controlled laboratory experiments, a change of 3.0 dBA are considered "barely perceptible," and changes of 5 dBA are considered "readily perceptible." [5], [8]. Table 3-2 shows the effects of sound level changes relative to loudness and acoustic energy.

## 3.9 Land Use Compatibility

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches and residences are considered to be more sensitive to noise intrusion than are commercial or industrial activities. Ambient noise levels can also affect the perceived desirability or livability of a development. For these reasons, land use compatibility with the noise environment is an important consideration in the planning and design process.



#### Table 3-1

## Barrier Attenuation<sup>1</sup>

Reduction in Sound Level	Reduction in Acoustic Energy	Degree of Difficulty to Obtain Reduction
5 dBA	0.70	Simple
10 dBA	0.90	Attainable
15 dBA	0.97	Very Difficult
20 dBA	0.99	Nearly Impossible

<sup>1</sup> Highway Traffic Noise Analysis and Abatement Policy and Guidance, U.S. Department of Transportation,

Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, June 1995.



#### Table 3-2

# Decibel Changes, Loudness and Energy Loss<sup>1</sup>

Sound Level Change	Relative Loudness	Acoustic Energy Loss
0 dBA	Reference	0%
-3 dBA	Barely Perceptible Change	50%
-5 dBA	Readily Perceptible Change	67%
-10 dBA	Half as Loud	90%
-20 dBA	1/4 as Loud	99%
-30 dBA	1/8 as Loud	99.9%

<sup>1</sup> Highway Traffic Noise Analysis and Abatement Policy and Guidance, U.S. Department of Transportation,

Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, June 1995.



# 4.0 REGULATORY SETTING

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise. The City of Irvine regulates noise through the City of Irvine Municipal Code, Title 6, Division 8, Chapter 2, Noise (Sections 6-8-201 through 6-8-209) [4]. Potential noise impacts were evaluated based on the City of Irvine Municipal Code, City of Irvine General Plan and FHWA methodology to determine noise impacts from the construction and operation of the 2012 Modified Project.

# 4.1 <u>State of California Noise Requirements</u>

The State of California regulates freeway noise, sets standards for sound transmission, provides occupational noise control criteria, identifies noise standards and provides guidance for local land use compatibility. State law requires that each county and city adopt a General Plan that includes a Noise Element which is to be prepared according to guidelines adopted by the Governor's Office of Planning and Research. [11] The purpose of the Noise Element is to "limit the exposure of the community to excessive noise levels".

In addition, the (CEQA) requires that all known environmental effects of a project be analyzed, including environmental noise impacts. Under CEQA, a project has a potentially significant impact if the project exposes people to noise levels in excess of thresholds, which can include standards established in the local general plan or noise ordinance.

# 4.2 <u>State of California Building Code</u>

The State of California's noise insulation standards are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 2, and the California Building Code. These noise standards are applied to new construction in California for the



purpose of controlling interior noise levels resulting from exterior noise sources. The regulations specify that acoustical studies must be prepared when noise-sensitive structures, such as residential buildings, schools, or hospitals, are located near major transportation noise sources, and where such noise sources create an exterior noise level of 60 dBA CNEL or higher. Acoustical studies that accompany building plans must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. For new residential buildings, schools, and hospitals, the acceptable interior noise limit for new construction is 45 dBA CNEL. Title 21 of the California Code of Regulations prescribes additional requirements for noise-sensitive structures within the 65 dBA CNEL noise contour of an airport.

#### 4.3 City of Irvine Land Use Compatibility Criteria

The noise standards specified in the City of Irvine Noise Element [8] are a guideline to evaluate the acceptability of the noise levels generated by traffic flow. These standards are for assessment of long-term traffic noise impacts on land uses. The City of Irvine uses the state's land use compatibility standards shown in Table 4-1 to determine the compatibility of a proposed land use based on the noise environment. Based on these standards, the City has developed policies to ensure land use compatibility when placing new land uses. The City uses 65 dBA CNEL as the critical criterion for assessing the compatibility of residential land uses with noise sources. The City requires that, for new residential land uses, the noise levels in the exterior areas considered by the City to be noise sensitive not exceed 65 dBA CNEL. In addition, the City requires that commercial developments achieve an indoor noise standard of 45 dBA CNEL and that residential developments achieve an indoor noise standard of 45 dBA CNEL with windows closed, which is based on the California Building Code.



Table 4-1							
State of California Land Use Compatibility							
for Exterior Commun	itv Noise						
	<i>ny</i>						
Noise Range (Ldn or CNEL), dB							
Land Use Category	Ι		III	IV			
Passively used open spaces	50	50-55	55–70	70+			
Auditoriums, concert halls, amphitheaters	45-50	50-65	65–70	70+			
Residential: low-density single-family, duplex, mobile homes	50-55	55–70	70–75	75+			
Residential: multifamily	50-60	60–70	70–75	75+			
Transient lodging: motels, hotels	50-60	60–70	70–80	80+			
Schools, libraries, churches, hospitals, nursing homes	50-60	60–70	70–80	80+			
Actively used open spaces: playgrounds, neighborhood parks	50-67	-	67–73	73+			
Golf courses, riding stables, water recreation, cemeteries	50-70	_	70–80	80+			
Office buildings, business commercial and professional	50-67	67–75	75+	_			
Industrial, manufacturing, utilities, agriculture	50-70	70–75	75+	-			
Source: State of California General Plan Guidelines, 2003	Source: State of California General Plan Guidelines, 2003.						
Noise Range I-Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal							
conventional construction, without any special noise insulation requirements.							
reduction requirements is made and needed noise insulation features are included i	n the design Conv	ing aner a detailed	tion but with clo	noise			
windows and fresh air supply systems or air conditioning, will normally suffice.	The design. com		bion, but with or	300			

Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design. Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

#### 4.4 City of Irvine Transportation Noise Standards

To control transportation-related noise sources such as arterial roads, freeways, airport and railroads, the City of Irvine has established in the Noise Element of its General Plan the guidelines provided in Table 4-2 for acceptable community noise levels. The City of Irvine General Plan, adopted June 13, 2006, provides specific noise levels standards for all land use categories that are used to regulated traffic related noise level impacts. For noise sensitive uses which contain habitable dwellings, both exterior and interior noise level standards are established.



r							
	Table 4-2						
	City of Irvine Interior and Exterio	ır					
	Noise Standards						
	Land Use Categories Energy Average (dBA CNEL)						
Categories	Uses	Interior <sup>1</sup>	Exterior <sup>2</sup>				
Residential	Single-Family	453 / 554	657				
	Multi-Family	45° / 55°	00'				
	Mobile Home		655				
Commercial/ Industrial	Hotel, motel, transient lodging	45	65 <sup>6</sup>				
	Commercial, retail, bank, restaurant	55	-				
	Office building, professional office, research &		1				
	development	JC	-				
	Amphitheater, concert hall, auditorium, meeting hall	45	-				
	Gymnasium (Multipurpose)	50	-				
	Health Clubs	55	-				
	Manufacturing, warehousing, wholesale, utilities	65	-				
	Movie theatre	45	-				
Institutional	Hospital, school classroom	45	65				
i	Church, library	45	-				
Open Space	Parks		65				
Interpretation:	<u> </u>						
1. Interior environment exclu	1. Interior environment excludes bathrooms, toilets, closets and corridors.						
2. Limited to private yard of s	single family homes, multifamily private patio or balcony served by a	means of exit from inside, n	nobile home park,				
hospital patio, park's picnic a	Irea, school's playground, and hotel and motel recreation areas.	rel ventilation chall be provi	ded purcuant to				
<ol> <li>Noise requirement, with closed windows, mechanical ventilation system or other means or natural ventilation shall be provided pursuant to </li></ol>							

Appendix Chapter 12, Section 1208 of UBC.

4. Noise level with open windows, if they are used to meet natural ventilation requirement.

5. Exterior noise level such that interior noise level will not exceed 45 dB CNEL.

6. Except those areas affected by aircraft noise.

7. Multi-family developments with balconies that do not meet the 65 CNEL are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts.

For noise sensitive residential uses, the Noise Element requires an exterior noise level not to exceed 65 dBA CNEL for noise-sensitive outdoor living areas and an interior noise level not to exceed 45 dBA CNEL. Noise sensitive exterior uses are limited to the private yards of single-family homes and to multi-family private patios that are assessed by a means of exit from inside the unit. However, multi-family developments with balconies that do not meet the 65 dBA CNEL exterior noise level standards are required to provide occupancy disclosure notices to all future tenants regarding potential noise impacts. The City of Irvine Noise Element is included in Appendix 4.1 to this report.

## 4.5 <u>City of Irvine Non-transportation/Stationary Source Noise Standards</u>

The City's Noise Ordinance included the municipal code [4] establishes the maximum permissible noise level that may intrude into a neighbor's property. The Noise Ordinance (adopted in 1975 and revised in February 2005) establishes noise level standards for various land use categories affected by stationary noise sources. For residential



properties, the exterior noise level shall not exceed 55 dBA Leq during daytime hours (7:00 AM to 10:00 PM) and shall not exceed 50 dBA Leq during the nighttime hours (10:00 PM to 7:00 AM) for more than 30 minutes in any hour. For events with shorter duration, these noise levels are adjusted upwards accordingly, as shown in Table 4-3. (Section 6-8-204.)

Table 4-3City of Irvine Exterior Noise Standards								
Noise Standard (L <sub>eg</sub> )								
Noise Zone	Time Interval	L50	L <sub>25</sub>	L8	L <sub>2</sub>	L <sub>max</sub>		
Zone 1: hospitals, libraries, churches, schools, and	7:00 AM to 10:00 PM	55	60	65	70	75		
residential properties	10:00 PM to 7:00 AM	50	55	60	65	70		
Zone 2: professional office and public institutional	Anytime	55	60	65	70	75		
Zone 3: commercial, excluding professional office	Anytime	60	65	70	75	80		
Zone 4: industrial	Anytime	70	75	80	85	90		
Source: City of Invine, Municipal Code, Chapter 2, Noise	Source: City of Invine, Municipal Code, Chapter 2, Noise							

Source: City of Irvine, Municipal Code, Chapter 2, Noise.

Noise standards shall be reduced by five dB for impact, or predominant tone noise or for noises consisting of speech or music. In the event that the noise source and the affected property are within different noise zones, the noise standards of the affected property shall apply.

Maintenance of property may exceed the noise standards, so long as maintenance activities that exceed the noise limits in Table 4-3 are restricted to the hours of 7:00 AM through 7:00 PM Mondays through Fridays or 9:00 AM through 6:00 PM Saturdays. In addition, the City further restricts the maximum noise levels of leaf blowers and hours of use to 8:00 AM through 5:00 PM Mondays through Fridays and 9:00 AM through 5:00 PM on Saturdays. (Section 6-8-205 (B), (C).)

# 4.6 <u>Commercial Deliveries/Pickups</u>

Deliveries to or pickups from commercial properties that share a property line with any residential property are required to limit the hours of delivery/pickup service to 7:00 AM through 10:00 PM daily. (Section 6.8.205 (A).)

# 4.7 <u>City of Irvine Construction Noise Standards</u>

The Noise Ordinance also regulates the timing of construction activities and includes special provisions for sensitive land uses. Section 6-8-205, Special Provisions, states that "construction activities and agricultural operations may occur between 7:00 a.m. and 7:00



p.m. Monday through Friday, and 9:00 a.m. and 6:00 p.m. on Saturdays. No construction activities shall be permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative.

Trucks, vehicles, and equipment that are making or are involved with material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City shall not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity and agricultural will be permitted outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required."

# 4.8 <u>City of Irvine Noise Standard Exemptions</u>

The Noise Ordinance also determines what specific activities are exempt from the noise provisions. Under Section 6-8-205 (D) of the Special Provisions, which states that activities lawfully conducted on public parks, public playgrounds, and public or private school grounds are exempt from the Noise Ordinance's provisions. The City of Irvine Noise Ordinance is included in Appendix 4.2 to this report.



# 5.0 SIGNIFICANCE CRITERIA

The following significance criteria are based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. For the purposes of this report, noise impacts would be potentially significant if the 2012 Modified Project is determined to result in or cause:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- A substantial permanent increase in ambient noise levels in the Project vicinity above existing levels without the proposed Project; or
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above noise levels existing without the proposed Project.

While the CEQA Guidelines and the City's noise standards provide direction on noise compatibility and establish noise standards by land use type that are sufficient to assess the significance of noise impacts under the first threshold, they do not define the levels at which increases are considered substantial for use under the second and third threshold. Under CEQA, consideration must be given to the magnitude of the increase, the existing ambient noise levels and the location of noise-sensitive receptors in order to determine if a noise increase represents a significant adverse environmental effect.

The Federal Highway Administration and Caltrans both identify changes in noise levels of greater than 3 dBA as "barely perceptible," while changes of 5 dBA are considered "readily perceptible." [5], [8] In a community situation, the noise exposure is extended over a long time period, and changes in noise levels occur over a period of years. For the purpose of this analysis, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people.

On this basis, and for the purposes of this study, a substantial permanent increase in noise levels attributable to the 2012 Modified Project would occur if the projected noise levels generated by the "General Plan Buildout Post-2030 with 2012 Modified Project" scenario would exceed the 65 dBA. CNEL General Plan Standard *and* the project-generated noise would create a project-related



traffic noise level increase of greater than 1.5 dBA within off-site noise-sensitive areas. This is consistent with the 1.5 dBA threshold used in the 2011 Certified EIR (Section 5-7, *Noise* p. 5.7-29).

For construction noise, a substantial temporary increase in noise would occur if project-related construction activities occurred outside of the time frames permitted under the Noise Ordinance (construction activities are prohibited between 7:00 a.m. and 7:00 p.m. Mondays through Fridays, and 9:00 a.m. and 6:00 p.m. on Saturdays).



# 6.0 METHODS AND PROCEDURES

The following section outlines the methods and procedures used to model and analyze the future off-site traffic noise environment.

# 6.1 <u>FHWA Traffic Noise Prediction Model</u>

The roadway noise impacts from the 2012 Modified Project's vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108 (the "FHWA Model") [12]. The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level ("REMEL"). Adjustments are then made to the REMEL to account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic ("ADT"), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

Table 6-1 presents the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. Soft site conditions were used to develop the noise level contour boundaries. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation.

Table 6-2 presents the hourly traffic flow distributions (vehicle mixes) used for this analysis. The vehicle mixes provide the hourly distribution percentages of automobile, medium trucks and heavy trucks for input into the FHWA Traffic Noise Prediction Model based on roadway types. Irvine's roadway mix is based on the typical vehicle mix data published on December 14, 1993 by the County of Orange Land Use/Noise Compatibility Manual [13].



#### Table 6-1

Location	Roadway Classification	Number of Lanes	Right of Way (Feet)	Vehicle Speed (MPH)
	Local Collector	2	56	35
	Secondary Arterial	4	114	50
Irvine <sup>1</sup>	Primary Highway	4	116	55
	Major Highway - 6 Lanes	6	140	60
	Major Highway - 8 Lanes	8	154	65
	Collector	2	66	40
	Secondary	4	80	45
Other <sup>2</sup>	Primary Arterial	4	100	50
	Major Arterial	6	120	55
	Principal	8	140	60

#### **Roadway Parameters**

<sup>1</sup> Road classifications and design speeds based on City of Irvine Standard Plans dated March 19, 2009.

<sup>2</sup> Other Jurisdictions include, Aliso Viejo, Laguna Hills, Laguna Woods, Lake Forest, Mission Viejo, Orange, Orange County, and Tustin.



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#### Table 6-2

# Hourly Traffic Flow Distribution<sup>1</sup>

Motor-vehicle Type	Daytime (7 am - 7 pm)	Evening (7 pm - 10 pm)	Nighttime (10 pm - 7 am)	Total % Traffic Flow	
Automobiles	77.5%	12.9%	9.6%	97.42%	
Medium Trucks	84.8%	4.9%	10.3%	1.84%	
Heavy Trucks	86.5%	2.7%	10.8%	0.74%	

<sup>1</sup> Hourly traffic flow distribution data published by the County of Orange Land Use/Noise Compatibility Manual December 1993.



## 6.2 Off-Site Traffic Noise Prediction Model Inputs

The General Plan Buildout Post-2030 average daily traffic volumes used for the off-site traffic noise prediction model are shown on in Table 6-3, and were taken from the <u>Heritage Fields 2012 Traffic Impact Analysis</u> prepared by Urban Crossroads, Inc. in May 2012 [1]. Table 6-3 provides the Average Daily Traffic Volumes used in the noise analysis for the 2011 Approved Project baseline scenario, and compares that baseline scenario to the 2012 Modified Project (Option 1 and Option 2).

The off-site traffic noise prediction model inputs are used to calculate the reference CNEL dBA noise levels at a distance of 100 feet from the centerline for the 395 off-site study area roadway segments. Noise level contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. In addition, noise level contours do not take into account the effect of any existing noise barriers or topography.



#### Table 6-3

## Post-2030 Off-Site Average Daily Traffic Volumes (1,000s)<sup>1</sup>

					0044	0040	0040
					2011	2012	2012
					Approved	Noaitiea	Modified
					Project	Project	Project
ID	Roadway	Segment	Classification	Jurisdiction	(Baseline)	(Option 1)	(Option 2)
1	s/o Barranca Pkwy.	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	2.2	2.8	2.8
2	n/o Trabuco Rd.	n/o Trabuco Rd.	Major Arterial	Mission Viejo	38.7	38.8	38.8
3	s/o Trabuco Rd.	s/o Trabuco Rd.	Major Arterial	Mission Viejo	42.8	43.0	43.0
4	s/o Jeronimo Rd.	s/o Jeronimo Rd.	Major Arterial	Mission Viejo	59.3	59.7	59.7
5	n/o Muirlands Bl.	n/o Muirlands Bl.	Major Arterial	Mission Viejo	59.8	60.1	60.1
6	b/w I-5 NB Ramps and Muirlands Bl.	BI.	Major Arterial	Mission Viejo	65.8	66.0	66.0
7	s/o I-5 SB Ramps	s/o I-5 SB Ramps	Major Arterial	Laguna Hills	53.3	53.3	53.3
8	s/o Paseo de Valencia	s/o Paseo de Valencia	Major Arterial	Laguna Hills	46.0	45.9	45.8
9	s/o Moulton Pkwy.	s/o Moulton Pkwy.	Major Arterial	Laguna Hills	44.6	44.5	44.5
10	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Aliso Viejo	18.5	18.5	18.5
11	w/o Culver Dr.	w/o Culver Dr.	Major Highway Irvine	Irvine	26.9	27.2	27.2
12	e/o Culver Dr.	e/o Culver Dr.	Primary Highway Irvine	Irvine	28.9	29.3	29.3
13	e/o W. Yale Loop	e/o W. Yale Loop	Primary Highway Irvine	Irvine	27.9	28.2	28.2
14	e/o Lake Rd.	e/o Lake Rd.	Primary Highway Irvine	Irvine	26.2	26.4	26.4
15	e/o Creek Rd.	e/o Creek Rd.	Primary Highway Irvine	Irvine	25.3	25.4	25.4
16	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	30.2	30.3	30.3
17	b/w Jeffrey Rd. and Royal Oak	b/w Jeffrey Rd. and Royal Oak	Primary Highway Irvine	Irvine	23.6	23.7	23.7
18	b/w Royal Oak and Valley Oak	b/w Royal Oak and Valley Oak	Primary Highway Irvine	Irvine	21.1	21.2	21.1
19	w/o Sand Canyon Av.	w/o Sand Canyon Av.	Major Highway Irvine	Irvine	21.0	21.1	21.0
20	e/o Sand Canyon. Av.	e/o Sand Canyon. Av.	Major Highway Irvine	Irvine	31.9	32.0	32.0
21	e/o Laguna Canyon Rd.	e/o Laguna Canyon Rd.	Primary Highway Irvine	Irvine	19.1	19.3	19.3
22	b/w Pacifica and Banting	b/w Pacifica and Banting	Primary Highway Irvine	Irvine	20.1	20.4	20.4
23	w/o Meridian	w/o Meridian	Primary Highway Irvine	Irvine	17.7	17.8	17.8
24	b/w Meridian and ICD	b/w Meridian and ICD	Major Highway Irvine	Irvine	18.0	17.9	17.9
25	b/w Enterprise and Gateway Bl.	b/w Enterprise and Gateway Bl.	Major Highway Irvine	Irvine	37.2	37.5	37.4
26	b/w Enterprise and I-5 NB Ramps	b/w Enterprise and I-5 NB Ramps	Major Highway Irvine	Irvine	51.7	52.0	52.0
27	b/w I-5 NB Ramps and Technology Dr. W	Technology Dr. W	Major Highway Irvine	Irvine	53.5	53.9	53.9
28	b/w Techonology Dr. W and Ada	b/w Techonology Dr. W and Ada	Major Highway Irvine	Irvine	39.8	40.7	40.7
29	e/o Ada	e/o Ada	Major Highway Irvine	Irvine	35.3	35.5	35.5
30	w/o Marine Wy.	w/o Marine Wy.	Major Highway Irvine	Irvine	36.7	37.3	37.4
31	e/o Technology	e/o Technology	Major Highway Irvine	Irvine	36.9	37.3	37.4
32	s/o Barranca Pkwy./Muirlands Bl.	s/o Barranca Pkwy./Muirlands Bl.	Major Highway Irvine	Irvine	35.9	37.3	37.3
33	n/o Barranca Pkwy./Muirlands Bl.	n/o Barranca Pkwy./Muirlands Bl.	Major Highway Irvine	Irvine	42.7	41.9	42.0
34	s/o Jeronimo Rd.	s/o Jeronimo Rd.	Major Highway Irvine	Irvine	42.7	41.9	42.0
35	n/o Jeronimo Rd.	n/o Jeronimo Rd.	Major Highway Irvine	Irvine	39.0	38.2	38.2
36	s/o Toledo Wy.	s/o Toledo Wy.	Major Highway Irvine	Irvine	31.5	30.7	30.8
37	n/o Toledo Wy.	n/o Toledo Wy.	Major Highway Irvine	Irvine	31.4	30.1	30.1
38	s/o Irvine BI. / Trabuco Rd.	s/o Irvine Bl. / Trabuco Rd.	Major Highway Irvine	Irvine	33.1	33.4	33.4
39	n/o Irvine BI.	n/o Irvine Bl.	Major Highway Irvine	Irvine	40.0	40.9	40.9
40	n/o Commercentre	n/o Commercentre	Major Arterial	Lake Forest	53.0	53.2	53.2


					2011	2012	2012
					Approved	Modified	Modified
					Project	Project	Project
ID	Roadway	Segment	Classification	Jurisdiction	(Baseline)	(Option 1)	(Option 2)
41	s/o SR-241 Ramps	s/o SR-241 Ramps	Primary Arterial	Lake Forest	31.0	30.9	30.9
42	n/o SR-241 Ramps	n/o SR-241 Ramps	Major Arterial	Lake Forest	28.0	28.1	28.0
43	w/o Ridge Route Dr.	w/o Ridge Route Dr.	Primary Arterial	Laguna Hills	10.2	10.1	10.1
44	w/o Paseo de Valencia	w/o Paseo de Valencia	Primary Arterial	Laguna Hills	17.3	17.3	17.3
45	b/w Paseo de Valencia and El Toro Rd.	Toro Rd.	Primary Arterial	Laguna Hills	36.3	36.4	36.4
46	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Laguna Hills	23.4	23.5	23.5
47	s/o Portola Pkwy.	s/o Portola Pkwy.	Primary Arterial	Lake Forest	20.0	20.0	20.0
48	n/o Commercentre Dr.	n/o Commercentre Dr.	Primary Arterial	Lake Forest	33.0	33.1	33.1
49	n/o Irvine Bl.	n/o Irvine BI.	Primary Arterial	Lake Forest	38.0	37.9	37.9
50	s/o Irvine BI.	s/o Irvine BI.	Major Highway Irvine	Irvine	48.7	48.4	48.4
51	b/w Toledo Wy. and Jeronimo Rd.	b/w Toledo Wy. and Jeronimo Rd.	Major Highway Irvine	Irvine	56.2	56.4	56.4
52	n/o Muirlands Bl.	n/o Muirlands Bl.	Major Highway Irvine	Irvine	62.4	62.5	62.5
53	s/o Muirlands Bl.	s/o Muirlands Bl.	Irvine	Irvine	62.0	62.0	62.0
54	s/o Rockfield Bl.	s/o Rockfield Bl.	Major Highway Irvine	Irvine	76.6	79.3	79.3
55	n/o I-5 NB Ramps	n/o I-5 NB Ramps	Major Highway Irvine	Irvine	83.2	83.2	83.1
56	b/w I-5 SB Ramps and Research Dr.	Dr.	Major Highway Irvine	Irvine	35.5	36.0	35.8
57	b/w Research Dr. and ICD	b/w Research Dr. and ICD	Major Highway Irvine	Irvine	17.3	17.6	17.4
58	s/ICD	s/ICD	Major Highway Irvine	Irvine	16.3	16.3	16.3
59	b/w Lake Forest Dr. and Ridge Route Dr.	Route Dr.	Major Highway Irvine	Irvine	3.4	3.4	3.4
60	b/w Ridge Route Dr. and Laguna Canyon	Canyon	Major Highway Irvine	Irvine	10.7	10.8	10.8
61	w/o Culver Dr.	w/o Culver Dr.	Major Highway Irvine	Irvine	27.0	27.2	27.2
62	e/o Culver Dr.	e/o Culver Dr.	Primary Highway Irvine	Irvine	31.9	32.0	32.0
63	e/o W. Yale Lp.	e/o W. Yale Lp.	Primary Highway Irvine	Irvine	29.0	29.2	29.2
64	e/o Lake Rd.	e/o Lake Rd.	Primary Highway Irvine	Irvine	25.9	26.0	26.1
65	b/w Creek Rd. and Lyon	b/w Creek Rd. and Lyon	Primary Highway Irvine	Irvine	24.7	24.9	24.9
66	w/o E. Yale Lp.	w/o E. Yale Lp.	Primary Highway Irvine	Irvine	24.4	24.9	24.9
67	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	27.4	27.7	27.7
68	e/o Jeffrey Rd.	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	17.7	17.9	18.0
69	w/o Sand Canyon. Av.	w/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	18.0	18.1	18.1
70	e/o Sand Canyon. Av.	e/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	15.6	15.6	15.6
71	e/o Laguna Canyon Rd.	e/o Laguna Canyon Rd.	Primary Highway Irvine	Irvine	14.8	14.9	14.9
72	b/w Discovery and Banting	b/w Discovery and Banting	Primary Highway Irvine	Irvine	13.1	13.3	13.3
73	s/o ICD	s/o ICD	Primary Highway Irvine	Irvine	17.9	18.4	18.4
74	b/w I-5 HOV Ramp and ICD	b/w I-5 HOV Ramp and ICD	Primary Highway Irvine	Irvine	20.4	21.0	21.0
75	s/o Technology	s/o Technology	Primary Highway Irvine	Irvine	21.8	22.4	22.4
76	n/o Technology	n/o Technology	Primary Highway Irvine	Irvine	23.0	24.1	24.1
77	e/o Ada	e/o Ada	Primary Highway Irvine	Irvine	20.4	21.8	21.8
78	w/o Marine Wy.	w/o Marine Wy.	Primary Highway Irvine	Irvine	24.4	25.7	25.7
79	w/o Alton Pkwy.	w/o Alton Pkwy.	Primary Highway Irvine	Irvine	21.8	20.7	20.7
80	e/o Alton Pkwy.	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	19.3	20.4	20.4



					2011	2012	2012
					Approved	Modified	Modified
					Project	Project	Project
ID	Roadway	Segment	Classification	Jurisdiction	(Baseline)	(Option 1)	(Option 2)
81	e/o Sterling	e/o Sterling	Primary Highway Irvine	Irvine	15.4	16.1	16.1
82	w/o Jamboree Rd.	w/o Jamboree Rd.	Primary Arterial	Tustin	25.3	25.3	25.3
83	e/o Jamboree Rd.	e/o Jamboree Rd.	Primary Highway Irvine	Irvine	19.7	20.0	19.9
84	w/o Culver Dr.	w/o Culver Dr.	Primary Highway Irvine	Irvine	26.4	26.7	26.8
85	e/o Culver Dr.	e/o Culver Dr.	Primary Highway Irvine	Irvine	19.3	19.7	19.7
86	e/o Eastwood	e/o Eastwood	Primary Highway Irvine	Irvine	14.0	14.2	14.2
87	w/o Jamboree Rd.	w/o Jamboree Rd.	Primary Arterial	Orange	7.4	7.2	7.2
88	w/o Jamboree Rd.	w/o Jamboree Rd.	Major Arterial	Orange	26.7	28.3	28.2
89	e/o Jamboree Rd.	e/o Jamboree Rd.	Major Arterial	Orange	41.9	41.2	41.1
90	n/o Alton Pkwy.	n/o Alton Pkwy.	Local Collector Irvine	Irvine	4.4	4.3	4.4
91	s/o Portola Pkwy.	s/o Portola Pkwy.	Major Highway Irvine	Irvine	25.3	25.5	25.5
92	n/o Irvine BI.	n/o Irvine Bl.	Major Highway Irvine	Irvine	28.3	28.4	28.4
93	s/o Irvine BI.	s/o Irvine BI.	Major Highway Irvine	Irvine	36.3	36.7	36.7
94	n/o Bryan Av.	n/o Bryan Av.	Major Highway Irvine	Irvine	31.8	32.2	32.2
95	s/o Bryan Av.	s/o Bryan Av.	Major Highway Irvine	Irvine	50.7	51.3	51.3
96	n/o Trabuco Rd.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	51.6	52.0	51.9
97	s/o I-5 SB Ramps	s/o I-5 SB Ramps	Major Highway Irvine	Irvine	56.7	57.0	56.9
98	n/o Walnut Av.	n/o Walnut Av.	Major Highway Irvine	Irvine	51.4	51.8	51.8
99	b/w Walnut Av. and Deerfiled Dr.	b/w Walnut Av. and Deerfiled Dr.	Major Highway Irvine	Irvine	47.6	47.8	47.8
100	b/w Deerfield Dr. and ICD	b/w Deerfield Dr. and ICD	Major Highway Irvine	Irvine	42.5	42.9	42.9
101	b/w ICD and Warner Av.	b/w ICD and Warner Av.	Major Highway Irvine	Irvine	45.9	46.5	46.4
102	b/w Warner Av. and Barranca Pkwy.	Pkwy.	Major Highway Irvine	Irvine	46.4	47.2	47.2
103	n/o Alton Pkwy.	n/o Alton Pkwy.	Major Highway Irvine	Irvine	50.9	51.5	51.5
104	b/w Alton Pkwy. and Main St.	b/w Alton Pkwy. and Main St.	Major Highway Irvine	Irvine	51.7	52.1	52.1
105	b/w Main St. and San Leandro	b/w Main St. and San Leandro	Major Highway Irvine	Irvine	52.4	52.6	52.6
106	b/w San Leandro and I-405 NB Ramps	Ramps	Major Highway Irvine	Irvine	58.5	58.7	58.7
107	s/o Barranca Pkwy.	s/o Barranca Pkwy.	Secondary Arterial Irvine	Irvine	12.2	12.2	12.2
108	n/o Alton Pkwy.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	11.6	11.6	11.6
109	s/o Alton Pkwy.	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	11.5	11.5	11.5
110	e/o Tustin Ranch Rd.	e/o Tustin Ranch Rd.	Primary Arterial	Tustin	16.5	16.6	16.6
111	e/o Jamboree Rd.	e/o Jamboree Rd.	Primary Highway Irvine	Irvine	24.3	24.4	24.4
112	s/o Bryan Ave.	s/o Bryan Ave.	Primary Highway Irvine	Irvine	7.8	7.8	7.8
113	n/o Portola Pkwy./S. Margarita Pkwy.	Pkwy.	Major Arterial	Lake Forest	20.0	20.0	20.0
114	s/o Portola Pkwy./S. Margarita Pkwy.	Pkwy.	Major Arterial	Lake Forest	43.0	42.9	42.9
115	n/o Trabuco Rd.	n/o Trabuco Rd.	Major Arterial	Lake Forest	22.0	22.0	22.0
116	n/o Toledo Wy.	n/o Toledo Wy.	Principal	Lake Forest	44.0	43.7	43.8
117	n/o Jeronimo Rd.	n/o Jeronimo Rd.	Principal	Lake Forest	44.0	44.0	44.1
118	s/o Jeronimo Rd.	s/o Jeronimo Rd.	Principal	Lake Forest	46.0	46.0	46.0
119	n/o Rockfield Bl.	n/o Rockfield Bl.	Principal	Lake Forest	50.0	50.0	50.0
120	b/w Rockfield Bl.and I-5 NB Ramps	Ramps	Principal	Lake Forest	65.0	65.0	65.0



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121	b/w I-5 SB Ramps and Avenida Carlota	Carlota	Major Arterial	Laguna Hills	44.8	44.7	44.7
122	n/o Paseo de Valencia	n/o Paseo de Valencia	Major Arterial	Laguna Hills	29.6	29.6	29.6
123	s/o Paseo de Valencia	s/o Paseo de Valencia	Major Arterial	Laguan Woods	32.9	33.0	33.0
124	s/o Moulton Pkwy.	s/o Moulton Pkwy.	Major Arterial	Laguan Woods	32.4	32.2	32.2
125	n/o Aliso Creek Rd.	n/o Aliso Creek Rd.	Major Arterial	Laguan Woods	26.4	26.5	26.6
126	n/o SR-73	n/o SR-73	Major Arterial	Aliso Viejo	29.9	30.1	30.1
127	s/o SR-73	s/o SR-73	Primary Arterial	Orange County	17.8	17.8	17.8
128	b/w Gateway Bl. and Spectrum	b/w Gateway Bl. and Spectrum	Primary Highway Irvine	Irvine	8.7	8.7	8.7
129	b/w Pacifica and Spectrum	b/w Pacifica and Spectrum	Primary Highway Irvine	Irvine	8.9	8.9	8.9
130	w/o Fortune Dr.	w/o Fortune Dr.	Primary Highway Irvine	Irvine	7.1	7.2	7.1
131	n/o Alton Pkwy.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	1.7	1.7	1.7
132	w/o ICD	w/o ICD	Primary Highway Irvine	Irvine	2.7	2.8	2.8
133	n/o Portola Pkwy.	n/o Portola Pkwy.	Primary Arterial	Lake Forest	29.0	28.9	29.0
134	w/o Moulton Pkwy.	w/o Moulton Pkwy.	Primary Arterial	Aliso Viejo	11.7	11.7	11.7
135	e/o Jamboree Rd.	e/o Jamboree Rd.	Collector	Tustin	2.2	2.1	2.1
136	s/o Walnut Av.	s/o Walnut Av.	Local Collector Irvine	Irvine	11.7	11.5	11.5
137	n/o Edinger Av.	n/o Edinger Av.	Primary Highway Irvine	Irvine	13.2	13.1	13.1
138	b/w Edinger Av. And Paseo Westpark	Westpark	Primary Highway Irvine	Irvine	15.2	15.3	15.3
139	n/o ICD	n/o ICD	Primary Highway Irvine	Irvine	2.0	2.0	2.0
140	b/w Newport and Red Hill	b/w Newport and Red Hill	Major Arterial	Tustin	54.7	55.5	55.5
141	b/w Red Hill and Browning	b/w Red Hill and Browning	Primary Arterial	Tustin	53.4	54.1	54.1
142	w/o Tustin Ranch Rd.	w/o Tustin Ranch Rd.	Major Arterial	Tustin	47.8	48.2	48.3
143	w/o Jamboree Rd.	w/o Jamboree Rd.	Major Arterial	Tustin	41.9	42.2	42.2
144	e/o Jamboree Rd.	e/o Jamboree Rd.	Major Highway Irvine	Irvine	45.0	45.4	45.4
145	b/w SR-261 Ramps	b/w SR-261 Ramps	Major Highway Irvine	Irvine	43.8	44.3	44.2
146	e/o SR-261 NB Ramps	e/o SR-261 NB Ramps	Major Highway Irvine	Irvine	45.0	45.6	45.5
147	w/o Culver Dr.	w/o Culver Dr.	Major Highway Irvine	Irvine	38.4	39.0	38.9
148	e/o Culver Dr.	e/o Culver Dr.	Major Highway Irvine	Irvine	38.8	39.5	39.4
149	e/o Yale Av.	e/o Yale Av.	Major Highway Irvine	Irvine	42.4	42.8	42.8
150	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Major Highway Irvine	Irvine	37.5	37.7	37.7
151	e/o Jeffrey Rd.	e/o Jeffrey Rd.	Major Highway Irvine	Irvine	36.3	36.6	36.6
152	e/o Groveland	e/o Groveland	Major Highway Irvine	Irvine	36.5	36.9	36.8
153	e/o Sand Canyon. Av.	e/o Sand Canyon. Av.	Major Highway Irvine	Irvine	38.9	39.5	39.4
154	e/o SR-133 NB Ramps	e/o SR-133 NB Ramps	Major Highway Irvine	Irvine	42.5	43.3	43.1
155	w/o O St.	w/o O St.	Major Highway Irvine	Irvine	36.5	37.4	37.2
156	e/o O St.	e/o O St.	Major Highway Irvine	Irvine	39.2	40.0	40.0
157	w/o A St.	w/o A St.	Major Highway Irvine	Irvine	39.6	40.4	40.5
158	w/o Z St.	w/o Z St.	Major Highway Irvine	Irvine	45.3	46.4	46.4
159	e/o Z St.	e/o Z St.	Major Highway Irvine	Irvine	47.0	48.0	48.0
160	w/o LQ St.	w/o LQ St.	Major Highway Irvine	Irvine	46.7	45.6	45.6



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161	e/o LQ St.	e/o LQ St.	Major Highway Irvine	Irvine	52.5	49.4	49.4
162	w/o Alton Pkwy.	w/o Alton Pkwy.	Major Highway Irvine	Irvine	54.8	51.8	51.8
163	e/o Alton Pkwy.	e/o Alton Pkwy.	Major Highway Irvine	Irvine	43.9	42.4	42.4
164	w/o Jamboree	w/o Jamboree	Major Arterial	Tustin	26.8	27.2	27.2
165	e/o Jamboree	e/o Jamboree	Major Arterial	Tustin	30.2	30.3	30.3
166	e/o Hearthstone BI.	e/o Hearthstone Bl.	Major Highway Irvine	Irvine	25.7	26.0	26.0
167	e/o Culver Dr.	e/o Culver Dr.	Major Highway Irvine	Irvine	26.9	26.9	26.9
168	b/w Yale Av. And Fontaine Av.	b/w Yale Av. And Fontaine Av.	Major Highway Irvine	Irvine	28.8	28.8	28.8
169	e/o Jeffrey Rd.	e/o Jeffrey Rd.	Major Highway Irvine	Irvine	41.6	41.5	41.5
170	w/o Sand Canyon. Av.	w/o Sand Canyon. Av.	Major Highway Irvine	Irvine	25.7	26.1	26.1
171	e/o Sand Canyon Av.	e/o Sand Canyon Av.	Major Highway Irvine	Irvine	19.4	19.5	19.5
172	b/w Laguna Canyon Rd. and Discovery	Discovery	Major Highway Irvine	Irvine	17.7	17.9	17.9
173	w/o Barranca Pkwy.	w/o Barranca Pkwy.	Major Highway Irvine	Irvine	22.1	22.2	22.2
174	b/w Barranca Pkwy. and Gateway Bl.	BI.	Major Highway Irvine	Irvine	23.5	23.6	23.6
175	b/w Gateway Bl.and Alton Pkwy.	b/w Gateway Bl.and Alton Pkwy.	Major Highway Irvine	Irvine	20.9	20.9	20.9
176	b/w Alton Pkwy.and Spectrum	b/w Alton Pkwy.and Spectrum	Major Highway Irvine	Irvine	34.7	34.9	34.8
177	b/w Pacifica and Enterprise Dr.	b/w Pacifica and Enterprise Dr.	Major Highway Irvine	Irvine	35.1	35.1	35.0
178	b/w Enterprise and I-405 SB Ramps	Ramps	Major Highway Irvine	Irvine	52.9	52.9	52.8
179	b/w I-405 SB Ramps and Research Dr.	Research Dr.	Irvine	Irvine	13.3	13.4	13.4
180	b/w Research Dr. and Hubble	b/w Research Dr. and Hubble	Major Highway Irvine	Irvine	23.8	23.8	23.8
181	b/w Hubble and Bake Pkwy.	b/w Hubble and Bake Pkwy.	Major Highway Irvine	Irvine	22.3	22.3	22.3
182	b/w Bake Pkwy. and Muller	b/w Bake Pkwy. and Muller	Major Highway Irvine	Irvine	21.3	21.2	21.2
183	b/w Muller and Tesla	b/w Muller and Tesla	Major Highway Irvine	Irvine	20.6	20.6	20.6
184	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Major Highway Irvine	Irvine	20.1	20.1	20.1
185	n/o Chapman/Santiago Cyn.	n/o Chapman/Santiago Cyn.	Major Arterial	Orange	20.4	21.2	21.3
186	s/o Chapman Av.	s/o Chapman Av.	Major Arterial	Orange	14.1	15.2	15.3
187	s/o Canyon View Av.	s/o Canyon View Av.	Major Arterial	Orange	24.2	25.4	25.4
188	n/o Tustin Ranch Rd.	n/o Tustin Ranch Rd.	Major Arterial	Tustin	26.4	27.3	27.3
189	s/o Tustin Ranch Rd.	s/o Tustin Ranch Rd.	Major Arterial	Tustin	26.0	27.4	27.4
190	n/o Irvine BI.	n/o Irvine Bl.	Major Arterial	Tustin	26.9	27.5	27.6
191	s/o Irvine BI.	s/o Irvine BI.	Irvine	Irvine	37.5	37.5	37.5
192	s/o Bryan Av.	s/o Bryan Av.	Irvine	Irvine	39.2	39.2	39.2
193	b/w El Camino Real and I-5 NB Ramps	Ramps	Irvine	Irvine	61.5	61.5	61.5
194	n/o Michelle Dr.	n/o Michelle Dr.	Irvine	Irvine	59.5	60.4	60.4
195	s/o Michelle Dr.	s/o Michelle Dr.	Major Highway Irvine	Irvine	58.7	58.6	58.6
196	n/o Edinger Av.	n/o Edinger Av.	Irvine	Irvine	96.9	97.9	97.9
197	s/o Edinger Av.	s/o Edinger Av.	Irvine	Irvine	85.6	86.6	86.6
198	e/o SR-241 NB Ramps	e/o SR-241 NB Ramps	Primary Highway Irvine	Irvine	4.1	3.9	3.9
199	n/o Portola Pkwy.	n/o Portola Pkwy.	Primary Highway Irvine	Irvine	10.9	10.9	11.0
200	n/o Irvine Bl.	n/o Irvine Bl.	Major Highway Irvine	Irvine	33.7	34.1	34.0



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201	n/o Bryan Av.	n/o Bryan Av.	Major Highway Irvine	Irvine	35.2	36.0	35.9
202	n/o Trabuco Rd.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	46.5	47.0	47.0
203	s/o Trabuco Rd.	s/o Trabuco Rd.	Major Highway Irvine	Irvine	50.9	51.6	51.6
204	b/w Roosevelt and I-5 NB Ramps	b/w Roosevelt and I-5 NB Ramps	Major Highway Irvine	Irvine	68.5	69.7	69.7
205	s/o Walnut Av./I-5 SB Ramps	s/o Walnut Av./I-5 SB Ramps	Major Highway Irvine	Irvine	50.5	50.3	50.3
206	s/o Irvine Center Drive	s/o Irvine Center Drive	Major Highway Irvine	Irvine	49.5	49.6	49.5
207	n/o Alton Pkwy.	n/o Alton Pkwy.	Major Highway Irvine	Irvine	47.7	47.9	47.8
208	b/w Quailcreek and I-405 NB Ramps	Ramps	Major Highway Irvine	Irvine	57.5	57.8	57.9
209	e/o Alton Pkwy.	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	7.3	7.3	7.3
210	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	12.0	12.0	11.9
211	e/o Lake Forest Dr.	e/o Lake Forest Dr.	Primary Arterial	Lake Forest	17.0	16.9	16.9
212	e/o Ridge Route Dr.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	15.0	14.9	15.0
213	w/o Los Alisos Bl.	w/o Los Alisos Bl.	Primary Arterial	Lake Forest	28.0	27.8	27.8
214	e/o Los Alisos Bl.	e/o Los Alisos Bl.	Primary Arterial	Mission Viejo	23.8	23.6	23.6
215	s/o Alicia Pkwy.	s/o Alicia Pkwy.	Primary Arterial	Mission Viejo	25.6	25.4	25.4
216	b/w ICD and Discovery	b/w ICD and Discovery	Primary Highway Irvine	Irvine	6.8	6.8	6.8
217	b/w Waterworks Wy. and ICD	b/w Waterworks Wy. and ICD	Primary Highway Irvine	Irvine	6.8	6.9	6.9
218	n/o Alton Pkwy.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	6.1	6.1	6.1
219	s/o Alton Pkwy.	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	9.5	9.6	9.5
220	n/o Quail Hill Pkwy.	n/o Quail Hill Pkwy.	Primary Highway Irvine	Irvine	7.6	7.7	7.6
221	s/o Quail Hill Pkwy.	s/o Quail Hill Pkwy.	Primary Highway Irvine	Irvine	12.0	12.1	12.0
222	n/o SR-73 NB Ramps	n/o SR-73 NB Ramps	Primary Highway Irvine	Irvine	34.3	34.4	34.4
223	s/o Paseo de Valencia	s/o Paseo de Valencia	Primary Arterial	Laguna Hills	24.1	24.1	24.2
224	w/o Moulton Pkwy.	w/o Moulton Pkwy.	Major Arterial	Aliso Viejo	30.7	30.6	30.7
225	n/o Alton Pkwy.	n/o Alton Pkwy.	Local Collector Irvine	Irvine	5.8	5.8	5.8
226	s/o Portola Pkwy.	s/o Portola Pkwy.	Primary Arterial	Lake Forest	18.0	18.0	18.0
227	s/o SR-241 SB Ramps	s/o SR-241 SB Ramps	Primary Arterial	Lake Forest	28.0	27.6	27.5
228	s/o Rancho Pkwy.	s/o Rancho Pkwy.	Primary Arterial	Lake Forest	36.0	36.4	36.4
229	n/o Trabuco Rd.	n/o Trabuco Rd.	Primary Arterial	Lake Forest	35.8	36.1	36.1
230	s/o Trabuco Rd.	s/o Trabuco Rd.	Major Arterial	Lake Forest	41.0	41.1	41.0
231	n/o Jeronimo Rd.	n/o Jeronimo Rd.	Major Arterial	Lake Forest	39.0	39.6	39.5
232	s/o Jeronimo Rd.	s/o Jeronimo Rd.	Major Arterial	Lake Forest	40.0	40.4	40.4
233	n/o Muirlands Bl.	n/o Muirlands Bl.	Major Arterial	Lake Forest	31.0	31.3	31.3
234	n/o Rockfield Bl.	n/o Rockfield Bl.	Major Arterial	Lake Forest	47.0	47.4	47.4
235	b/w Rockfield Bl. and I-5 NB Ramps	Ramps	Major Arterial	Lake Forest	76.0	76.5	76.5
236	s/o Avenida Carlota/I-5 SB Ramps	Ramps	Major Highway Irvine	Irvine	22.7	22.9	22.9
237	s/o ICD	s/o ICD	Major Highway Irvine	Irvine	12.5	12.7	12.7
238	b/w Scientific Way and Tesla	b/w Scientific Way and Tesla	Major Highway Irvine	Irvine	21.6	21.9	21.8
239	e/o Bake Pkwy.	e/o Bake Pkwy.	Major Highway Irvine	Irvine	23.5	23.8	23.7
240	w/o Bake Pkwy.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	22.3	22.5	22.4



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241	n/o Trabuco Rd.	n/o Trabuco Rd.	Primary Arterial	Mission Viejo	22.6	22.6	22.6
242	s/o Trabuco Rd.	s/o Trabuco Rd.	Major Arterial	Mission Viejo	28.1	28.1	28.1
243	e/o Muirlands Bl.	e/o Muirlands Bl.	Major Arterial	Lake Forest	41.0	41.2	41.2
244	w/o Muirlands Bl.	w/o Muirlands Bl.	Primary Arterial	Lake Forest	36.0	36.3	36.2
245	s/o Rockfield Bl./Fordview St.	s/o Rockfield Bl./Fordview St.	Major Arterial	Lake Forest	31.0	31.0	31.0
246	b/w Avenida Carlota and Paseo de Valen	de Valencia	Major Arterial	Laguna Hills	25.1	25.1	25.1
247	w/o O St.	w/o O St.	Primary Highway Irvine	Irvine	21.0	24.2	24.2
248	e/o O St.	e/o O St.	Primary Highway Irvine	Irvine	23.8	26.8	26.8
249	w/o D St.	w/o D St.	Primary Highway Irvine	Irvine	23.1	26.2	26.2
250	e/o D St.	e/o D St.	Primary Highway Irvine	Irvine	20.2	23.6	23.6
251	w/o Great Park Blvd East	w/o Great Park Blvd East	Primary Highway Irvine	Irvine	20.5	23.9	23.9
252	w/o B St	w/o B St	Primary Highway Irvine	Irvine	20.4	27.1	27.1
253	e/o B St	e/o B St	Primary Highway Irvine	Irvine	19.5	20.4	20.4
254	n/o Barranca Pkwy.	n/o Barranca Pkwy.	Primary Highway Irvine	Irvine	22.3	21.4	21.5
255	s/o Barranca Pkwy.	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	14.4	13.7	13.7
256	n/o Rockfield Bl.	n/o Rockfield Bl.	Primary Highway Irvine	Irvine	26.5	23.2	23.2
257	s/o Rockfield Bl.	s/o Rockfield Bl.	Primary Highway Irvine	Irvine	20.8	23.9	23.9
258	n/o Alton Pkwy.	n/o Alton Pkwy.	Primary Highway Irvine	Irvine	1.0	1.0	1.0
259	n/o Irvine BI.	n/o Irvine BI.	Local Collector Irvine	Irvine	13.9	14.0	14.0
260	e/o (s/o) Lake Forest	e/o (s/o) Lake Forest	Major Arterial	Laguna Hills	31.5	31.5	31.4
261	e/o (s/o) Ridge Route	e/o (s/o) Ridge Route	Major Arterial	Laguna Hills	38.9	38.8	38.8
262	w/o (n/o) El Toro Rd.	w/o (n/o) El Toro Rd.	Major Arterial	Laguan Woods	44.1	43.9	43.9
263	e/o (s/o) El Toro Rd.	e/o (s/o) El Toro Rd.	Major Arterial	Laguan Woods	44.8	44.8	44.8
264	b/w Glenwood/Indian Creek and Laguna	Laguna Hills Dr.	Major Arterial	Aliso Viejo	41.3	41.4	41.4
265	s/o Laguna Hills Dr.	s/o Laguna Hills Dr.	Major Arterial	Aliso Viejo	30.2	30.3	30.3
266	s/o Alicia Pkwy.	s/o Alicia Pkwy.	Major Arterial	Laguna Hills	26.2	26.1	26.1
267	w/o Bake Pkwy.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	16.6	16.6	16.6
268	e/o Bake Pkwy.	e/o Bake Pkwy.	Primary Arterial	Lake Forest	20.0	19.7	19.7
269	w/o Ridge Route Dr.	w/o Ridge Route Dr.	Primary Arterial	Lake Forest	27.0	26.8	26.7
270	e/o Ridge Route Dr.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	27.0	26.8	26.8
271	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Lake Forest	29.0	28.8	28.8
272	s/o Los Alisos Bl.	s/o Los Alisos Bl.	Primary Arterial	Mission Viejo	24.4	24.2	24.2
273	e/o Alicia Pkwy.	e/o Alicia Pkwy.	Primary Arterial	Mission Viejo	19.9	19.9	19.9
274	w/o Sand Canyon. Av.	w/o Sand Canyon. Av.	Local Collector Irvine	Irvine	6.4	6.4	6.4
275	n/o Portola Pkwy.	n/o Portola Pkwy.	Local Collector Irvine	Irvine	6.9	6.9	6.9
276	w/o Fortune Dr.	w/o Fortune Dr.	Primary Highway Irvine	Irvine	10.8	10.7	10.6
277	w/o (n/o) Alton Pkwy.	w/o (n/o) Alton Pkwy.	Primary Highway Irvine	Irvine	7.4	7.2	7.2
278	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Laguna Hills	36.4	36.3	36.3
279	w/o Los Alisos Bl.	w/o Los Alisos Bl.	Major Arterial	Laguna Hills	31.0	30.9	30.9
280	e/o Los Alisos BI.	e/o Los Alisos Bl.	Major Arterial	Laguna Hills	47.0	46.9	46.9



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281	w/o Alicia Pkwy.	w/o Alicia Pkwy.	Major Arterial	Laguna Hills	36.1	36.4	36.4
282	e/o Alicia Pkwy.	e/o Alicia Pkwy.	Primary Arterial	Laguna Hills	14.0	14.0	14.0
283	w/o Jamboree Rd.	w/o Jamboree Rd.	Primary Arterial	Tustin	15.5	15.8	15.8
284	w/o SR-261 SB Ramps	w/o SR-261 SB Ramps	Major Highway Irvine	Irvine	25.8	26.4	26.5
285	e/o SR-261 NB Ramps	e/o SR-261 NB Ramps	Major Highway Irvine	Irvine	21.4	21.9	21.9
286	e/o Culver Dr.	e/o Culver Dr.	Major Highway Irvine	Irvine	22.8	23.2	23.3
287	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Major Highway Irvine	Irvine	26.0	26.0	26.0
288	w/o Sand Canyon. Av.	w/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	27.6	27.7	27.7
289	e/o Sand Canyon. Av.	e/o Sand Canyon. Av.	Primary Highway Irvine	Irvine	23.1	23.3	23.2
290	w/o Ridge Valley	w/o Ridge Valley	Primary Highway Irvine	Irvine	24.4	24.6	24.5
291	e/o Ridge Valley	e/o Ridge Valley	Primary Highway Irvine	Irvine	25.4	25.4	25.4
292	b/w Silverado and Portola Springs	b/w Silverado and Portola Springs	Primary Highway Irvine	Irvine	27.2	27.2	27.1
293	e/o Portola Springs	e/o Portola Springs	Primary Highway Irvine	Irvine	22.9	23.5	23.5
294	w/o Alton Pkwy.	w/o Alton Pkwy.	Primary Arterial	Lake Forest	5.0	4.6	4.6
295	e/o Alton Pkwy.	e/o Alton Pkwy.	Major Arterial	Lake Forest	22.0	22.0	21.9
296	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Major Arterial	Lake Forest	32.0	31.7	31.7
297	w/o Glenn Ranch Rd.	w/o Glenn Ranch Rd.	Major Arterial	Lake Forest	50.0	49.6	49.5
298	e/o Glenn Ranch Rd.	e/o Glenn Ranch Rd.	Major Arterial	Lake Forest	35.0	34.5	34.6
299	s/o SR-241 SB Ramps	s/o SR-241 SB Ramps	Major Arterial	Lake Forest	35.0	34.8	34.7
300	s/o Rancho Pkwy.	s/o Rancho Pkwy.	Major Arterial	Lake Forest	60.0	59.8	59.7
301	e/o El Toro Rd.	e/o El Toro Rd.	Major Arterial	Mission Viejo	50.3	50.0	50.0
302	s/o Portola Pkwy.	s/o Portola Pkwy.	Primary Highway Irvine	Irvine	6.6	6.4	6.4
303	e/o Shady Canyon Dr.	e/o Shady Canyon Dr.	Primary Highway Irvine	Irvine	19.5	19.6	19.6
304	w/o Bake Pkwy.	w/o Bake Pkwy.	Primary Arterial	Lake Forest	10.0	10.2	10.2
305	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	30.0	29.6	29.6
306	e/o Lake Forest Dr.	e/o Lake Forest Dr.	Primary Arterial	Lake Forest	20.0	20.0	20.0
307	e/o ICD	e/o ICD	Primary Highway Irvine	Irvine	9.0	8.9	8.9
308	w/o (n/o) Bake Pkwy.	w/o (n/o) Bake Pkwy.	Primary Highway Irvine	Irvine	11.9	11.8	11.8
309	n/o Lake Forest Dr.	n/o Lake Forest Dr.	Primary Highway Irvine	Irvine	12.2	12.1	12.1
310	s/o Trabuco Rd.	s/o Trabuco Rd.	Primary Arterial	Lake Forest	9.0	9.0	9.0
311	n/o Jeronimo Rd.	n/o Jeronimo Rd.	Primary Arterial	Lake Forest	7.0	7.1	7.1
312	s/o Jeronimo Rd.	s/o Jeronimo Rd.	Primary Arterial	Lake Forest	10.0	10.1	10.1
313	s/o Muirlands Bl.	s/o Muirlands Bl.	Primary Arterial	Lake Forest	8.0	8.1	8.0
314	s/o Rockfield B.	s/o Rockfield B.	Primary Arterial	Lake Forest	18.1	18.0	18.0
315	s/o (w/o) Avenida Carlota	s/o (w/o) Avenida Carlota	Primary Arterial	Laguna Hills	14.9	14.9	14.9
316	s/o (w/o) Moulton Pkwy.	s/o (w/o) Moulton Pkwy.	Primary Arterial	Laguna Hills	11.0	11.0	11.1
317	e/o Bake Pkwy.	e/o Bake Pkwy.	Primary Arterial	Laguna Hills	9.4	9.5	9.5
318	s/o Portola Pkwy.	s/o Portola Pkwy.	Primary Highway Irvine	Irvine	10.0	9.8	9.8
319	e/o Marine Wy	e/o Marine Wy	Primary Highway Irvine	Irvine	6.4	n/a	n/a
320	e/o Sterling	e/o Sterling	Primary Highway Irvine	Irvine	5.4	n/a	n/a



					2011	2012	2012
					Approved	Modified	Modified
					Project	Project	Project
ID	Roadway	Segment	Classification	Jurisdiction	(Baseline)	(Option 1)	(Option 2)
321	w/o Bake Pkwy.	w/o Bake Pkwy.	Primary Highway Irvine	Irvine	10.6	7.6	7.6
322	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Primary Highway Irvine	Irvine	15.7	15.6	15.6
323	w/o Ridge Route Dr.	w/o Ridge Route Dr.	Primary Arterial	Lake Forest	24.0	24.0	23.9
324	e/o Ridge Route Dr.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	24.0	24.1	24.0
325	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Lake Forest	20.0	20.0	20.0
326	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	10.3	10.2	10.3
327	e/o Jeffrey Rd.	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	20.4	20.8	20.8
328	w/o Sand Canyon Av.	w/o Sand Canyon Av.	Primary Highway Irvine	Irvine	8.6	8.6	8.6
329	n/o Irvine BI.	n/o Irvine BI.	Primary Highway Irvine	Irvine	27.1	26.7	26.8
330	s/o Irvine BI.	s/o Irvine BI.	Major Highway Irvine	Irvine	32.2	31.8	31.9
331	n/o Trabuco Rd.	n/o Trabuco Rd.	Major Highway Irvine	Irvine	28.1	27.9	28.0
332	s/o Trabuco Rd.	s/o Trabuco Rd.	Irvine	Irvine	50.4	50.2	50.2
333	s/o Roosevelt	s/o Roosevelt	Irvine	Irvine	53.3	53.0	53.0
334	n/o I-5 NB Ramps	n/o I-5 NB Ramps	Irvine	Irvine	62.6	62.0	62.0
335	b/w I-5 SB Ramps and Burt Rd.	b/w I-5 SB Ramps and Burt Rd.	Major Highway Irvine	Irvine	52.5	52.9	52.9
336	b/w Burt Rd. and Oak Cyn./Laguna Cyn.	Cyn./Laguna Cyn. Rd.	Major Highway Irvine	Irvine	53.5	53.8	53.8
337	n/o ICD	n/o ICD	Major Highway Irvine	Irvine	42.8	43.2	43.2
338	s/o Waterworks Wy.	s/o Waterworks Wy.	Major Highway Irvine	Irvine	38.8	38.9	38.9
339	s/o Barranca Pkwy.	s/o Barranca Pkwy.	Major Highway Irvine	Irvine	39.1	39.3	39.3
340	b/w Alton Pkwy.and I-405 NB Ramps	Ramps	Major Highway Irvine	Irvine	41.3	41.5	41.5
341	s/o Moulton Pkwy.	s/o Moulton Pkwy.	Primary Arterial	Laguan Woods	8.9	8.9	8.9
342	e/o Laguna Canyon Rd.	e/o Laguna Canyon Rd.	Secondary	Laguan Woods	6.0	6.0	6.0
343	e/o SR-241 NB Ramp	e/o SR-241 NB Ramp	Primary Arterial	Orange	23.2	23.6	23.6
344	s/o ICD	s/o ICD	Primary Highway Irvine	Irvine	1.7	1.7	1.7
345	w/o Fortune Dr.	w/o Fortune Dr.	Local Collector Irvine	Irvine	2.9	2.9	3.0
346	b/w Rockfield BI and Barrana Pkwy	Pkwy	Local Collector Irvine	Irvine	3.8	n/a	n/a
347	e/o Barranca Pkwy.	e/o Barranca Pkwy.	Primary Highway Irvine	Irvine	20.7	20.8	20.8
348	w/o Barranca Pkwy.	w/o Barranca Pkwy.	Primary Highway Irvine	Irvine	15.8	16.0	16.1
349	e/o Laguna Canyon Rd.	e/o Laguna Canyon Rd.	Secondary Arterial Irvine	Irvine	17.2	17.1	17.1
350	e/o Alton Pkwy.	e/o Alton Pkwy.	Primary Highway Irvine	Irvine	4.7	6.3	6.3
351	w/o Lake Forest Dr.	w/o Lake Forest Dr.	Primary Arterial	Lake Forest	6.0	6.2	6.2
352	w/o Ridge Route Dr.	w/o Ridge Route Dr.	Secondary	Lake Forest	7.0	7.0	6.9
353	e/o Ridge Route Dr.	e/o Ridge Route Dr.	Primary Arterial	Lake Forest	8.0	8.0	8.0
354	b/w Culver Dr. and I-5 NB Ramps	b/w Culver Dr. and I-5 NB Ramps	Primary Highway Irvine	Irvine	38.4	38.5	38.7
355	e/o I-5 NB Ramps	e/o I-5 NB Ramps	Primary Highway Irvine	Irvine	21.4	21.8	21.8
356	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	18.9	19.3	19.3
357	e/o Jeffrey Rd.	e/o Jeffrey Rd.	Primary Highway Irvine	Irvine	19.2	19.4	19.5
358	e/o Sand Canyon	e/o Sand Canyon	Primary Highway Irvine	Irvine	25.7	25.4	25.5
359	e/o Bake Pkwy.	e/o Bake Pkwy.	Major Arterial	Lake Forest	28.0	27.9	27.9
360	b/w Lake Forest Dr.and Ridge Route Dr.	Route Dr.	Major Arterial	Lake Forest	36.0	35.7	35.7



## Post-2030 Off-Site Average Daily Traffic Volumes (1,000s)<sup>1</sup>

					2011	2012	2012
					Approved	Modified	Modified
					Project	Project	Project
ID	Roadway	Segment	Classification	Jurisdiction	(Baseline)	(Option 1)	(Option 2)
361	w/o El Toro Rd.	w/o El Toro Rd.	Major Arterial	Lake Forest	40.0	39.9	39.9
362	e/o El Toro Rd.	e/o El Toro Rd.	Primary Arterial	Lake Forest	23.7	23.6	23.6
363	n/o Alicia Pkwy.	n/o Alicia Pkwy.	Primary Arterial	Mission Viejo	26.5	26.4	26.4
364	s/o Alicia Pkwy.	s/o Alicia Pkwy.	Primary Arterial	Mission Viejo	13.8	13.7	13.7
365	w/o Jamboree	w/o Jamboree	Major Arterial	Tustin	12.0	11.7	11.7
366	s/o Portola Pkwy.	s/o Portola Pkwy.	Major Arterial	Tustin	31.4	31.4	31.4
367	n/o La Colina Dr.	n/o La Colina Dr.	Major Arterial	Tustin	31.4	31.3	31.3
368	s/o Irvine BI.	s/o Irvine BI.	Major Arterial	Tustin	28.2	27.9	27.9
369	b/w I-405 SB Ramps and Michelson Dr.	Michelson Dr.	Major Highway Irvine	Irvine	59.7	60.0	60.1
370	w/o Jamboree	w/o Jamboree	Major Highway Irvine	Irvine	22.0	22.3	22.2
371	e/o Jamboree	e/o Jamboree	Major Highway Irvine	Irvine	23.4	23.5	23.5
372	w/o Culver Dr.	w/o Culver Dr.	Primary Highway Irvine	Irvine	25.9	26.2	26.2
373	e/o Culver Dr.	e/o Culver Dr.	Primary Highway Irvine	Irvine	25.6	25.9	25.9
374	e/o Yale Av.	e/o Yale Av.	Primary Highway Irvine	Irvine	13.0	13.0	13.0
375	w/o Jeffrey Rd.	w/o Jeffrey Rd.	Primary Highway Irvine	Irvine	19.6	19.5	19.5
376	w/o Paseo Westpark	w/o Paseo Westpark	Primary Highway Irvine	Irvine	10.8	10.9	10.9
377	w/o Culver Dr.	w/o Culver Dr.	Primary Highway Irvine	Irvine	10.4	10.4	10.4
378	b/w Culver Dr.and W. Yale Loop	b/w Culver Dr.and W. Yale Loop	Primary Highway Irvine	Irvine	11.1	11.2	11.2
379	s/o Barranca Pkwy.	s/o Barranca Pkwy.	Primary Highway Irvine	Irvine	6.4	6.5	6.5
380	s/o Alton Pkwy.	s/o Alton Pkwy.	Primary Highway Irvine	Irvine	12.3	12.3	12.3
381	b/w Portola and Arborwood	b/w Portola and Arborwood	Local Collector Irvine	Irvine	6.1	6.0	6.0
382	b/w Park PI. and Irvine BI.	b/w Park Pl. and Irvine Bl.	Primary Highway Irvine	Irvine	11.8	11.7	11.7
383	n/o Bryan Av.	n/o Bryan Av.	Primary Highway Irvine	Irvine	8.5	8.6	8.6
384	n/o Trabuco Rd.	n/o Trabuco Rd.	Primary Highway Irvine	Irvine	9.9	10.0	10.0
385	n/o Walnut Av.	n/o Walnut Av.	Secondary Arterial Irvine	Irvine	13.2	13.4	13.4
386	s/o Walnut Av.	s/o Walnut Av.	Primary Highway Irvine	Irvine	11.9	12.1	12.1
387	b/w Deerfield Dr. and ICD	b/w Deerfield Dr. and ICD	Primary Highway Irvine	Irvine	12.8	12.9	12.9
388	b/w ICD and Yale Lp.	b/w ICD and Yale Lp.	Primary Highway Irvine	Irvine	11.0	11.2	11.2
389	n/o Muirlands Bl.	n/o Muirlands Bl.	Collector	Irvine	1.5	1.6	1.5
390	s/o Muirlands Bl.	s/o Muirlands Bl.	Collector	Irvine	7.0	8.0	8.0
391	e/o Fairbanks	e/o Fairbanks	Major Highway Irvine	Irvine	44.1	43.7	43.7
392	e/o Alton Pkwy.	e/o Alton Pkwy.	Collector	Irvine	7.0	8.1	8.1
393	w/o Alton Pkwy.	w/o Alton Pkwy.	Secondary	Irvine	2.4	5.8	5.8
394	s/o Astor St.	s/o Astor St.	Collector	Irvine	0.9	4.1	4.1
395	w/o Irvine Bl.	w/o Irvine Bl.	Collector	Irvine	8.3	21.8	21.8

<sup>1</sup> Source: Heritage Fields Project 2012 - General Plan Amendment / Zone Change Traffic Impact Analysis by Urban Crossroads, Inc. in May 2012.



# 7.0 OFF-SITE TRAFFIC NOISE ANALYSIS

The traffic associated with future operations of the 2012 Modified Project's various land uses could potentially cause off-site noise impacts to surrounding off-site noise-sensitive uses. The surrounding off-site land uses consist of a mixture of commercial, agricultural, residential, and open space. To assess the off-site traffic-related noise level impacts associated with the 2012 Modified Project, the CNEL levels at a distance of 100 feet from the traffic study area roadway segments were developed from the Post-2030 With 2012 Modified Project scenarios described in the Heritage Fields Project 2012 General Plan Amendment / Zone Change Traffic Impact Analysis.

# 7.1 Off-Site Traffic Noise Contours

To quantify the 2012 Modified Project's traffic noise impacts on the surrounding off-site areas, the changes in traffic noise levels on 395 roadway segments surrounding the Proposed Project Site caused by the 2012 Modified Project were determined based on the changes in the average daily traffic volumes. The off-site noise contours were used to assess the 2012 Modified Project's incremental off-site traffic-related noise impacts at land uses adjacent to roadways conveying project traffic. Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway for the 75, 70, and 65 dBA noise levels. The distance from the centerline of the roadway to the CNEL contours for roadways in the vicinity of the Proposed Project Site for the 2011 Approved Project conditions are included in Appendix 7.1.

The off-site traffic noise contours do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, since the traffic noise contours are controlled by the City of Irvine Transportation Related Noise Standards, they do not include the noise contribution from the surrounding commercial and industrial activities within the Proposed Project study area.

Project-related stationary source noise impacts would include activities associated with commercial and retail uses such as, the loading and unloading of the trucks at the loading docks and storage areas, trash compactors and rooftop air-conditioning systems. In addition to the stationary source noise impacts generated by the commercial and retail land



uses, stationary source noise will also exist within the residential land uses. The stationary source activities, related to residential land uses, generally includes air conditioners, yard care equipment, trash trucks, delivery vehicles, street sweepers, and neighborhood outdoor recreation activities.

## 7. 2 Off-Site 2012 Modified Project Traffic Noise Level Contributions

Based on the significance criteria present in Section 5.0 of this report, a significant off-site traffic noise impact would occur if the 2012 Modified Project were to create a noise level increase in the area adjacent to the roadway segment greater than 1.5 dBA within residential areas and the resulting noise level exceeds the 65 dBA CNEL exterior noise standard. Any residence, hospital, school, hotel, resort, library or similar facility where quiet is an important attribute of the environment is considered a noise sensitive land use.

Table 7-1 provides a summary of the off-site traffic noise level impacts for the 2012 Modified Project Option 1. Table 7-2 present the off-site traffic noise level impacts for the 2012 Modified Project Option 2. Tables 7-1 and 7-2 suggest that the 2012 Modified Project will increase the off-site traffic noise levels up to 1.3 dBA CNEL on 392 of the 395 off-site roadway segments when compared to the 2011 Approved Project. Three of the 395 study area roadway segments are expected to experience a project related noise increase ranging from 3.8 to 6.6 dBA CNEL.

The 2012 Modified Project Off-Site Transportation Noise Model calculations are included in Appendix 7.2. Based on the traffic noise screening analysis threshold of 1.5 dBA for all project-related traffic noise level increases where the resulting noise levels would be in excess of 65 dBA, as described in Section 5.0, no significant off-site traffic noise impacts would be created by the 2012 Modified Project.

It is important to note that while three of the 395 off-site study area roadway segments located on Fairbanks near the entrance to the Proposed Project at Astor are expected to experience a project related noise level increase of greater than 1.5 dBA CNEL, the overall noise levels will not exceed the 65 dBA significance threshold. In addition, the



#### Table 7-1

## Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
1	Ada	s/o Barranca Pkwy.	57.8	58.9	1.1	NO
2	Alicia Pkwy.	n/o Trabuco Rd.	70.7	70.7	0.0	NO
3	Alicia Pkwy.	s/o Trabuco Rd.	71.2	71.2	0.0	NO
4	Alicia Pkwy.	s/o Jeronimo Rd.	72.6	72.6	0.0	NO
5	Alicia Pkwy.	n/o Muirlands Bl.	72.6	72.6	0.0	NO
6	Alicia Pkwy.	b/w I-5 NB Ramps and Muirlands Bl.	73.0	73.0	0.0	NO
7	Alicia Pkwy.	s/o I-5 SB Ramps	72.1	72.1	0.0	NO
8	Alicia Pkwy.	s/o Paseo de Valencia	71.5	71.5	0.0	NO
9	Alicia Pkwy.	s/o Moulton Pkwy.	71.3	71.3	0.0	NO
10	Aliso Creek Rd.	e/o El Toro Rd.	66.2	66.2	0.0	NO
11	Alton Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
12	Alton Pkwy.	e/o Culver Dr.	69.0	69.0	0.0	NO
13	Alton Pkwy.	e/o W. Yale Loop	68.8	68.9	0.1	NO
14	Alton Pkwy.	e/o Lake Rd.	68.6	68.6	0.0	NO
15	Alton Pkwy.	e/o Creek Rd.	68.4	68.4	0.0	NO
16	Alton Pkwy.	w/o Jeffrey Rd.	69.2	69.2	0.0	NO
17	Alton Pkwy.	b/w Jeffrey Rd. and Royal Oak	68.1	68.1	0.0	NO
18	Alton Pkwy.	b/w Royal Oak and Valley Oak	67.6	67.6	0.0	NO
19	Alton Pkwy.	w/o Sand Canyon Av.	68.8	68.9	0.1	NO
20	Alton Pkwy.	e/o Sand Canyon. Av.	70.7	70.7	0.0	NO
21	Alton Pkwy.	e/o Laguna Canyon Rd.	67.2	67.2	0.0	NO
22	Alton Pkwy.	b/w Pacifica and Banting	67.4	67.5	0.1	NO
23	Alton Pkwy.	w/o Meridian	66.9	66.9	0.0	NO
24	Alton Pkwy.	b/w Meridian and ICD	68.2	68.2	0.0	NO
25	Alton Pkwy.	b/w Enterprise and Gateway Bl.	71.3	71.4	0.1	NO
26	Alton Pkwy.	b/w Enterprise and I-5 NB Ramps	72.8	72.8	0.0	NO
27	Alton Pkwy.	b/w I-5 NB Ramps and Technology Dr. W	72.9	72.9	0.0	NO
28	Alton Pkwy.	b/w Techonology Dr. W and Ada	71.6	71.7	0.1	NO
29	Alton Pkwy.	e/o Ada	71.1	71.1	0.0	NO
30	Alton Pkwy.	w/o Marine Wy.	71.3	71.3	0.0	NO
31	Alton Pkwy.	e/o Technology	71.3	71.3	0.0	NO
32	Alton Pkwy.	s/o Barranca Pkwy./Muirlands Bl.	71.2	71.3	0.1	NO
33	Alton Pkwy.	n/o Barranca Pkwy./Muirlands Bl.	71.9	71.8	-0.1	NO
34	Alton Pkwy.	s/o Jeronimo Rd.	71.9	71.8	-0.1	NO
35	Alton Pkwy.	n/o Jeronimo Rd.	71.5	71.4	-0.1	NO
36	Alton Pkwy.	s/o Toledo Wy.	70.6	70.5	-0.1	NO
37	Alton Pkwy.	n/o Toledo Wy.	70.6	70.4	-0.2	NO
38	Alton Pkwy.	s/o Irvine BI. / Trabuco Rd.	70.8	70.9	0.1	NO
39	Alton Pkwy.	n/o Irvine BI.	71.6	71.7	0.1	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
40	Alton Pkwy.	n/o Commercentre	72.1	72.1	0.0	NO
41	Alton Pkwy.	s/o SR-241 Ramps	68.4	68.4	0.0	NO
42	Alton Pkwy.	n/o SR-241 Ramps	69.3	69.3	0.0	NO
43	Avenida Carlota	w/o Ridge Route Dr.	63.6	63.6	0.0	NO
44	Avenida Carlota	w/o Paseo de Valencia	65.9	65.9	0.0	NO
45	Avenida Carlota	b/w Paseo de Valencia and El Toro Rd.	69.1	69.1	0.0	NO
46	Avenida Carlota	e/o El Toro Rd.	67.2	67.2	0.0	NO
47	Bake Pkwy.	s/o Portola Pkwy.	66.5	66.5	0.0	NO
48	Bake Pkwy.	n/o Commercentre Dr.	68.7	68.7	0.0	NO
49	Bake Pkwy.	n/o Irvine Bl.	69.3	69.3	0.0	NO
50	Bake Pkwy.	s/o Irvine BI.	72.5	72.5	0.0	NO
51	Bake Pkwy.	b/w Toledo Wy. and Jeronimo Rd.	73.1	73.1	0.0	NO
52	Bake Pkwy.	n/o Muirlands Bl.	73.6	73.6	0.0	NO
53	Bake Pkwy.	s/o Muirlands Bl.	78.7	78.7	0.0	NO
54	Bake Pkwy.	s/o Rockfield Bl.	74.5	74.6	0.1	NO
55	Bake Pkwy.	n/o I-5 NB Ramps	74.8	74.8	0.0	NO
56	Bake Pkwy.	b/w I-5 SB Ramps and Research Dr.	71.1	71.2	0.1	NO
57	Bake Pkwy.	b/w Research Dr. and ICD	68.0	68.1	0.1	NO
58	Bake Pkwy.	s/ICD	67.7	67.7	0.0	NO
59	Bake Pkwy.	b/w Lake Forest Dr. and Ridge Route Dr.	60.9	60.9	0.0	NO
60	Bake Pkwy.	b/w Ridge Route Dr. and Laguna Canyon	65.9	66.0	0.1	NO
61	Barranca Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
62	Barranca Pkwy.	e/o Culver Dr.	69.4	69.4	0.0	NO
63	Barranca Pkwy.	e/o W. Yale Lp.	69.0	69.0	0.0	NO
64	Barranca Pkwy.	e/o Lake Rd.	68.5	68.5	0.0	NO
65	Barranca Pkwy.	b/w Creek Rd. and Lyon	68.3	68.3	0.0	NO
66	Barranca Pkwy.	w/o E. Yale Lp.	68.3	68.3	0.0	NO
67	Barranca Pkwy.	w/o Jeffrey Rd.	68.8	68.8	0.0	NO
68	Barranca Pkwy.	e/o Jeffrey Rd.	66.9	66.9	0.0	NO
69	Barranca Pkwy.	w/o Sand Canyon. Av.	66.9	67.0	0.1	NO
70	Barranca Pkwy.	e/o Sand Canyon. Av.	66.3	66.3	0.0	NO
71	Barranca Pkwy.	e/o Laguna Canyon Rd.	66.1	66.1	0.0	NO
72	Barranca Pkwy.	b/w Discovery and Banting	65.6	65.6	0.0	NO
73	Barranca Pkwy.	s/o ICD	66.9	67.0	0.1	NO
74	Barranca Pkwy.	b/w I-5 HOV Ramp and ICD	67.5	67.6	0.1	NO
75	Barranca Pkwy.	s/o Technology	67.8	67.9	0.1	NO
76	Barranca Pkwy.	n/o Technology	68.0	68.2	0.2	NO
77	Barranca Pkwy.	e/o Ada	67.5	67.8	0.3	NO
78	Barranca Pkwy.	w/o Marine Wy.	68.3	68.5	0.2	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
79	Barranca Pkwy.	w/o Alton Pkwy.	67.8	67.5	-0.3	NO
80	Barranca Pkwy	e/o Alton Pkwy.	67.2	67.5	0.3	NO
81	Barranca Pkwy	e/o Sterling	66.3	66.4	0.1	NO
82	Bryan Av.	w/o Jamboree Rd.	67.6	67.6	0.0	NO
83	Bryan Av.	e/o Jamboree Rd.	67.3	67.4	0.1	NO
84	Bryan Av.	w/o Culver Dr.	68.6	68.6	0.0	NO
85	Bryan Av.	e/o Culver Dr.	67.2	67.3	0.1	NO
86	Bryan Av.	e/o Eastwood	65.8	65.9	0.1	NO
87	Canyon View Av.	w/o Jamboree Rd.	62.2	62.1	-0.1	NO
88	Chapman Ave.	w/o Jamboree Rd.	69.1	69.4	0.3	NO
89	Chapman Ave.	e/o Jamboree Rd.	71.1	71.0	-0.1	NO
90	Creek Rd.	n/o Alton Pkwy.	55.7	55.6	-0.1	NO
91	Culver Dr.	s/o Portola Pkwy.	69.7	69.7	0.0	NO
92	Culver Dr.	n/o Irvine BI.	70.1	70.2	0.1	NO
93	Culver Dr.	s/o Irvine BI.	71.2	71.3	0.1	NO
94	Culver Dr.	n/o Bryan Av.	70.7	70.7	0.0	NO
95	Culver Dr.	s/o Bryan Av.	72.7	72.7	0.0	NO
96	Culver Dr.	n/o Trabuco Rd.	72.8	72.8	0.0	NO
97	Culver Dr.	s/o I-5 SB Ramps	73.2	73.2	0.0	NO
98	Culver Dr.	n/o Walnut Av.	72.7	72.8	0.1	NO
99	Culver Dr.	b/w Walnut Av. and Deerfiled Dr.	72.4	72.4	0.0	NO
100	Culver Dr.	b/w Deerfield Dr. and ICD	71.9	72.0	0.1	NO
101	Culver Dr.	b/w ICD and Warner Av.	72.2	72.3	0.1	NO
102	Culver Dr.	b/w Warner Av. and Barranca Pkwy.	72.3	72.4	0.1	NO
103	Culver Dr.	n/o Alton Pkwy.	72.7	72.7	0.0	NO
104	Culver Dr.	b/w Alton Pkwy. and Main St.	72.8	72.8	0.0	NO
105	Culver Dr.	b/w Main St. and San Leandro	72.8	72.8	0.0	NO
106	Culver Dr.	b/w San Leandro and I-405 NB Ramps	73.3	73.3	0.0	NO
107	E. Yale Lp.	s/o Barranca Pkwy.	64.2	64.2	0.0	NO
108	E. Yale Lp.	n/o Alton Pkwy.	65.0	65.0	0.0	NO
109	E. Yale Lp.	s/o Alton Pkwy.	65.0	65.0	0.0	NO
110	El Camino Real	e/o Tustin Ranch Rd.	65.7	65.7	0.0	NO
111	El Camino Real	e/o Jamboree Rd.	68.2	68.3	0.1	NO
112	El Camino Real N.	s/o Bryan Ave.	63.3	63.3	0.0	NO
113	El Toro Rd.	n/o Portola Pkwy./S. Margarita Pkwy.	67.9	67.9	0.0	NO
114	El Toro Rd.	s/o Portola Pkwy./S. Margarita Pkwy.	71.2	71.2	0.0	NO
115	El Toro Rd.	n/o Trabuco Rd.	68.3	68.3	0.0	NO
116	El Toro Rd.	n/o Toledo Wy.	72.6	72.6	0.0	NO
117	El Toro Rd.	n/o Jeronimo Rd.	72.6	72.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
118	El Toro Rd.	s/o Jeronimo Rd.	72.8	72.8	0.0	NO
119	El Toro Rd.	n/o Rockfield Bl.	73.2	73.2	0.0	NO
120	El Toro Rd.	b/w Rockfield Bl.and I-5 NB Ramps	74.3	74.3	0.0	NO
121	El Toro Rd.	b/w I-5 SB Ramps and Avenida Carlota	71.4	71.4	0.0	NO
122	El Toro Rd.	n/o Paseo de Valencia	69.6	69.6	0.0	NO
123	El Toro Rd.	s/o Paseo de Valencia	70.0	70.0	0.0	NO
124	El Toro Rd.	s/o Moulton Pkwy.	70.0	69.9	-0.1	NO
125	El Toro Rd.	n/o Aliso Creek Rd.	69.1	69.1	0.0	NO
126	El Toro Rd.	n/o SR-73	69.6	69.6	0.0	NO
127	El Toro Rd.	s/o SR-73	66.0	66.0	0.0	NO
128	Fortune Dr.	b/w Gateway Bl. and Spectrum	63.8	63.8	0.0	NO
129	Fortune Dr.	b/w Pacifica and Spectrum	63.9	63.9	0.0	NO
130	Gateway Bl.	w/o Fortune Dr.	62.9	63.0	0.1	NO
131	Gateway BI.	n/o Alton Pkwy.	56.7	56.7	0.0	NO
132	Gateway BI.	w/o ICD	58.7	58.9	0.2	NO
133	Glenn Ranch Rd.	n/o Portola Pkwy.	68.2	68.1	-0.1	NO
134	Glenwood Dr.	w/o Moulton Pkwy.	64.2	64.2	0.0	NO
135	Handy Creek Rd.	e/o Jamboree Rd.	54.1	53.9	-0.2	NO
136	Harvard Av.	s/o Walnut Av.	60.0	59.9	-0.1	NO
137	Harvard Av.	n/o Edinger Av.	65.6	65.6	0.0	NO
138	Harvard Av.	b/w Edinger Av. And Paseo Westpark	66.2	66.2	0.0	NO
139	Hubble	n/o ICD	57.4	57.4	0.0	NO
140	Irvine Bl.	b/w Newport and Red Hill	72.2	72.3	0.1	NO
141	Irvine Bl.	b/w Red Hill and Browning	70.8	70.9	0.1	NO
142	Irvine Bl.	w/o Tustin Ranch Rd.	71.6	71.7	0.1	NO
143	Irvine Bl.	w/o Jamboree Rd.	71.1	71.1	0.0	NO
144	Irvine Bl.	e/o Jamboree Rd.	72.2	72.2	0.0	NO
145	Irvine Bl.	b/w SR-261 Ramps	72.0	72.1	0.1	NO
146	Irvine Bl.	e/o SR-261 NB Ramps	72.2	72.2	0.0	NO
147	Irvine Bl.	w/o Culver Dr.	71.5	71.5	0.0	NO
148	Irvine Bl.	e/o Culver Dr.	71.5	71.6	0.1	NO
149	Irvine Bl.	e/o Yale Av.	71.9	71.9	0.0	NO
150	Irvine Bl.	w/o Jeffrey Rd.	71.4	71.4	0.0	NO
151	Irvine Bl.	e/o Jeffrey Rd.	71.2	71.3	0.1	NO
152	Irvine Bl.	e/o Groveland	71.3	71.3	0.0	NO
153	Irvine Bl.	e/o Sand Canyon. Av.	71.5	71.6	0.1	NO
154	Irvine Bl.	e/o SR-133 NB Ramps	71.9	72.0	0.1	NO
155	Irvine Bl.	w/o O St.	71.3	71.4	0.1	NO
156	Irvine Bl.	e/o O St.	71.6	71.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
157	Irvine BI.	w/o A St.	71.6	71.7	0.1	NO
158	Irvine BI.	w/o Z St.	72.2	72.3	0.1	NO
159	Irvine Bl.	e/o Z St.	72.3	72.4	0.1	NO
160	Irvine BI.	w/o LQ St.	72.3	72.2	-0.1	NO
161	Irvine BI.	e/o LQ St.	72.8	72.6	-0.2	NO
162	Irvine BI.	w/o Alton Pkwy.	73.0	72.8	-0.2	NO
163	Irvine BI.	e/o Alton Pkwy.	72.1	71.9	-0.2	NO
164	ICD/Edinger Av.	w/o Jamboree	69.1	69.2	0.1	NO
165	ICD/Edinger Av.	e/o Jamboree	69.7	69.7	0.0	NO
166	ICD	e/o Hearthstone Bl.	69.7	69.8	0.1	NO
167	ICD	e/o Culver Dr.	69.9	69.9	0.0	NO
168	ICD	b/w Yale Av. And Fontaine Av.	70.2	70.2	0.0	NO
169	ICD	e/o Jeffrey Rd.	71.8	71.8	0.0	NO
170	ICD	w/o Sand Canyon. Av.	69.7	69.8	0.1	NO
171	ICD	e/o Sand Canyon Av.	68.5	68.5	0.0	NO
172	ICD	b/w Laguna Canyon Rd. and Discovery	68.1	68.2	0.1	NO
173	ICD	w/o Barranca Pkwy.	69.1	69.1	0.0	NO
174	ICD	b/w Barranca Pkwy. and Gateway Bl.	69.3	69.4	0.1	NO
175	ICD	b/w Gateway Bl.and Alton Pkwy.	68.8	68.8	0.0	NO
176	ICD	b/w Alton Pkwy.and Spectrum	71.0	71.1	0.1	NO
177	ICD	b/w Pacifica and Enterprise Dr.	71.1	71.1	0.0	NO
178	ICD	b/w Enterprise and I-405 SB Ramps	72.9	72.9	0.0	NO
179	ICD	b/w I-405 SB Ramps and Research Dr.	72.0	72.0	0.0	NO
180	ICD	b/w Research Dr. and Hubble	69.4	69.4	0.0	NO
181	ICD	b/w Hubble and Bake Pkwy.	69.1	69.1	0.0	NO
182	ICD	b/w Bake Pkwy. and Muller	68.9	68.9	0.0	NO
183	ICD	b/w Muller and Tesla	68.8	68.8	0.0	NO
184	ICD	w/o Lake Forest Dr.	68.7	68.7	0.0	NO
185	Jamboree Rd.	n/o Chapman/Santiago Cyn.	67.9	68.1	0.2	NO
186	Jamboree Rd.	s/o Chapman Av.	66.3	66.7	0.4	NO
187	Jamboree Rd.	s/o Canyon View Av.	68.7	68.9	0.2	NO
188	Jamboree Rd.	n/o Tustin Ranch Rd.	69.1	69.2	0.1	NO
189	Jamboree Rd.	s/o Tustin Ranch Rd.	69.0	69.2	0.2	NO
190	Jamboree Rd.	n/o Irvine Bl.	69.2	69.2	0.0	NO
191	Jamboree Rd.	s/o Irvine BI.	76.5	76.5	0.0	NO
192	Jamboree Rd.	s/o Bryan Av.	76.7	76.7	0.0	NO
193	Jamboree Rd.	b/w El Camino Real and I-5 NB Ramps	78.6	78.6	0.0	NO
194	Jamboree Rd.	n/o Michelle Dr.	78.5	78.5	0.0	NO
195	Jamboree Rd.	s/o Michelle Dr.	73.3	73.3	0.0	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	. at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
196	Jamboree Rd.	n/o Edinger Av.	80.6	80.6	0.0	NO
197	Jamboree Rd.	s/o Edinger Av.	80.1	80.1	0.0	NO
198	Jeffrey Rd.	e/o SR-241 NB Ramps	60.5	60.3	-0.2	NO
199	Jeffrey Rd.	n/o Portola Pkwy.	64.8	64.8	0.0	NO
200	Jeffrey Rd.	n/o Irvine BI.	70.9	71.0	0.1	NO
201	Jeffrey Rd.	n/o Bryan Av.	71.1	71.2	0.1	NO
202	Jeffrey Rd.	n/o Trabuco Rd.	72.3	72.3	0.0	NO
203	Jeffrey Rd.	s/o Trabuco Rd.	72.7	72.8	0.1	NO
204	Jeffrey Rd.	b/w Roosevelt and I-5 NB Ramps	74.0	74.1	0.1	NO
205	Jeffrey Rd.	s/o Walnut Av./I-5 SB Ramps	72.7	72.6	-0.1	NO
206	Jeffrey Rd.	s/o Irvine Center Drive	72.6	72.6	0.0	NO
207	Jeffrey Rd.	n/o Alton Pkwy.	72.4	72.4	0.0	NO
208	Jeffrey Rd.	b/w Quailcreek and I-405 NB Ramps	73.2	73.2	0.0	NO
209	Jeronimo Rd.	e/o Alton Pkwy.	63.0	63.0	0.0	NO
210	Jeronimo Rd.	w/o Lake Forest Dr.	64.3	64.3	0.0	NO
211	Jeronimo Rd.	e/o Lake Forest Dr.	65.8	65.8	0.0	NO
212	Jeronimo Rd.	e/o Ridge Route Dr.	65.3	65.3	0.0	NO
213	Jeromino Rd.	w/o Los Alisos Bl.	68.0	68.0	0.0	NO
214	Jeromino Rd.	e/o Los Alisos Bl.	67.3	67.3	0.0	NO
215	Jeronimo Rd.	s/o Alicia Pkwy.	67.6	67.6	0.0	NO
216	Laguna Canyon Rd.	b/w ICD and Discovery	62.7	62.7	0.0	NO
217	Laguna Canyon Rd.	b/w Waterworks Wy. and ICD	62.7	62.8	0.1	NO
218	Laguna Canyon Rd.	n/o Alton Pkwy.	62.2	62.2	0.0	NO
219	Laguna Canyon Rd.	s/o Alton Pkwy.	64.2	64.2	0.0	NO
220	Laguna Canyon Rd.	n/o Quail Hill Pkwy.	63.2	63.2	0.0	NO
221	Laguna Canyon Rd.	s/o Quail Hill Pkwy.	65.2	65.2	0.0	NO
222	Laguna Canyon Rd.	n/o SR-73 NB Ramps	69.7	69.7	0.0	NO
223	Laguna Hills Dr.	s/o Paseo de Valencia	67.3	67.3	0.0	NO
224	Laguna Hills Dr.	w/o Moulton Pkwy.	69.7	69.7	0.0	NO
225	Lake Rd.	n/o Alton Pkwy.	56.9	56.9	0.0	NO
226	Lake Forest Dr.	s/o Portola Pkwy.	66.1	66.1	0.0	NO
227	Lake Forest Dr.	s/o SR-241 SB Ramps	68.0	67.9	-0.1	NO
228	Lake Forest Dr.	s/o Rancho Pkwy.	69.1	69.1	0.0	NO
229	Lake Forest Dr.	n/o Trabuco Rd.	69.1	69.1	0.0	NO
230	Lake Forest Dr.	s/o Trabuco Rd.	71.0	71.0	0.0	NO
231	Lake Forest Dr.	n/o Jeronimo Rd.	70.8	70.8	0.0	NO
232	Lake Forest Dr.	s/o Jeronimo Rd.	70.9	70.9	0.0	NO
233	Lake Forest Dr.	n/o Muirlands Bl.	69.8	69.8	0.0	NO
234	Lake Forest Dr.	n/o Rockfield Bl.	71.6	71.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
235	Lake Forest Dr.	b/w Rockfield Bl. and I-5 NB Ramps	73.7	73.7	0.0	NO
236	Lake Forest Dr.	s/o Avenida Carlota/I-5 SB Ramps	69.2	69.2	0.0	NO
237	Lake Forest Dr.	s/o ICD	66.6	66.7	0.1	NO
238	Lake Forest Dr.	b/w Scientific Way and Tesla	69.0	69.0	0.0	NO
239	Lake Forest Dr.	e/o Bake Pkwy.	69.3	69.4	0.1	NO
240	Lake Forest Dr.	w/o Bake Pkwy.	67.9	67.9	0.0	NO
241	Los Alisos BI.	n/o Trabuco Rd.	67.1	67.1	0.0	NO
242	Los Alisos Bl.	s/o Trabuco Rd.	69.3	69.3	0.0	NO
243	Los Alisos BI.	e/o Muirlands Bl.	71.0	71.0	0.0	NO
244	Los Alisos BI.	w/o Muirlands Bl.	69.1	69.1	0.0	NO
245	Los Alisos Bl.	s/o Rockfield BI./Fordview St.	69.8	69.8	0.0	NO
246	Los Alisos Bl.	b/w Avenida Carlota and Paseo de Valencia	68.9	68.9	0.0	NO
247	Marine Wy.	w/o O St.	67.6	68.2	0.6	NO
248	Marine Wy.	e/o O St.	68.1	68.7	0.6	NO
249	Marine Wy.	w/o D St.	68.0	68.6	0.6	NO
250	Marine Wy.	e/o D St.	67.4	68.1	0.7	NO
251	Marine Wy	w/o Great Park Blvd East	67.5	68.2	0.7	NO
252	Marine Wy	w/o B St	67.5	68.7	1.2	NO
253	Marine Wy	e/o B St	67.3	67.5	0.2	NO
254	Marine Wy.	n/o Barranca Pkwy.	67.9	67.7	-0.2	NO
255	Marine Wy.	s/o Barranca Pkwy.	66.0	65.7	-0.3	NO
256	Marine Wy.	n/o Rockfield Bl.	68.6	68.0	-0.6	NO
257	Marine Wy.	s/o Rockfield Bl.	67.6	68.2	0.6	NO
258	Meridian	n/o Alton Pkwy.	54.4	54.4	0.0	NO
259	Modjeska	n/o Irvine BI.	60.7	60.8	0.1	NO
260	Moulton Pkwy.	e/o (s/o) Lake Forest	69.8	69.8	0.0	NO
261	Moulton Pkwy.	e/o (s/o) Ridge Route	70.8	70.7	-0.1	NO
262	Moulton Pkwy.	w/o (n/o) El Toro Rd.	71.3	71.3	0.0	NO
263	Moulton Pkwy.	e/o (s/o) El Toro Rd.	71.4	71.4	0.0	NO
264	Moulton Pkwy.	b/w Glenwood/Indian Creek and Laguna Hills	71.0	71.0	0.0	NO
265	Moulton Pkwy.	s/o Laguna Hills Dr.	69.7	69.7	0.0	NO
266	Moulton Pkwy.	s/o Alicia Pkwy.	69.0	69.0	0.0	NO
267	Muirlands Bl.	w/o Bake Pkwy.	66.6	66.6	0.0	NO
268	Muirlands Bl.	e/o Bake Pkwy.	66.5	66.5	0.0	NO
269	Muirlands Bl.	w/o Ridge Route Dr.	67.8	67.8	0.0	NO
270	Muirlands Bl.	e/o Ridge Route Dr.	67.8	67.8	0.0	NO
271	Muirlands Bl.	e/o El Toro Rd.	68.2	68.1	-0.1	NO
272	Muirlands Bl.	s/o Los Alisos Bl.	67.4	67.4	0.0	NO
273	Muirlands Bl.	e/o Alicia Pkwy.	66.5	66.5	0.0	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
274	Oak Cyn.	w/o Sand Canyon. Av.	57.4	57.4	0.0	NO
275	Orchard Hills	n/o Portola Pkwy.	57.7	57.7	0.0	NO
276	Pacifica	w/o Fortune Dr.	64.7	64.7	0.0	NO
277	Pacifica	w/o (n/o) Alton Pkwy.	63.1	63.0	-0.1	NO
278	Paseo de Valencia	e/o El Toro Rd.	69.1	69.1	0.0	NO
279	Paseo de Valencia	w/o Los Alisos BI.	69.8	69.8	0.0	NO
280	Paseo de Valencia	e/o Los Alisos BI.	71.6	71.6	0.0	NO
281	Paseo de Valencia	w/o Alicia Pkwy.	70.4	70.5	0.1	NO
282	Paseo de Valencia	e/o Alicia Pkwy.	65.0	65.0	0.0	NO
283	Portola Pkwy.	w/o Jamboree Rd.	65.4	65.5	0.1	NO
284	Portola Pkwy.	w/o SR-261 SB Ramps	69.7	69.8	0.1	NO
285	Portola Pkwy.	e/o SR-261 NB Ramps	68.9	69.0	0.1	NO
286	Portola Pkwy.	e/o Culver Dr.	69.2	69.3	0.1	NO
287	Portola Pkwy.	w/o Jeffrey Rd.	69.8	69.8	0.0	NO
288	Portola Pkwy.	w/o Sand Canyon. Av.	68.8	68.8	0.0	NO
289	Portola Pkwy.	e/o Sand Canyon. Av.	68.0	68.1	0.1	NO
290	Portola Pkwy.	w/o Ridge Valley	68.3	68.3	0.0	NO
291	Portola Pkwy.	e/o Ridge Valley	68.4	68.4	0.0	NO
292	Portola Pkwy.	b/w Silverado and Portola Springs	68.7	68.7	0.0	NO
293	Portola Pkwy.	e/o Portola Springs	68.0	68.1	0.1	NO
294	Portola Pkwy.	w/o Alton Pkwy.	60.5	60.2	-0.3	NO
295	Portola Pkwy.	e/o Alton Pkwy.	68.3	68.3	0.0	NO
296	Portola Pkwy.	w/o Lake Forest Dr.	69.9	69.9	0.0	NO
297	Portola Pkwy.	w/o Glenn Ranch Rd.	71.8	71.8	0.0	NO
298	Portola Pkwy.	e/o Glenn Ranch Rd.	70.3	70.2	-0.1	NO
299	Portola Pkwy. East	s/o SR-241 SB Ramps	70.3	70.3	0.0	NO
300	Portola Pkwy.	s/o Rancho Pkwy.	72.6	72.6	0.0	NO
301	Portola Pkwy.	e/o El Toro Rd.	71.9	71.8	-0.1	NO
302	Portola Springs	s/o Portola Pkwy.	62.6	62.4	-0.2	NO
303	Quail Hill Pkwy.	e/o Shady Canyon Dr.	67.3	67.3	0.0	NO
304	Rancho Pkwy. S	w/o Bake Pkwy.	63.5	63.6	0.1	NO
305	Rancho Pkwy.	w/o Lake Forest Dr.	68.3	68.2	-0.1	NO
306	Rancho Pkwy.	e/o Lake Forest Dr.	66.5	66.5	0.0	NO
307	Research Dr.	e/o ICD	63.9	63.9	0.0	NO
308	Research Dr.	w/o (n/o) Bake Pkwy.	65.1	65.1	0.0	NO
309	Research Dr.	n/o Lake Forest Dr.	65.2	65.2	0.0	NO
310	Ridge Route Dr.	s/o Trabuco Rd.	63.1	63.1	0.0	NO
311	Ridge Route Dr.	n/o Jeronimo Rd.	62.0	62.0	0.0	NO
312	Ridge Route Dr.	s/o Jeronimo Rd.	63.5	63.6	0.1	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
313	Ridge Route Dr.	s/o Muirlands Bl.	62.6	62.6	0.0	NO
314	Ridge Route Dr.	s/o Rockfield B.	66.1	66.1	0.0	NO
315	Ridge Route Dr.	s/o (w/o) Avenida Carlota	65.3	65.3	0.0	NO
316	Ridge Route Dr.	s/o (w/o) Moulton Pkwy.	63.9	63.9	0.0	NO
317	Ridge Route Dr.	e/o Bake Pkwy.	63.3	63.3	0.0	NO
318	Ridge Valley	s/o Portola Pkwy.	64.4	64.3	-0.1	NO
319	Rockfield Bl.	e/o Marine Wy	62.4	n/a	n/a	n/a
320	Rockfield Bl.	e/o Sterling	61.7	n/a	n/a	n/a
321	Rockfield Bl.	w/o Bake Pkwy.	64.6	63.2	-1.4	NO
322	Rockfield Bl.	w/o Lake Forest Dr.	66.3	66.3	0.0	NO
323	Rockfield Bl.	w/o Ridge Route Dr.	67.3	67.3	0.0	NO
324	Rockfield Bl.	e/o Ridge Route Dr.	67.3	67.3	0.0	NO
325	Rockfield Bl.	e/o El Toro Rd.	66.5	66.5	0.0	NO
326	Roosevelt	w/o Jeffrey Rd.	64.5	64.5	0.0	NO
327	Roosevelt	e/o Jeffrey Rd.	67.5	67.6	0.1	NO
328	Roosevelt	w/o Sand Canyon Av.	63.7	63.7	0.0	NO
329	Sand Canyon. Av.	n/o Irvine BI.	68.7	68.6	-0.1	NO
330	Sand Canyon. Av.	s/o Irvine BI.	70.7	70.7	0.0	NO
331	Sand Canyon. Av.	n/o Trabuco Rd.	70.1	70.1	0.0	NO
332	Sand Canyon. Av.	s/o Trabuco Rd.	77.8	77.7	-0.1	NO
333	Sand Canyon. Av.	s/o Roosevelt	78.0	78.0	0.0	NO
334	Sand Canyon. Av.	n/o I-5 NB Ramps	78.7	78.7	0.0	NO
335	Sand Canyon. Av.	b/w I-5 SB Ramps and Burt Rd.	72.8	72.9	0.1	NO
336	Sand Canyon. Av.	b/w Burt Rd. and Oak Cyn./Laguna Cyn. Rd.	72.9	72.9	0.0	NO
337	Sand Canyon. Av.	n/o ICD	71.9	72.0	0.1	NO
338	Sand Canyon. Av.	s/o Waterworks Wy.	71.5	71.5	0.0	NO
339	Sand Canyon. Av.	s/o Barranca Pkwy.	71.5	71.6	0.1	NO
340	Sand Canyon. Av.	b/w Alton Pkwy.and I-405 NB Ramps	71.8	71.8	0.0	NO
341	Santa Maria Av.	s/o Moulton Pkwy.	63.0	63.0	0.0	NO
342	Santa Maria Av.	e/o Laguna Canyon Rd.	59.8	59.8	0.0	NO
343	Santiago Canyon Rd.	e/o SR-241 NB Ramp	67.2	67.3	0.1	NO
344	Scientific Wy.	s/o ICD	56.7	56.7	0.0	NO
345	Spectrum	w/o Fortune Dr.	53.9	53.9	0.0	NO
346	Sterling	b/w Rockfield BI and Barrana Pkwy	55.1	n/a	n/a	n/a
347	Technology Dr.	e/o Barranca Pkwy.	67.5	67.6	0.1	NO
348	Technology Dr.	w/o Barranca Pkwy.	66.4	66.4	0.0	NO
349	Technology Dr.	e/o Laguna Canyon Rd.	65.7	65.6	-0.1	NO
350	Toledo Wy.	e/o Alton Pkwy.	61.1	62.4	1.3	NO
351	Toledo Wy.	w/o Lake Forest Dr.	61.3	61.5	0.2	NO



#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	(Option 1)	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 1)	Contribution	Impact?1
352	Toledo Wy.	w/o Ridge Route Dr.	60.5	60.5	0.0	NO
353	Toledo Wy.	e/o Ridge Route Dr.	62.6	62.6	0.0	NO
354	Trabuco Rd.	b/w Culver Dr. and I-5 NB Ramps	70.2	70.2	0.0	NO
355	Trabuco Rd.	e/o I-5 NB Ramps	67.7	67.8	0.1	NO
356	Trabuco Rd.	w/o Jeffrey Rd.	67.1	67.2	0.1	NO
357	Trabuco Rd.	e/o Jeffrey Rd.	67.2	67.3	0.1	NO
358	Trabuco Rd.	e/o Sand Canyon	68.5	68.4	-0.1	NO
359	Trabuco Rd.	e/o Bake Pkwy.	69.3	69.3	0.0	NO
360	Trabuco Rd.	b/w Lake Forest Dr.and Ridge Route Dr.	70.4	70.4	0.0	NO
361	Trabuco Rd.	w/o El Toro Rd.	70.9	70.9	0.0	NO
362	Trabuco Rd.	e/o El Toro Rd.	67.3	67.3	0.0	NO
363	Trabuco Rd.	n/o Alicia Pkwy.	67.8	67.7	-0.1	NO
364	Trabuco Rd.	s/o Alicia Pkwy.	64.9	64.9	0.0	NO
365	Tustin Ranch Rd.	w/o Jamboree	65.6	65.5	-0.1	NO
366	Tustin Ranch Rd.	s/o Portola Pkwy.	69.8	69.8	0.0	NO
367	Tustin Ranch Rd.	n/o La Colina Dr.	69.8	69.8	0.0	NO
368	Tustin Ranch Rd.	s/o Irvine BI.	69.4	69.3	-0.1	NO
371	Walnut Av.	e/o Jamboree	69.3	69.3	0.0	NO
372	Walnut Av.	w/o Culver Dr.	68.5	68.6	0.1	NO
373	Walnut Av.	e/o Culver Dr.	68.5	68.5	0.0	NO
374	Walnut Av.	e/o Yale Av.	65.5	65.5	0.0	NO
375	Walnut Av.	w/o Jeffrey Rd.	67.3	67.3	0.0	NO
376	Warner Av.	w/o Paseo Westpark	64.7	64.8	0.1	NO
377	Warner Av.	w/o Culver Dr.	64.6	64.6	0.0	NO
378	Warner Av.	b/w Culver Dr.and W. Yale Loop	64.8	64.9	0.1	NO
379	W. Yale Loop	s/o Barranca Pkwy.	62.4	62.5	0.1	NO
380	W. Yale Loop	s/o Alton Pkwy.	65.3	65.3	0.0	NO
381	Yale Av.	b/w Portola and Arborwood	57.1	57.1	0.0	NO
382	Yale Av.	b/w Park Pl. and Irvine Bl.	65.1	65.1	0.0	NO
383	Yale Av.	n/o Bryan Av.	63.7	63.7	0.0	NO
384	Yale Av.	n/o Trabuco Rd.	64.3	64.4	0.1	NO
385	Yale Av.	n/o Walnut Av.	64.5	64.6	0.1	NO
386	Yale Av	s/o Walnut Av	65.1	65.2	0.1	NO
387	Yale Av	b/w Deerfield Dr. and ICD	65.5	65.5	0.0	NO
388	Yale Av	b/w ICD and Yale I p	64.8	64.9	0.0	NO
389	Thomas	n/o Muirlands Bl	52 5	52 7	0.1	NO
300	Thomas	s/o Muirlands Bl	50.1	50.7	0.2	NO
290	11011/185	alo iniuitatiua di.	53.1	59.1	0.0	NU





#### Post-2030 With 2012 Modified Project Option 1 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
ID	Roadway	Segment	2011 Approved Project (Baseline)	2012 Modified Project (Option 1)	(Option 1) Project Contribution	Potential Significant Impact? <sup>1</sup>
391	Irvine Bl.	e/o Fairbanks	72.1	72.0	-0.1	NO
392	Fairbanks	e/o Alton Pkwy.	59.1	59.8	0.7	NO
393	Fairbanks	w/o Alton Pkwy.	55.9	59.7	3.8	NO
394	Fairbanks	s/o Astor St.	50.2	56.8	6.6	NO
395	Fairbanks	w/o Irvine BI.	59.9	64.1	4.2	NO

<sup>1</sup> A significant impact is considered when noise levels exceed 65 dBA CNEL and the project creates an increase greater than 1.5 dBA1



#### Table 7-2

## Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
1	Ada	s/o Barranca Pkwy.	57.8	58.9	1.1	NO
2	Alicia Pkwy.	n/o Trabuco Rd.	70.7	70.7	0.0	NO
3	Alicia Pkwy.	s/o Trabuco Rd.	71.2	71.2	0.0	NO
4	Alicia Pkwy.	s/o Jeronimo Rd.	72.6	72.6	0.0	NO
5	Alicia Pkwy.	n/o Muirlands BI.	72.6	72.6	0.0	NO
6	Alicia Pkwy.	b/w I-5 NB Ramps and Muirlands BI.	73.0	73.0	0.0	NO
7	Alicia Pkwy.	s/o I-5 SB Ramps	72.1	72.1	0.0	NO
8	Alicia Pkwy.	s/o Paseo de Valencia	71.5	71.5	0.0	NO
9	Alicia Pkwy.	s/o Moulton Pkwy.	71.3	71.3	0.0	NO
10	Aliso Creek Rd.	e/o El Toro Rd.	66.2	66.2	0.0	NO
11	Alton Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
12	Alton Pkwy.	e/o Culver Dr.	69.0	69.0	0.0	NO
13	Alton Pkwy.	e/o W. Yale Loop	68.8	68.9	0.1	NO
14	Alton Pkwy.	e/o Lake Rd.	68.6	68.6	0.0	NO
15	Alton Pkwy.	e/o Creek Rd.	68.4	68.4	0.0	NO
16	Alton Pkwy.	w/o Jeffrey Rd.	69.2	69.2	0.0	NO
17	Alton Pkwy.	b/w Jeffrey Rd. and Royal Oak	68.1	68.1	0.0	NO
18	Alton Pkwy.	b/w Royal Oak and Valley Oak	67.6	67.6	0.0	NO
19	Alton Pkwy.	w/o Sand Canyon Av.	68.8	68.8	0.0	NO
20	Alton Pkwy.	e/o Sand Canyon. Av.	70.7	70.7	0.0	NO
21	Alton Pkwy.	e/o Laguna Canyon Rd.	67.2	67.2	0.0	NO
22	Alton Pkwy.	b/w Pacifica and Banting	67.4	67.5	0.1	NO
23	Alton Pkwy.	w/o Meridian	66.9	66.9	0.0	NO
24	Alton Pkwy.	b/w Meridian and ICD	68.2	68.2	0.0	NO
25	Alton Pkwy.	b/w Enterprise and Gateway Bl.	71.3	71.4	0.1	NO
26	Alton Pkwy.	b/w Enterprise and I-5 NB Ramps	72.8	72.8	0.0	NO
27	Alton Pkwy.	b/w I-5 NB Ramps and Technology Dr. W	72.9	72.9	0.0	NO
28	Alton Pkwy.	b/w Techonology Dr. W and Ada	71.6	71.7	0.1	NO
29	Alton Pkwy.	e/o Ada	71.1	71.1	0.0	NO
30	Alton Pkwy.	w/o Marine Wy.	71.3	71.4	0.1	NO
31	Alton Pkwy.	e/o Technology	71.3	71.4	0.1	NO
32	Alton Pkwy.	s/o Barranca Pkwy./Muirlands Bl.	71.2	71.3	0.1	NO
33	Alton Pkwy.	n/o Barranca Pkwy./Muirlands Bl.	71.9	71.9	0.0	NO
34	Alton Pkwy.	s/o Jeronimo Rd.	71.9	71.9	0.0	NO
35	Alton Pkwy.	n/o Jeronimo Rd.	71.5	71.4	-0.1	NO
36	Alton Pkwy.	s/o Toledo Wy.	70.6	70.5	-0.1	NO
37	Alton Pkwy.	n/o Toledo Wy.	70.6	70.4	-0.2	NO
38	Alton Pkwy.	s/o Irvine BI. / Trabuco Rd.	70.8	70.9	0.1	NO
39	Alton Pkwy.	n/o Irvine BI.	71.6	71.7	0.1	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
40	Alton Pkwy.	n/o Commercentre	72.1	72.1	0.0	NO
41	Alton Pkwy.	s/o SR-241 Ramps	68.4	68.4	0.0	NO
42	Alton Pkwy.	n/o SR-241 Ramps	69.3	69.3	0.0	NO
43	Avenida Carlota	w/o Ridge Route Dr.	63.6	63.6	0.0	NO
44	Avenida Carlota	w/o Paseo de Valencia	65.9	65.9	0.0	NO
45	Avenida Carlota	b/w Paseo de Valencia and El Toro Rd.	69.1	69.1	0.0	NO
46	Avenida Carlota	e/o El Toro Rd.	67.2	67.2	0.0	NO
47	Bake Pkwy.	s/o Portola Pkwy.	66.5	66.5	0.0	NO
48	Bake Pkwy.	n/o Commercentre Dr.	68.7	68.7	0.0	NO
49	Bake Pkwy.	n/o Irvine BI.	69.3	69.3	0.0	NO
50	Bake Pkwy.	s/o Irvine BI.	72.5	72.5	0.0	NO
51	Bake Pkwy.	b/w Toledo Wy. and Jeronimo Rd.	73.1	73.1	0.0	NO
52	Bake Pkwy.	n/o Muirlands BI.	73.6	73.6	0.0	NO
53	Bake Pkwy.	s/o Muirlands BI.	78.7	78.7	0.0	NO
54	Bake Pkwy.	s/o Rockfield Bl.	74.5	74.6	0.1	NO
55	Bake Pkwy.	n/o I-5 NB Ramps	74.8	74.8	0.0	NO
56	Bake Pkwy.	b/w I-5 SB Ramps and Research Dr.	71.1	71.2	0.1	NO
57	Bake Pkwy.	b/w Research Dr. and ICD	68.0	68.0	0.0	NO
58	Bake Pkwy.	s/ICD	67.7	67.7	0.0	NO
59	Bake Pkwy.	b/w Lake Forest Dr. and Ridge Route Dr.	60.9	60.9	0.0	NO
60	Bake Pkwy.	b/w Ridge Route Dr. and Laguna Canyon	65.9	66.0	0.1	NO
61	Barranca Pkwy.	w/o Culver Dr.	69.9	70.0	0.1	NO
62	Barranca Pkwy.	e/o Culver Dr.	69.4	69.4	0.0	NO
63	Barranca Pkwy.	e/o W. Yale Lp.	69.0	69.0	0.0	NO
64	Barranca Pkwy.	e/o Lake Rd.	68.5	68.5	0.0	NO
65	Barranca Pkwy.	b/w Creek Rd. and Lyon	68.3	68.3	0.0	NO
66	Barranca Pkwy.	w/o E. Yale Lp.	68.3	68.3	0.0	NO
67	Barranca Pkwy.	w/o Jeffrey Rd.	68.8	68.8	0.0	NO
68	Barranca Pkwy.	e/o Jeffrey Rd.	66.9	66.9	0.0	NO
69	Barranca Pkwy.	w/o Sand Canyon. Av.	66.9	67.0	0.1	NO
70	Barranca Pkwy.	e/o Sand Canyon. Av.	66.3	66.3	0.0	NO
71	Barranca Pkwy.	e/o Laguna Canyon Rd.	66.1	66.1	0.0	NO
72	Barranca Pkwy.	b/w Discovery and Banting	65.6	65.6	0.0	NO
73	Barranca Pkwy.	s/o ICD	66.9	67.0	0.1	NO
74	Barranca Pkwy.	b/w I-5 HOV Ramp and ICD	67.5	67.6	0.1	NO
75	Barranca Pkwy.	s/o Technology	67.8	67.9	0.1	NO
76	Barranca Pkwy.	n/o Technology	68.0	68.2	0.2	NO
77	Barranca Pkwy.	e/o Ada	67.5	67.8	0.3	NO
78	Barranca Pkwy.	w/o Marine Wy.	68.3	68.5	0.2	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
79	Barranca Pkwy.	w/o Alton Pkwy.	67.8	67.5	-0.3	NO
80	Barranca Pkwy	e/o Alton Pkwy.	67.2	67.5	0.3	NO
81	Barranca Pkwy	e/o Sterling	66.3	66.4	0.1	NO
82	Bryan Av.	w/o Jamboree Rd.	67.6	67.6	0.0	NO
83	Bryan Av.	e/o Jamboree Rd.	67.3	67.4	0.1	NO
84	Bryan Av.	w/o Culver Dr.	68.6	68.7	0.1	NO
85	Bryan Av.	e/o Culver Dr.	67.2	67.3	0.1	NO
86	Bryan Av.	e/o Eastwood	65.8	65.9	0.1	NO
87	Canyon View Av.	w/o Jamboree Rd.	62.2	62.1	-0.1	NO
88	Chapman Ave.	w/o Jamboree Rd.	69.1	69.4	0.3	NO
89	Chapman Ave.	e/o Jamboree Rd.	71.1	71.0	-0.1	NO
90	Creek Rd.	n/o Alton Pkwy.	55.7	55.7	0.0	NO
91	Culver Dr.	s/o Portola Pkwy.	69.7	69.7	0.0	NO
92	Culver Dr.	n/o Irvine BI.	70.1	70.2	0.1	NO
93	Culver Dr.	s/o Irvine BI.	71.2	71.3	0.1	NO
94	Culver Dr.	n/o Bryan Av.	70.7	70.7	0.0	NO
95	Culver Dr.	s/o Bryan Av.	72.7	72.7	0.0	NO
96	Culver Dr.	n/o Trabuco Rd.	72.8	72.8	0.0	NO
97	Culver Dr.	s/o I-5 SB Ramps	73.2	73.2	0.0	NO
98	Culver Dr.	n/o Walnut Av.	72.7	72.8	0.1	NO
99	Culver Dr.	b/w Walnut Av. and Deerfiled Dr.	72.4	72.4	0.0	NO
100	Culver Dr.	b/w Deerfield Dr. and ICD	71.9	72.0	0.1	NO
101	Culver Dr.	b/w ICD and Warner Av.	72.2	72.3	0.1	NO
102	Culver Dr.	b/w Warner Av. and Barranca Pkwy.	72.3	72.4	0.1	NO
103	Culver Dr.	n/o Alton Pkwy.	72.7	72.7	0.0	NO
104	Culver Dr.	b/w Alton Pkwy. and Main St.	72.8	72.8	0.0	NO
105	Culver Dr.	b/w Main St. and San Leandro	72.8	72.8	0.0	NO
106	Culver Dr.	b/w San Leandro and I-405 NB Ramps	73.3	73.3	0.0	NO
107	E. Yale Lp.	s/o Barranca Pkwy.	64.2	64.2	0.0	NO
108	E. Yale Lp.	n/o Alton Pkwy.	65.0	65.0	0.0	NO
109	E. Yale Lp.	s/o Alton Pkwy.	65.0	65.0	0.0	NO
110	El Camino Real	e/o Tustin Ranch Rd.	65.7	65.7	0.0	NO
111	El Camino Real	e/o Jamboree Rd.	68.2	68.3	0.1	NO
112	El Camino Real N.	s/o Bryan Ave.	63.3	63.3	0.0	NO
113	El Toro Rd.	n/o Portola Pkwy./S. Margarita Pkwy.	67.9	67.9	0.0	NO
114	El Toro Rd.	s/o Portola Pkwy./S. Margarita Pkwy.	71.2	71.2	0.0	NO
115	El Toro Rd.	n/o Trabuco Rd.	68.3	68.3	0.0	NO
116	El Toro Rd.	n/o Toledo Wy.	72.6	72.6	0.0	NO
117	El Toro Rd.	n/o Jeronimo Rd.	72.6	72.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL	at 100 Feet	(dBA)	
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
118	El Toro Rd.	s/o Jeronimo Rd.	72.8	72.8	0.0	NO
119	El Toro Rd.	n/o Rockfield Bl.	73.2	73.2	0.0	NO
120	El Toro Rd.	b/w Rockfield Bl.and I-5 NB Ramps	74.3	74.3	0.0	NO
121	El Toro Rd.	b/w I-5 SB Ramps and Avenida Carlota	71.4	71.4	0.0	NO
122	El Toro Rd.	n/o Paseo de Valencia	69.6	69.6	0.0	NO
123	El Toro Rd.	s/o Paseo de Valencia	70.0	70.0	0.0	NO
124	El Toro Rd.	s/o Moulton Pkwy.	70.0	69.9	-0.1	NO
125	El Toro Rd.	n/o Aliso Creek Rd.	69.1	69.1	0.0	NO
126	El Toro Rd.	n/o SR-73	69.6	69.6	0.0	NO
127	El Toro Rd.	s/o SR-73	66.0	66.0	0.0	NO
128	Fortune Dr.	b/w Gateway Bl. and Spectrum	63.8	63.8	0.0	NO
129	Fortune Dr.	b/w Pacifica and Spectrum	63.9	63.9	0.0	NO
130	Gateway Bl.	w/o Fortune Dr.	62.9	62.9	0.0	NO
131	Gateway Bl.	n/o Alton Pkwy.	56.7	56.7	0.0	NO
132	Gateway Bl.	w/o ICD	58.7	58.9	0.2	NO
133	Glenn Ranch Rd.	n/o Portola Pkwy.	68.2	68.2	0.0	NO
134	Glenwood Dr.	w/o Moulton Pkwy.	64.2	64.2	0.0	NO
135	Handy Creek Rd.	e/o Jamboree Rd.	54.1	53.9	-0.2	NO
136	Harvard Av.	s/o Walnut Av.	60.0	59.9	-0.1	NO
137	Harvard Av.	n/o Edinger Av.	65.6	65.6	0.0	NO
138	Harvard Av.	b/w Edinger Av. And Paseo Westpark	66.2	66.2	0.0	NO
139	Hubble	n/o ICD	57.4	57.4	0.0	NO
140	Irvine BI.	b/w Newport and Red Hill	72.2	72.3	0.1	NO
141	Irvine BI.	b/w Red Hill and Browning	70.8	70.9	0.1	NO
142	Irvine BI.	w/o Tustin Ranch Rd.	71.6	71.7	0.1	NO
143	Irvine BI.	w/o Jamboree Rd.	71.1	71.1	0.0	NO
144	Irvine BI.	e/o Jamboree Rd.	72.2	72.2	0.0	NO
145	Irvine BI.	b/w SR-261 Ramps	72.0	72.1	0.1	NO
146	Irvine BI.	e/o SR-261 NB Ramps	72.2	72.2	0.0	NO
147	Irvine BI.	w/o Culver Dr.	71.5	71.5	0.0	NO
148	Irvine BI.	e/o Culver Dr.	71.5	71.6	0.1	NO
149	Irvine BI.	e/o Yale Av.	71.9	71.9	0.0	NO
150	Irvine BI.	w/o Jeffrey Rd.	71.4	71.4	0.0	NO
151	Irvine BI.	e/o Jeffrey Rd.	71.2	71.3	0.1	NO
152	Irvine BI.	e/o Groveland	71.3	71.3	0.0	NO
153	Irvine Bl.	e/o Sand Canyon. Av.	71.5	71.6	0.1	NO
154	Irvine Bl.	e/o SR-133 NB Ramps	71.9	72.0	0.1	NO
155	Irvine BI.	w/o O St.	71.3	71.3	0.0	NO
156	Irvine Bl.	e/o O St.	71.6	71.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
157	Irvine Bl.	w/o A St.	71.6	71.7	0.1	NO
158	Irvine Bl.	w/o Z St.	72.2	72.3	0.1	NO
159	Irvine Bl.	e/o Z St.	72.3	72.4	0.1	NO
160	Irvine Bl.	w/o LQ St.	72.3	72.2	-0.1	NO
161	Irvine Bl.	e/o LQ St.	72.8	72.6	-0.2	NO
162	Irvine Bl.	w/o Alton Pkwy.	73.0	72.8	-0.2	NO
163	Irvine Bl.	e/o Alton Pkwy.	72.1	71.9	-0.2	NO
164	ICD/Edinger Av.	w/o Jamboree	69.1	69.2	0.1	NO
165	ICD/Edinger Av.	e/o Jamboree	69.7	69.7	0.0	NO
166	ICD	e/o Hearthstone Bl.	69.7	69.8	0.1	NO
167	ICD	e/o Culver Dr.	69.9	69.9	0.0	NO
168	ICD	b/w Yale Av. And Fontaine Av.	70.2	70.2	0.0	NO
169	ICD	e/o Jeffrey Rd.	71.8	71.8	0.0	NO
170	ICD	w/o Sand Canyon. Av.	69.7	69.8	0.1	NO
171	ICD	e/o Sand Canyon Av.	68.5	68.5	0.0	NO
172	ICD	b/w Laguna Canyon Rd. and Discovery	68.1	68.2	0.1	NO
173	ICD	w/o Barranca Pkwy.	69.1	69.1	0.0	NO
174	ICD	b/w Barranca Pkwy. and Gateway Bl.	69.3	69.4	0.1	NO
175	ICD	b/w Gateway Bl.and Alton Pkwy.	68.8	68.8	0.0	NO
176	ICD	b/w Alton Pkwy.and Spectrum	71.0	71.0	0.0	NO
177	ICD	b/w Pacifica and Enterprise Dr.	71.1	71.1	0.0	NO
178	ICD	b/w Enterprise and I-405 SB Ramps	72.9	72.9	0.0	NO
179	ICD	b/w I-405 SB Ramps and Research Dr.	72.0	72.0	0.0	NO
180	ICD	b/w Research Dr. and Hubble	69.4	69.4	0.0	NO
181	ICD	b/w Hubble and Bake Pkwy.	69.1	69.1	0.0	NO
182	ICD	b/w Bake Pkwy. and Muller	68.9	68.9	0.0	NO
183	ICD	b/w Muller and Tesla	68.8	68.8	0.0	NO
184	ICD	w/o Lake Forest Dr.	68.7	68.7	0.0	NO
185	Jamboree Rd.	n/o Chapman/Santiago Cyn.	67.9	68.1	0.2	NO
186	Jamboree Rd.	s/o Chapman Av.	66.3	66.7	0.4	NO
187	Jamboree Rd.	s/o Canyon View Av.	68.7	68.9	0.2	NO
188	Jamboree Rd.	n/o Tustin Ranch Rd.	69.1	69.2	0.1	NO
189	Jamboree Rd.	s/o Tustin Ranch Rd.	69.0	69.2	0.2	NO
190	Jamboree Rd.	n/o Irvine BI.	69.2	69.3	0.1	NO
191	Jamboree Rd.	s/o Irvine BI.	76.5	76.5	0.0	NO
192	Jamboree Rd.	s/o Bryan Av.	76.7	76.7	0.0	NO
193	Jamboree Rd.	b/w El Camino Real and I-5 NB Ramps	78.6	78.6	0.0	NO
194	Jamboree Rd.	n/o Michelle Dr.	78.5	78.5	0.0	NO
195	Jamboree Rd.	s/o Michelle Dr.	73.3	73.3	0.0	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
196	Jamboree Rd.	n/o Edinger Av.	80.6	80.6	0.0	NO
197	Jamboree Rd.	s/o Edinger Av.	80.1	80.1	0.0	NO
198	Jeffrey Rd.	e/o SR-241 NB Ramps	60.5	60.3	-0.2	NO
199	Jeffrey Rd.	n/o Portola Pkwy.	64.8	64.8	0.0	NO
200	Jeffrey Rd.	n/o Irvine BI.	70.9	70.9	0.0	NO
201	Jeffrey Rd.	n/o Bryan Av.	71.1	71.2	0.1	NO
202	Jeffrey Rd.	n/o Trabuco Rd.	72.3	72.3	0.0	NO
203	Jeffrey Rd.	s/o Trabuco Rd.	72.7	72.8	0.1	NO
204	Jeffrey Rd.	b/w Roosevelt and I-5 NB Ramps	74.0	74.1	0.1	NO
205	Jeffrey Rd.	s/o Walnut Av./I-5 SB Ramps	72.7	72.6	-0.1	NO
206	Jeffrey Rd.	s/o Irvine Center Drive	72.6	72.6	0.0	NO
207	Jeffrey Rd.	n/o Alton Pkwy.	72.4	72.4	0.0	NO
208	Jeffrey Rd.	b/w Quailcreek and I-405 NB Ramps	73.2	73.3	0.1	NO
209	Jeronimo Rd.	e/o Alton Pkwy.	63.0	63.0	0.0	NO
210	Jeronimo Rd.	w/o Lake Forest Dr.	64.3	64.3	0.0	NO
211	Jeronimo Rd.	e/o Lake Forest Dr.	65.8	65.8	0.0	NO
212	Jeronimo Rd.	e/o Ridge Route Dr.	65.3	65.3	0.0	NO
213	Jeromino Rd.	w/o Los Alisos Bl.	68.0	68.0	0.0	NO
214	Jeromino Rd.	e/o Los Alisos Bl.	67.3	67.3	0.0	NO
215	Jeronimo Rd.	s/o Alicia Pkwy.	67.6	67.6	0.0	NO
216	Laguna Canyon Rd.	b/w ICD and Discovery	62.7	62.7	0.0	NO
217	Laguna Canyon Rd.	b/w Waterworks Wy. and ICD	62.7	62.8	0.1	NO
218	Laguna Canyon Rd.	n/o Alton Pkwy.	62.2	62.2	0.0	NO
219	Laguna Canyon Rd.	s/o Alton Pkwy.	64.2	64.2	0.0	NO
220	Laguna Canyon Rd.	n/o Quail Hill Pkwy.	63.2	63.2	0.0	NO
221	Laguna Canyon Rd.	s/o Quail Hill Pkwy.	65.2	65.2	0.0	NO
222	Laguna Canyon Rd.	n/o SR-73 NB Ramps	69.7	69.7	0.0	NO
223	Laguna Hills Dr.	s/o Paseo de Valencia	67.3	67.4	0.1	NO
224	Laguna Hills Dr.	w/o Moulton Pkwy.	69.7	69.7	0.0	NO
225	Lake Rd.	n/o Alton Pkwy.	56.9	56.9	0.0	NO
226	Lake Forest Dr.	s/o Portola Pkwy.	66.1	66.1	0.0	NO
227	Lake Forest Dr.	s/o SR-241 SB Ramps	68.0	67.9	-0.1	NO
228	Lake Forest Dr.	s/o Rancho Pkwy.	69.1	69.1	0.0	NO
229	Lake Forest Dr.	n/o Trabuco Rd.	69.1	69.1	0.0	NO
230	Lake Forest Dr.	s/o Trabuco Rd.	71.0	71.0	0.0	NO
231	Lake Forest Dr.	n/o Jeronimo Rd.	70.8	70.8	0.0	NO
232	Lake Forest Dr.	s/o Jeronimo Rd.	70.9	70.9	0.0	NO
233	Lake Forest Dr.	n/o Muirlands Bl.	69.8	69.8	0.0	NO
234	Lake Forest Dr.	n/o Rockfield Bl.	71.6	71.6	0.0	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
235	Lake Forest Dr.	b/w Rockfield BI. and I-5 NB Ramps	73.7	73.7	0.0	NO
236	Lake Forest Dr.	s/o Avenida Carlota/I-5 SB Ramps	69.2	69.2	0.0	NO
237	Lake Forest Dr.	s/o ICD	66.6	66.7	0.1	NO
238	Lake Forest Dr.	b/w Scientific Way and Tesla	69.0	69.0	0.0	NO
239	Lake Forest Dr.	e/o Bake Pkwy.	69.3	69.4	0.1	NO
240	Lake Forest Dr.	w/o Bake Pkwy.	67.9	67.9	0.0	NO
241	Los Alisos Bl.	n/o Trabuco Rd.	67.1	67.1	0.0	NO
242	Los Alisos Bl.	s/o Trabuco Rd.	69.3	69.3	0.0	NO
243	Los Alisos Bl.	e/o Muirlands Bl.	71.0	71.0	0.0	NO
244	Los Alisos Bl.	w/o Muirlands Bl.	69.1	69.1	0.0	NO
245	Los Alisos Bl.	s/o Rockfield BI./Fordview St.	69.8	69.8	0.0	NO
246	Los Alisos Bl.	b/w Avenida Carlota and Paseo de Valencia	68.9	68.9	0.0	NO
247	Marine Wy.	w/o O St.	67.6	68.2	0.6	NO
248	Marine Wy.	e/o O St.	68.1	68.7	0.6	NO
249	Marine Wy.	w/o D St.	68.0	68.6	0.6	NO
250	Marine Wy.	e/o D St.	67.4	68.1	0.7	NO
251	Marine Wy	w/o Great Park Blvd East	67.5	68.2	0.7	NO
252	Marine Wy	w/o B St	67.5	68.7	1.2	NO
253	Marine Wy	e/o B St	67.3	67.5	0.2	NO
254	Marine Wy.	n/o Barranca Pkwy.	67.9	67.7	-0.2	NO
255	Marine Wy.	s/o Barranca Pkwy.	66.0	65.7	-0.3	NO
256	Marine Wy.	n/o Rockfield Bl.	68.6	68.0	-0.6	NO
257	Marine Wy.	s/o Rockfield BI.	67.6	68.2	0.6	NO
258	Meridian	n/o Alton Pkwy.	54.4	54.4	0.0	NO
259	Modjeska	n/o Irvine BI.	60.7	60.8	0.1	NO
260	Moulton Pkwy.	e/o (s/o) Lake Forest	69.8	69.8	0.0	NO
261	Moulton Pkwy.	e/o (s/o) Ridge Route	70.8	70.7	-0.1	NO
262	Moulton Pkwy.	w/o (n/o) El Toro Rd.	71.3	71.3	0.0	NO
263	Moulton Pkwy.	e/o (s/o) El Toro Rd.	71.4	71.4	0.0	NO
264	Moulton Pkwy.	b/w Glenwood/Indian Creek and Laguna Hills	71.0	71.0	0.0	NO
265	Moulton Pkwy.	s/o Laguna Hills Dr.	69.7	69.7	0.0	NO
266	Moulton Pkwy.	s/o Alicia Pkwy.	69.0	69.0	0.0	NO
267	Muirlands Bl.	w/o Bake Pkwy.	66.6	66.6	0.0	NO
268	Muirlands Bl.	e/o Bake Pkwy.	66.5	66.5	0.0	NO
269	Muirlands Bl.	w/o Ridge Route Dr.	67.8	67.8	0.0	NO
270	Muirlands Bl.	e/o Ridge Route Dr.	67.8	67.8	0.0	NO
271	Muirlands Bl.	e/o El Toro Rd.	68.2	68.1	-0.1	NO
272	Muirlands Bl.	s/o Los Alisos Bl.	67.4	67.4	0.0	NO
273	Muirlands Bl.	e/o Alicia Pkwy.	66.5	66.5	0.0	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
274	Oak Cyn.	w/o Sand Canyon. Av.	57.4	57.4	0.0	NO
275	Orchard Hills	n/o Portola Pkwy.	57.7	57.7	0.0	NO
276	Pacifica	w/o Fortune Dr.	64.7	64.6	-0.1	NO
277	Pacifica	w/o (n/o) Alton Pkwy.	63.1	63.0	-0.1	NO
278	Paseo de Valencia	e/o El Toro Rd.	69.1	69.1	0.0	NO
279	Paseo de Valencia	w/o Los Alisos Bl.	69.8	69.8	0.0	NO
280	Paseo de Valencia	e/o Los Alisos Bl.	71.6	71.6	0.0	NO
281	Paseo de Valencia	w/o Alicia Pkwy.	70.4	70.5	0.1	NO
282	Paseo de Valencia	e/o Alicia Pkwy.	65.0	65.0	0.0	NO
283	Portola Pkwy.	w/o Jamboree Rd.	65.4	65.5	0.1	NO
284	Portola Pkwy.	w/o SR-261 SB Ramps	69.7	69.9	0.2	NO
285	Portola Pkwy.	e/o SR-261 NB Ramps	68.9	69.0	0.1	NO
286	Portola Pkwy.	e/o Culver Dr.	69.2	69.3	0.1	NO
287	Portola Pkwy.	w/o Jeffrey Rd.	69.8	69.8	0.0	NO
288	Portola Pkwy.	w/o Sand Canyon. Av.	68.8	68.8	0.0	NO
289	Portola Pkwy.	e/o Sand Canyon. Av.	68.0	68.0	0.0	NO
290	Portola Pkwy.	w/o Ridge Valley	68.3	68.3	0.0	NO
291	Portola Pkwy.	e/o Ridge Valley	68.4	68.4	0.0	NO
292	Portola Pkwy.	b/w Silverado and Portola Springs	68.7	68.7	0.0	NO
293	Portola Pkwy.	e/o Portola Springs	68.0	68.1	0.1	NO
294	Portola Pkwy.	w/o Alton Pkwy.	60.5	60.2	-0.3	NO
295	Portola Pkwy.	e/o Alton Pkwy.	68.3	68.3	0.0	NO
296	Portola Pkwy.	w/o Lake Forest Dr.	69.9	69.9	0.0	NO
297	Portola Pkwy.	w/o Glenn Ranch Rd.	71.8	71.8	0.0	NO
298	Portola Pkwy.	e/o Glenn Ranch Rd.	70.3	70.2	-0.1	NO
299	Portola Pkwy. East	s/o SR-241 SB Ramps	70.3	70.3	0.0	NO
300	Portola Pkwy.	s/o Rancho Pkwy.	72.6	72.6	0.0	NO
301	Portola Pkwy.	e/o El Toro Rd.	71.9	71.8	-0.1	NO
302	Portola Springs	s/o Portola Pkwy.	62.6	62.4	-0.2	NO
303	Quail Hill Pkwy.	e/o Shady Canyon Dr.	67.3	67.3	0.0	NO
304	Rancho Pkwy. S	w/o Bake Pkwy.	63.5	63.6	0.1	NO
305	Rancho Pkwy.	w/o Lake Forest Dr.	68.3	68.2	-0.1	NO
306	Rancho Pkwy.	e/o Lake Forest Dr.	66.5	66.5	0.0	NO
307	Research Dr.	e/o ICD	63.9	63.9	0.0	NO
308	Research Dr.	w/o (n/o) Bake Pkwy.	65.1	65.1	0.0	NO
309	Research Dr.	n/o Lake Forest Dr.	65.2	65.2	0.0	NO
310	Ridge Route Dr.	s/o Trabuco Rd.	63.1	63.1	0.0	NO
311	Ridge Route Dr.	n/o Jeronimo Rd.	62.0	62.0	0.0	NO
312	Ridge Route Dr.	s/o Jeronimo Rd.	63.5	63.6	0.1	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact?1
313	Ridge Route Dr.	s/o Muirlands Bl.	62.6	62.6	0.0	NO
314	Ridge Route Dr.	s/o Rockfield B.	66.1	66.1	0.0	NO
315	Ridge Route Dr.	s/o (w/o) Avenida Carlota	65.3	65.3	0.0	NO
316	Ridge Route Dr.	s/o (w/o) Moulton Pkwy.	63.9	64.0	0.1	NO
317	Ridge Route Dr.	e/o Bake Pkwy.	63.3	63.3	0.0	NO
318	Ridge Valley	s/o Portola Pkwy.	64.4	64.3	-0.1	NO
319	Rockfield Bl.	e/o Marine Wy	62.4	n/a	n/a	n/a
320	Rockfield Bl.	e/o Sterling	61.7	n/a	n/a	n/a
321	Rockfield Bl.	w/o Bake Pkwy.	64.6	63.2	-1.4	NO
322	Rockfield Bl.	w/o Lake Forest Dr.	66.3	66.3	0.0	NO
323	Rockfield Bl.	w/o Ridge Route Dr.	67.3	67.3	0.0	NO
324	Rockfield Bl.	e/o Ridge Route Dr.	67.3	67.3	0.0	NO
325	Rockfield Bl.	e/o El Toro Rd.	66.5	66.5	0.0	NO
326	Roosevelt	w/o Jeffrey Rd.	64.5	64.5	0.0	NO
327	Roosevelt	e/o Jeffrey Rd.	67.5	67.6	0.1	NO
328	Roosevelt	w/o Sand Canyon Av.	63.7	63.7	0.0	NO
329	Sand Canyon. Av.	n/o Irvine Bl.	68.7	68.7	0.0	NO
330	Sand Canyon. Av.	s/o Irvine BI.	70.7	70.7	0.0	NO
331	Sand Canyon. Av.	n/o Trabuco Rd.	70.1	70.1	0.0	NO
332	Sand Canyon. Av.	s/o Trabuco Rd.	77.8	77.7	-0.1	NO
333	Sand Canyon. Av.	s/o Roosevelt	78.0	78.0	0.0	NO
334	Sand Canyon. Av.	n/o I-5 NB Ramps	78.7	78.7	0.0	NO
335	Sand Canyon. Av.	b/w I-5 SB Ramps and Burt Rd.	72.8	72.9	0.1	NO
336	Sand Canyon. Av.	b/w Burt Rd. and Oak Cyn./Laguna Cyn. Rd.	72.9	72.9	0.0	NO
337	Sand Canyon. Av.	n/o ICD	71.9	72.0	0.1	NO
338	Sand Canyon. Av.	s/o Waterworks Wy.	71.5	71.5	0.0	NO
339	Sand Canyon. Av.	s/o Barranca Pkwy.	71.5	71.6	0.1	NO
340	Sand Canyon. Av.	b/w Alton Pkwy.and I-405 NB Ramps	71.8	71.8	0.0	NO
341	Santa Maria Av.	s/o Moulton Pkwy.	63.0	63.0	0.0	NO
342	Santa Maria Av.	e/o Laguna Canyon Rd.	59.8	59.8	0.0	NO
343	Santiago Canyon Rd.	e/o SR-241 NB Ramp	67.2	67.3	0.1	NO
344	Scientific Wy.	s/o ICD	56.7	56.7	0.0	NO
345	Spectrum	w/o Fortune Dr.	53.9	54.1	0.2	NO
346	Sterling	b/w Rockfield BI and Barrana Pkwy	55.1	n/a	n/a	n/a
347	Technology Dr.	e/o Barranca Pkwy.	67.5	67.6	0.1	NO
348	Technology Dr.	w/o Barranca Pkwy.	66.4	66.4	0.0	NO
349	Technology Dr.	e/o Laguna Canyon Rd.	65.7	65.6	-0.1	NO
350	Toledo Wy.	e/o Alton Pkwy.	61.1	62.4	1.3	NO
351	Toledo Wy.	w/o Lake Forest Dr.	61.3	61.5	0.2	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
			2011	2012		
			Approved	Modified	Option 2	Potential
			Project	Project	Project	Significant
ID	Roadway	Segment	(Baseline)	(Option 2)	Contribution	Impact? <sup>1</sup>
352	Toledo Wy.	w/o Ridge Route Dr.	60.5	60.4	-0.1	NO
353	Toledo Wy.	e/o Ridge Route Dr.	62.6	62.6	0.0	NO
354	Trabuco Rd.	b/w Culver Dr. and I-5 NB Ramps	70.2	70.3	0.1	NO
355	Trabuco Rd.	e/o I-5 NB Ramps	67.7	67.8	0.1	NO
356	Trabuco Rd.	w/o Jeffrey Rd.	67.1	67.2	0.1	NO
357	Trabuco Rd.	e/o Jeffrey Rd.	67.2	67.3	0.1	NO
358	Trabuco Rd.	e/o Sand Canyon	68.5	68.4	-0.1	NO
359	Trabuco Rd.	e/o Bake Pkwy.	69.3	69.3	0.0	NO
360	Trabuco Rd.	b/w Lake Forest Dr.and Ridge Route Dr.	70.4	70.4	0.0	NO
361	Trabuco Rd.	w/o El Toro Rd.	70.9	70.9	0.0	NO
362	Trabuco Rd.	e/o El Toro Rd.	67.3	67.3	0.0	NO
363	Trabuco Rd.	n/o Alicia Pkwy.	67.8	67.7	-0.1	NO
364	Trabuco Rd.	s/o Alicia Pkwy.	64.9	64.9	0.0	NO
365	Tustin Ranch Rd.	w/o Jamboree	65.6	65.5	-0.1	NO
366	Tustin Ranch Rd.	s/o Portola Pkwy.	69.8	69.8	0.0	NO
367	Tustin Ranch Rd.	n/o La Colina Dr.	69.8	69.8	0.0	NO
368	Tustin Ranch Rd.	s/o Irvine BI.	69.4	69.3	-0.1	NO
371	Walnut Av.	e/o Jamboree	69.3	69.3	0.0	NO
372	Walnut Av.	w/o Culver Dr.	68.5	68.6	0.1	NO
373	Walnut Av.	e/o Culver Dr.	68.5	68.5	0.0	NO
374	Walnut Av.	e/o Yale Av.	65.5	65.5	0.0	NO
375	Walnut Av.	w/o Jeffrey Rd.	67.3	67.3	0.0	NO
376	Warner Av.	w/o Paseo Westpark	64.7	64.8	0.1	NO
377	Warner Av.	w/o Culver Dr.	64.6	64.6	0.0	NO
378	Warner Av.	b/w Culver Dr.and W. Yale Loop	64.8	64.9	0.1	NO
379	W. Yale Loop	s/o Barranca Pkwy.	62.4	62.5	0.1	NO
380	W. Yale Loop	s/o Alton Pkwy.	65.3	65.3	0.0	NO
381	Yale Av.	b/w Portola and Arborwood	57.1	57.1	0.0	NO
382	Yale Av.	b/w Park PI. and Irvine BI.	65.1	65.1	0.0	NO
383	Yale Av.	n/o Bryan Av.	63.7	63.7	0.0	NO
384	Yale Av.	n/o Trabuco Rd.	64.3	64.4	0.1	NO
385	Yale Av.	n/o Walnut Av.	64.5	64.6	0.1	NO
386	Yale Av.	s/o Walnut Av.	65.1	65.2	0.1	NO
387	Yale Av.	b/w Deerfield Dr. and ICD	65.5	65.5	0.0	NO
388	Yale Av.	b/w ICD and Yale Lp.	64.8	64.9	0.1	NO
389	Thomas	n/o Muirlands Bl.	52.5	52.5	0.0	NO
390	Thomas	s/o Muirlands Bl.	59.1	59.7	0.6	NO



#### Post-2030 With 2012 Modified Project Option 2 Off-Site Project Related Traffic Noise Impacts

			CNEL at 100 Feet (dBA)			
ID	Roadway	Segment	2011 Approved Project (Baseline)	2012 Modified Project (Option 2)	Option 2 Project Contribution	Potential Significant Impact? <sup>1</sup>
391	Irvine Bl.	e/o Fairbanks	72.1	72.0	-0.1	NO
392	Fairbanks	e/o Alton Pkwy.	59.1	59.8	0.7	NO
393	Fairbanks	w/o Alton Pkwy.	55.9	59.7	3.8	NO
394	Fairbanks	s/o Astor St.	50.2	56.8	6.6	NO
395	Fairbanks	w/o Irvine BI.	59.9	64.1	4.2	NO

<sup>1</sup> A significant impact is considered when noise levels exceed 65 dBA CNEL and the project creates an increase greater than 1.5 dBA.



three off-site study area roadway segments are expected to experience a noise level increase of greater than 3 dBA are located within the Tri-Pointe Business Park and outside the noise sensitive residential areas.

## 7.3 Off-Site Traffic Noise Impact Summary

Table 7-3 presents a summary of the unmitigated exterior off-site traffic noise levels for the 395 study area roadway segments analyzed. For both the 2011 Approved Project and the 2012 Modified Project, a total of 10 segments are expected to experience an unmitigated exterior noise level that exceeds 75 dBA CNEL at a distance of 100 feet from centerline. The unmitigated 70 dBA CNEL exterior noise level is expected to be exceeded on 135 segments for the 2011 Approved Project and on 137 segments for the 2012 Modified Project. The unmitigated 65 dBA CNEL exterior noise level is expected to be exceeded on 321 segments for the 2011 Approved Project and on 322 segments for the 2012 Modified Project.

However, in each case, the project-related traffic noise increases generated by the 2012 Modified Project are less than 1.5 dBA (with the exception of the three off-site roadway segments located in the Tri-Pointe Business Park which is not a sensitive receptor) and thus do not exceed the significance thresholds. Consequently, the 2012 Modified Project's traffic noise impacts on the surrounding communities will be less than significant. This analysis shows that the 2012 Modified Project will NOT create a substantial permanent increase in traffic-related noise levels or expose persons to noise levels in excess of the exterior noise level standards established in the General Plan Noise Element.

The stationary-source noise impacts expected within the 2012 Modified Project are consistent with those for identified in the 2011 Approved Project. Additionally, noise associated with these sources is not expected to exceed the City's noise standards and in some cases, such as with certain neighborhood park activities, may be considered exempt.



#### Table 7-3

## Off-Site Traffic Noise Impact Analysis Summary

Condition	Scenario	Number of Segments Analyzed	Number o 75 dBA CNEL	f Segments E 70 dBA CNEL	xceeding <sup>1</sup> 65 dBA CNEL	Number of Segments With Potential Significant Impact <sup>2</sup>
	2011 Approved Project (Baseline)		10	135	321	
Post-2030	2012 Modified Project (Option 1)	395	10	137	322	0
	2012 Modified Project (Option 2)		10	137	322	0

<sup>1</sup> Segments exceeding the off-site unmitigated exterior noise levels estimated at a distance of 100 feet from the roadway centerline.

<sup>2</sup> Roadway segments exceeding 65 dBA CNEL with a project generated noise level increase of greater than 1.5 dBA.



The 2012 Modified Project includes an option to convert up to 535,000 square feet of the proposed Multi-Use intensity to residential intensity for up to an additional 889 dwelling units within District 6 and Lot 48 of 2nd Amended VTTM 17008, and up to 311 DB Units granted pursuant to state law. The optional conversion could result in a maximum of 5,806 additional dwelling units, including DB Units. Although minor changes in roadway volumes on specific segments could result from this option, these changes would not significantly alter the projected noise levels identified herein. A 3dB increase in noise volumes, which is the threshold for significance, would require a doubling of traffic on a specific roadway segment. Because of the proposed restriction on conversion of Multi Use and the trip limitation set forth in the zoning code, a doubling of traffic volumes on a roadway segment is not possible even with the DB Units which are not subject to the trip limit. In addition, PPP 8-2 requires submittal of a final acoustical report to demonstrate that the development will be sound attenuated against present and projected noise levels on-site including stationary, roadway, aircraft, helicopter, and railroad noise to meet City interior and exterior noise standards. Therefore, the 2012 Modified Project with Optional Conversion is not anticipated to result in any significant noise impacts.


## 8.0 OFF-SITE CONSTRUCTION NOISE ANALYSIS

The City does not regulate noise levels from construction activities so long as those activities occur between the hours of 7:00 a.m. to 7:00 p.m. Mondays through Fridays and between 9:00 a.m. to 6:00 p.m. on Saturdays (see discussion of Noise Ordinance in Section 4.5).

Construction noise creates a temporary impact on the ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels. Grading activities typically represent one of the highest potential sources for noise impacts. The most effective method of controlling construction noise is through local control of construction hours and by limiting the hours of construction to normal weekday working hours.

The 2011 Certified EIR concluded that the 2011 Approved Project would not result in any significant construction noise impacts. To identify potential construction noise impacts, a detailed noise analysis was performed using a typical mix of equipment type, quantity, normal utilization at full power and the hours of operation within the Proposed Project Site. This construction information was used in combination with the FHWA's Roadway Construction Noise Model (RCNM) to estimate the off-site construction noise impacts. The results of the construction noise analysis indicate that the Modified Project's off-site construction noise levels would range from 77.5 to 89.4 dBA Leq at a distance of 100 feet.

With the development of the Portola Springs community, the closest off-site noise-sensitive receptors were located immediately adjacent to the Proposed Project Site, at a distance of approximately 100 feet.



#### 8.1 <u>Construction Noise Levels</u>

In January 2006, the Federal Highway Administration (FHWA) published a national database of construction equipment reference noise emission levels. This database, which is included as part of the Roadway Construction Noise Model (RCNM) [3], as shown in Appendix 8.1 to this report, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction operation. Noise levels generated by heavy construction equipment can range from approximately 70 dBA to in excess of 100 dBA when measured at 50 feet. However, these noise levels diminish with distance from the construction site at a rate of 6 dBA per doubling of distance [3]. For example, a noise level of 78 dBA measured at 50 feet from the noise source to the receptor would be reduced to 72 dBA at 100 feet from the source to the receptor.

To identify the potential construction noise level impacts of the 2012 Modified Project, a detailed noise analysis was performed using information related to the Project Applicant's assumptions regarding equipment type, quantity, and typical utilization at full power, the hours of operation and construction related activity type. The construction information is used with the FHWA's RCNM [3], to estimate the off-site construction noise impacts as shown in Table 8-1.

The results of the construction noise analysis indicate that the 2012 Modified Project's offsite construction noise levels will range from 82.3 to 89.4 dBA Leq at a distance of 100 feet. Each construction-related activity is described in more detail below. Construction noise calculations for each activity are provided in Appendix 8.2 to this report.



#### Table 8-1

#### Construction Noise Impact Analysis Summary<sup>1,2</sup>

Construction Related Activity Noise Level Impacts at 100 feet (dBA Leq)					
Demolition	Site Preparation	Grading	Paving	Building Construction/ Coating	Maximum Reference Noise Level
88.3	82.6	89.4	82.3	86.3	89.4

<sup>1</sup> Noise levels at a distance of 100 feet from construction activity.

<sup>2</sup> Construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts. It is expected that receptors will experience temporary, short-term impacts.



#### 8.1.1 <u>Demolition</u>

Construction within the Proposed Project Site will include demolition activities. During this phase of construction, the main emphasis will be on removal of the existing runways and other existing buildings and structures. Equipment used during demolition activities includes concrete and industrial saws, excavators, and rubber tire dozers. Table 8-1 shows that during demolition, noise levels at the nearest sensitive receptor are estimated at 88.3 Leq at a distance of 100 feet from the District boundaries.

## 8.1.2 Site Preparation

Construction within the Proposed Project Site will include site preparation activities. During this phase of construction, the main emphasis will be on removal of nonstructural materials and the import and export of dirt, where necessary. Equipment used during site preparation activities includes rubber tire dozers, tractors, loaders, and backhoes. Table 8-1 shows that during site preparation activities, noise levels are estimated at 82.6 dBA Leq when activities occur at a distance of 100 feet from the District boundaries.

#### 8.1.3 Grading

Construction within the Proposed Project Site will include grading activities. During this phase of construction, the main emphasis will be on grading each portion of each site within each District according to approved grading plans. Equipment used during grading activities includes excavators, graders, rubber tire dozers, scrapers, tractors, loaders, and backhoes. Table 8-1 shows that during grading activities, noise levels at the nearest noise-sensitive receptors are estimated at 89.4 dBA Leq when activities occur at a distance of 100 feet from the District boundaries. Grading activities are generally expected to produce the highest construction noise impacts.



#### 8.1.4 Paving

Construction within the Proposed Project Site will include paving activities. During this phase of construction, the main emphasis will be on paving roadways, parking lots, and other surfaces. Equipment used during paving activities includes pavers, rollers, and other miscellaneous paving equipment. Table 8-1 shows that during paving activities, noise levels at the nearest noise-sensitive receptors are estimated at 82.3 dBA Leq when activities occur at a distance of 100 feet from the District boundaries.

## 8.1.5 Building Construction and Coating

Construction within the Proposed Project Site will include building construction and coating activities. During this phase of construction, the main emphasis will be on the construction of buildings and homes. Equipment used during building construction and coating activities includes cranes, forklifts, generators, tractors, loaders, backhoes, welders, and air compressors. Table 8-1 shows that during building construction and coating activities, noise levels at the nearest noise-sensitive receptors are estimated at 86.3 dBA Leq when activities occur at a distance of 100 feet from the District boundaries.

## 8.2 <u>Control of Construction Hours</u>

Construction activities are restricted by Section 6-8-205(a) of the Irvine Municipal Code, which states that construction activities may occur only between 7:00 AM and 7:00 PM Mondays through Fridays, and 9:00 AM and 6:00 PM on Saturdays. No construction activities are permitted outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the Chief Building Official or his or her authorized representative. Trucks, vehicles, and equipment that are making, or are involved with, material deliveries, loading, or transfer of materials, equipment service, maintenance of any devices or appurtenances for or within any construction project in the City may not be operated or driven on City streets outside of these hours or on Sundays and federal holidays unless a temporary waiver is granted by the City. Any waiver granted shall take impact upon the community into consideration. No construction activity will be permitted



outside of these hours except in emergencies including maintenance work on the City rights-of-way that might be required.

#### 8.3 <u>Construction Noise Project Design Features</u>

Like the 2011 Approved Project, the 2012 Modified Project incorporates project design features intended to reduce noise impacts from construction activities adjacent to any developed/occupied noise-sensitive land uses. To ensure that the potential construction noise levels are minimized by these project design features, the project design features will also be included as mitigation measures. The project design features include the following measures:

- During all construction, all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, consistent with manufacturers' standards. All stationary construction equipment shall be placed so that emitted noise is directed away from the noise-sensitive receptors nearest the Proposed Project Site boundaries.
- Equipment shall be staged in areas that will create the greatest distance between construction-related noise sources and the noise-sensitive receptors nearest the Proposed Project Site during all project construction.
- All construction-related activities shall be restricted to the construction hours outlined in the City's Noise Ordinance (Municipal Code Section 6-8-205).
- Haul truck and other construction-related trucks traveling to and from the Proposed Project Site shall be restricted to the same hours specified for the operation of construction equipment. To the extent feasible, haul routes shall not pass directly by sensitive land uses or residential dwellings.
- Where construction will occur adjacent to any developed/occupied noise-sensitive uses, a construction-related noise mitigation plan shall be submitted to and approved by the Director of Community Development for review and approval prior to issuance of grading permits. The plan must depict the location of construction equipment and how the noise from this equipment will be mitigated during construction of the 2012 Modified Project, through the use of such methods as the



following: (1) temporary noise attenuation fences; (2) preferential location of equipment; and (3) use of current technology and noise suppression equipment.

 Planned sound walls that have been incorporated into the project design shall be installed prior to construction of the building foundations; or temporary sound blankets (fences typically composed of poly-vinyl-chloride-coated outer shells with absorbent inner insulation) shall be placed along the boundary of the Proposed Project Site facing the nearest noise-sensitive receptors during construction activities.

#### 8.4 <u>Conclusion</u>

High levels of construction noise are temporary, intermittent and of short duration, and do not create any long-term impacts. While the noise level impacts presented for each phase of construction are a "worst-case" scenario and may at times be audible over traffic-related noise level impacts surrounding each district, these high levels are not expected to be continuous. Moreover, these noise levels will occur only during the hours allowed by the City's Noise Ordinance, and will be reduced by the project design features incorporated into the 2012 Modified Project; to ensure that these project design features are in fact incorporated, they are also included as mitigation measures. As such, the 2012 Modified Project's construction noise impacts will be less than significant.



## 9.0 AIRCRAFT NOISE IMPACTS

The Proposed Project Site is located approximately 6 miles east of the John Wayne Airport. The Proposed Project Site is well outside the 60 dBA CNEL noise contours associated with the aircraft operations at John Wayne Airport. The year 2010 noise contours for the John Wayne Airport provided by Mestre-Greve and Associates are presented in Exhibit 9-A.



# YEAR 2010 AIRPORT NOISE CONTOURS





# **10.0 REFERENCES**

- 1. *Heritage Fields Project 2012 General Plan / Zone Change Traffic Impact Analysis,* prepared by Urban Crossroads, Inc. in May 2012.
- 2. Great Park Neighborhoods General Plan Amendment/Zone Change Noise Impact Analysis prepared by Urban Crossroads on May 25, 2011 (the "2011 Noise Study")
- 3. *FHWA Roadway Construction Noise Model*, U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, January 2006.
- 4. *Municipal Code*, City of Irvine 2009. Title 6, Division 8, Chapter 2, Noise (Sections 6-8-201 through 6-8-209)
- 5. *Technical Noise Supplement A Technical Supplement to the Traffic Noise Analysis Protocol,* Sacramento, CA: California Department of Transportation Environmental Program, October 1998.
- 6. *General Plan Noise Element F Noise*, City of Irvine, CA, June 13, 2006.
- 7. *Acoustical Report Information Sheet*, Acoustical Report Requirements Form 42-48, rev 11/109, City of Irvine, CA.
- 8. *Highway Traffic Noise Analysis and Abatement Policy and Guidance,* U.S. Department of Transportation, Federal Highway Administration, Office of Environment and Planning, Noise and Air Quality Branch, June 1995.
- 9. Noise Modeling and Measurement Guidelines, City of Irvine, 221-244/#8
- 10. Environmental Protection Agency, "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," Report. No. 550/9-74-004, Washington DC, March 1974.
- 11. *State of California General Plan Guidelines 2003*, Office of Planning and Research General Plan Guidelines, October 2003.
- 12. FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, December 1978.
- 13. *Land Use/Noise Compatibility Manual*, County of Orange Amendment 93-1: December 14, 1993.

