Oceanside Circulation Element Update

Appendix B

Combined Impact Analysis, Acoustical/Air Quality/Greenhouse Gas

Prepared by Investigative Science and Engineering, Inc.

March 9, 2011

COMBINED IMPACT ANALYSIS
ACOUSTICAL / AIR QUALITY / GREENHOUSE GAS
OCEANSIDE MASTER TRANSPORTATION PLAN
OCEANSIDE, CA

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BACKGROUND / PURPOSE AND NEED

This report examines potential noise, air quality, and greenhouse gas impacts at a screening level of analysis due to proposed traffic circulation changes associated with the City of Oceanside Master Transportation/Circulation Element update. Findings are made with respect to the identification of the environmentally preferred scenario as defined under California Environmental Quality Act (CEQA) Guidelines 15126.6 based upon the proposed traffic plan and all alternatives.

Existing Circulation Element Characterization

The study area consists of the boundaries of the incorporated City of Oceanside as shown in Figure 1 on the following page. The baseline traffic circulation scenario is currently identified in the adopted 1995 Circulation Element and General Plan Amendments. The key network design elements, which are representative of the 1995 Circulation Element, consists of the following attributes:

- State Route 76 (SR76) is six Lanes to Melrose Drive,
- Rancho Del Oro Road / State Route 78 (SR78) interchange is included,
- College Boulevard is six lanes,
- Melrose Drive between North River Road to SR76 is included,
- Melrose Drive between Spur Avenue to North Santa Fe Avenue is included, and,
- Pala Road is connected to Foussat Road.

Proposed Circulation Element Design Alternatives

Based on an initial screening assessment of five different scenarios by the City and project traffic engineer[1], the network elements of major concern for the residents of Oceanside were determined to be:

- Melrose Drive Extensions (SR76 to N. River Rd; Spur Ave to N. Santa Fe Ave.)
- Rancho Del Oro Rd/SR78 Interchange, and,
- College Boulevard (Avenida de la Plata to Waring Rd).

Throughout the aforementioned selection process by the traffic engineer, two additional studies were conducted to determine their effect on the Circulation Element network. These included Coast Highway as a two-lane roadway with roundabouts at key intersections and Mission Avenue as a one-way two-lane couplet between Cleveland Street and Clementine Street. These two projects were determined by the City to be necessary to include in the final network alternatives selected.

[1] Source: Draft Traffic Impact Analysis Report – City Of Oceanside Master Transportation Plan, IBI Group, Inc., 2/11.

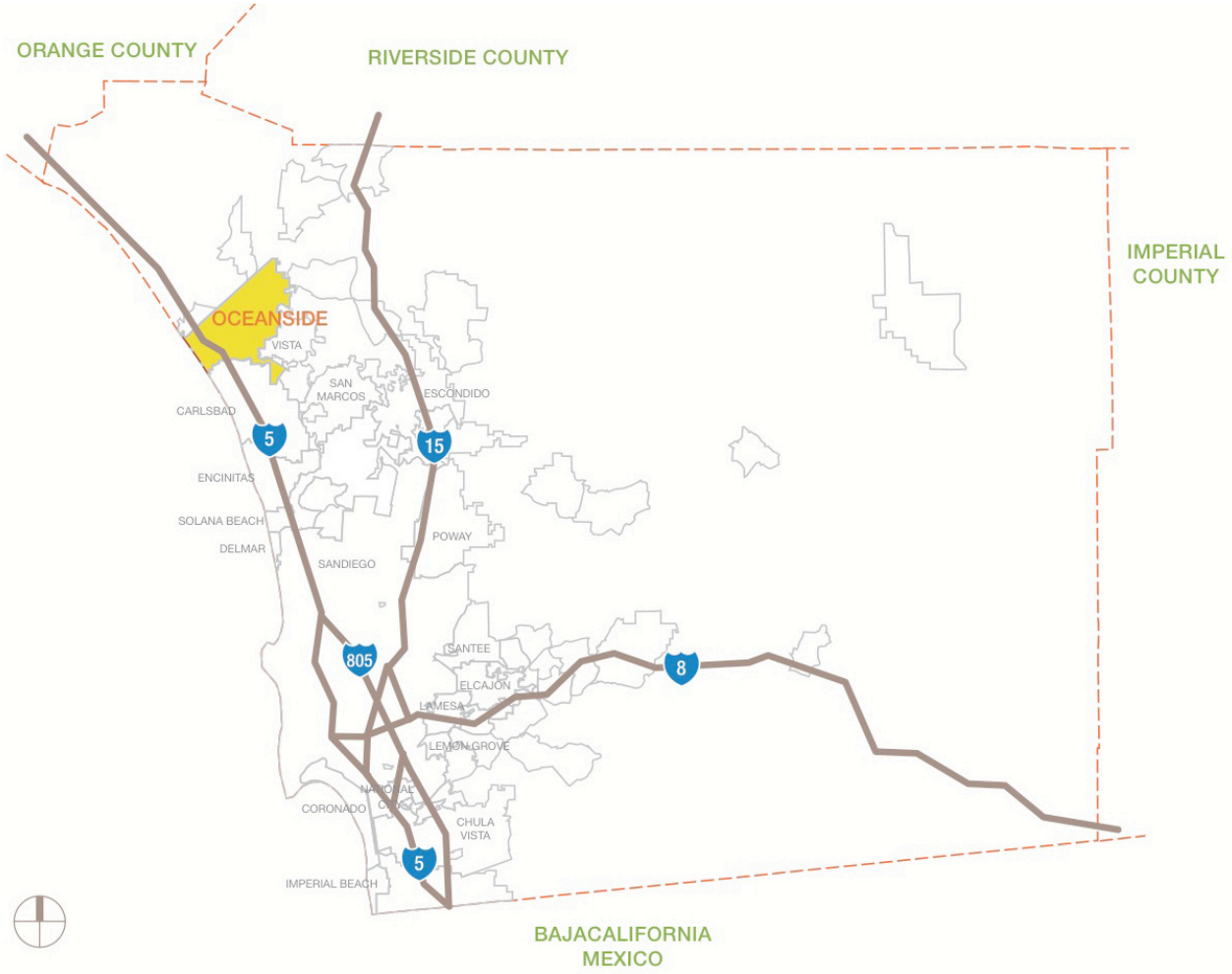

FIGURE 1: Project Study Area Vicinity Map (IBI Group 2/11)

Given this, the following alternatives were selected by City staff for environmental review and analysis:

Alternative 1: Alternative 1 (shown in Figure 2a below) assumes that Mission Avenue would be reconfigured as a one-way two-lane couplet between Cleveland and Clementine Streets with SR76 remaining as six-lanes. The Rancho Del Oro Road/SR78 interchange is included. College Boulevard is an assumed hybrid of four and six lanes. The Melrose Drive northern extension between North River Road and SR76 is not included under this alternative; however, the southern extension between Spur Avenue and North Santa Fe Avenue is included. The Pala Road connection to Foussat Road is included while the Old Ranch Road connection and Jeffries Ranch Road connection to SR76 is not.

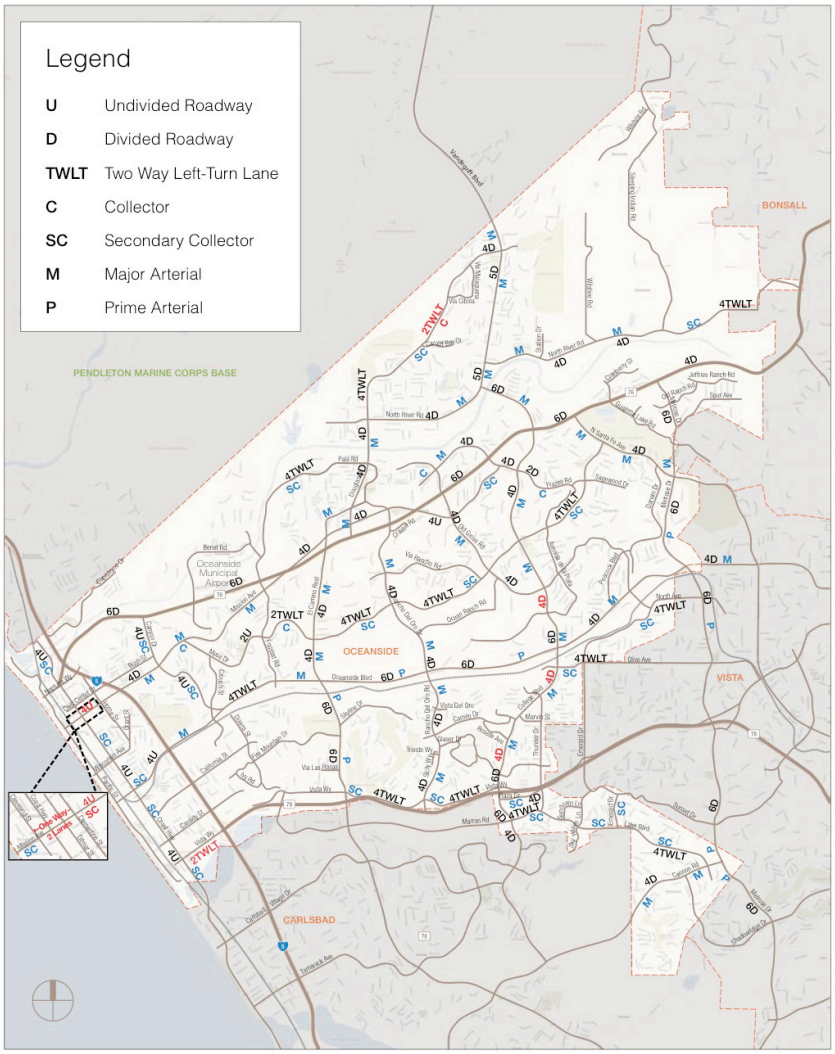

FIGURE 2a: Roadway Network Defined under Alternative 1 (IBI Group 2/11)

Alternative 2: Alternative 2 (shown in Figure 2b below) assumes that Mission Avenue between Cleveland and Clementine Streets would be a four-lane secondary collector and not a four-lane major as is currently shown in the Circulation Element. Coast Highway would have two lanes between Harbor Drive and the southern City limits with roundabouts at key intersections. SR76 would remain as six-lanes. This alternative assumes that the Rancho Del Oro Road/SR78 Interchange would not be included. College Boulevard is taken as a hybrid of four and six lanes. The Melrose Drive extensions between North River Road, SR76, Spur Avenue, and North Santa Fe Avenue are not included, nor is the Pala Road connection to Foussat Road. Old Ranch Road connection and Jeffries Ranch Road connection to SR76 would also not be included.

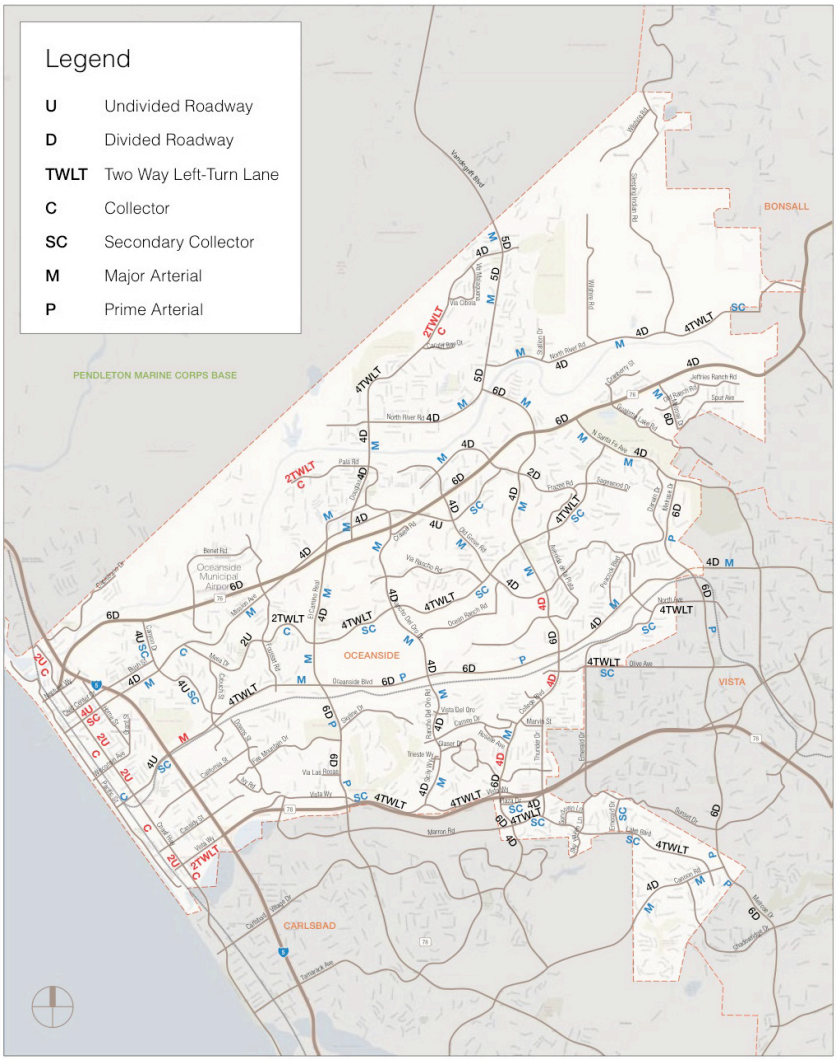

FIGURE 2b: Roadway Network Defined under Alternative 2 (IBI Group 2/11)

Roadway Segments Examined Under This Assessment

The roadway segments within the City of Oceanside that are examined within this report are indicated below.[2] Items of note include existing roadway geometry, pertinent bicycle facilities, adjacent land uses, and the current City of Oceanside Circulation Element roadway classification designation.

Cannon Road Major arterial between the western city limits and Melrose Drive. It is a four- lane divided roadway that transitions to a two-lane divided roadway west of Leisure Village Drive. Cannon Road primarily provides access to commercial and retail shopping centers and connecting residential streets. Class II bicycle lanes are striped along both sides of the street within the city limits and on-street parking is not permitted. It currently does not connect to Cannon Road in the City of Carlsbad.

Canyon Drive Secondary collector between SR76 and Mission Avenue and a collector with a two-way left-turn lane between Mission Avenue and Oceanside Boulevard. It primarily provides access to residential neighborhoods. It is a four-lane undivided roadway between SR76 and Mission Avenue and a two-lane roadway with a continuous two-way left turn lane between Mission Avenue and Oceanside Boulevard. Class II bicycle lanes are striped along both sides of the street within the study area and on-street parking is permitted intermittently between Loma Alta Drive and Crouch Street.

Coast Highway Collector between Harbor Drive and SR76 and a secondary collector with left turn pockets between SR76 and the southern City limits. It primarily provides access to commercial and retail shopping centers. It is a two-lane undivided roadway between Harbor Drive and SR76 and a four-lane undivided roadway between SR76 and the southern City limits. There are no designated bicycle lanes but on-street parking is permitted.

College Boulevard Major arterial and provides access to retail/commercial centers and residential neighborhoods. It is a six-lane divided roadway between N. River Road and SR76 (except on the bridge over the San Luis Rey River), a four-lane divided roadway between SR76 and Waring Road, and a six-lane divided roadway between Waring Road and the southern city limits. Class II bicycle lanes are striped along both sides of the street within the study area and on street parking is permitted between Thunder Drive and Roselle Street.

Douglas Drive Secondary collector between North River Road and Vandegrift Boulevard and a major arterial between North River Road and SR76. It is a four-lane roadway with a two-way left turn lane between Vandegrift Boulevard and Via Malaguena, and it has a two-way left turn lane or striped median between Via Malaguena and North River Road. It is divided between North River Road and El Camino Real. There is a two-way left turn lane or striped median between El Camino Real and SR76. Class II bicycle lanes are provided on both sides of the street between Vandegrift Boulevard and Mission Avenue. On-street parking is not permitted

El Camino Real Major arterial between Douglas Drive and Oceanside Boulevard and a prime arterial between Oceanside Boulevard and SR78. It provides access to retail/commercial centers and residential neighborhoods. It is a four-lane roadway with a continuous two-way left turn lane between Douglas Drive and Mission Avenue, a four-lane divided roadway between Mission Avenue and Oceanside Boulevard, and a six-lane divided roadway between Oceanside Boulevard and SR78. Class II bicycle lanes are striped along both sides of the street and on-street parking is not permitted.

[2] Source: IBI Group, Inc., 2/11.

Emerald Drive Secondary collector between Sunset Drive and Lake Boulevard. It is a four- lane roadway with a continuous center two-way left-turn lane. Emerald Drive provides access to residential neighborhoods. Class II bicycle lanes are striped on both sides of the street and on- street parking is not permitted.

Frazee Road Major arterial between Old Grove Road and College Boulevard and a collector road between College Boulevard and Sagewood Drive and west of Old Grove Road. It is a four- lane divided roadway between Old Grove Road and College Boulevard that primarily provides access to residential neighborhoods. Class II bicycle lanes are striped on both sides of the street and on-street parking is not permitted.

Lake Boulevard Secondary collector that provides access to residential neighborhoods and retail/commercial centers. It is a four-lane roadway with a continuous two-way left-turn lane; however, it is a two-lane roadway with a continuous two-way left-turn lane between Thunder Drive and Sundown Lane. Class II bicycle lanes are striped on both sides of the street. On-street parking is permitted between Thunder Drive and Sundown Lane.

Melrose Drive Major arterial between SR76 and Spur Avenue, an unimproved two-lane roadway between North Santa Fe Avenue and Sagewood Drive, a four-lane divided roadway between Sagewood Drive and Meadowbrook Drive and a two-lane unimproved roadway between Meadowbrook Drive and Oceanside Boulevard. It is five lanes (three southbound, two northbound) from Oceanside Boulevard to south of the railroad tracks and transitions to four- lanes within the City of Vista to SR78. It is a six-lane divided roadway within the city limits both north and south of Cannon Road. Class II bicycle lanes are striped on both sides of the street and on- street parking is not permitted.

Mesa Drive Collector between Mission Avenue and Foussat Road and a secondary collector between Foussat Road and N. Santa Fe Avenue. It provides access to residential neighborhoods. It is a two-lane undivided roadway between Mission Avenue and just east of Foussat Road, and a two-lane roadway with a continuous two-way left-turn lane just east of Foussat Road to El Camino Real. It is four-lanes with a continuous two-way left-turn lane east of El Camino Real with raised medians just east and west of Rancho Del Oro Road. The two-way left-turn lane continues east of Rancho Del Oro Road to Via Empressa where it becomes a divided roadway with medians to College Boulevard. It is a four-lane roadway with a continuous two-way left- turn lane east of College Boulevard to N. Santa Fe Avenue. Class II bicycle lanes are striped along both sides of the street between Foussat Road and N. Santa Fe Avenue. On-street parking is not permitted.

Mission Avenue Secondary collector between Pacific Street and Horne Street and a major arterial between Horne Street and just west of Rancho Del Oro Road. It provides access to commercial and retail shopping centers and districts. It also provides access to the beach and Oceanside Pier parking lots. Mission Avenue is a four-lane divided roadway between Pacific Street and Cleveland Street, a four-lane undivided roadway between Cleveland Street and Horne Street, and a four-lane divided roadway from Horne Street to just west of Rancho Del Oro Road. Mission Avenue becomes a two lane divided road between just west of Rancho Del Oro Road and west of Old Grove Road. It is a four-lane divided roadway west of Old Grove Road to Frazee Road and two lanes between Old Grove Road and Valley Heights Road is only two-lanes. Class II bicycle lanes are striped along both sides of the street between I-5 and Frazee Road and on-street parking is not permitted.

North Avenue Secondary collector that serves a connection to the City of Vista. It is a two-lane undivided roadway between Olive Drive and Seasons Road, a two-lane center continuous left-turn lane from Seasons Road to just west of Maryland Drive, and primarily a two-lane undivided roadway between Maryland Drive and Melrose Drive. Class II bicycle lanes are provided on western/southern side of North Avenue between Olive Drive and Seasons Drive and on both sides between Seasons Drive and Lee Drive and on the southern side between Lee Drive and Maryland Drive. On- street parking is not permitted except between Lee Drive and Maryland Drive.

North River Road	Major arterial between Douglas Drive and Vandegrift Boulevard and a collector east of Vandegrift Boulevard to the city limits. It primarily provides access to residential neighborhoods. It is a four-lane divided roadway between Douglas Drive and Vandegrift Boulevard, a continuous two-lane with two-way left turn lane between Vandegrift Boulevard and Stallion Drive and a two-lane undivided roadway between Stallion Drive and the eastern city limits. Class II bicycle lanes are striped along both sides of the street between Douglas Drive and College Boulevard. On-street parking is not permitted.
North Santa Fe Avenue	Major arterial between SR76 and the eastern city limits. It primarily provides access to residential neighborhoods. It is a four-lane divided roadway between SR76 and the eastern city limits. Class II bicycle lanes are striped on both sides of the street between Mesa Drive and Melrose Drive. On-street parking is not permitted.
Oceanside Boulevard	Collector between Pacific Street and Coast Highway, a secondary collector between Coast Highway and El Camino Real, a prime arterial between El Camino Real and College Boulevard, and a major arterial between College Boulevard and the eastern city limits. It provides access to industrial, residential, and retail/commercial centers. It is a two-lane undivided roadway between Pacific Street and Coast Highway, a four-lane undivided roadway between Coast Highway and I-5, a four-lane roadway with a continuous two-way left turn lane between I-5 and El Camino Real, a six-lane undivided roadway between El Camino Real and Rancho Del Oro Road, a six-lane divided roadway between Rancho Del Oro Road and College Boulevard, and a four-lane divided roadway between College Boulevard and the eastern city limits. Class II bicycle lanes are provided on both sides of the street and on-street parking is not permitted.
Old Grove Road	Collector north of Frazee Road, a major arterial between Frazee Road and College Boulevard, and a collector between College Boulevard and Pine Ridge Road. It provides access to residential neighborhoods, retail/commercial centers, and to the Rancho Del Oro Industrial Park. It is a two-lane undivided roadway north of Frazee Road, a four-lane divided roadway between Frazee Road and College Boulevard, and a two-lane divided roadway between College Boulevard and Pine Ridge Road. There are Class II bicycle lanes striped along both sides of the street and on-street parking is not permitted.
Olive Drive	Secondary collector that primarily provides access to residential neighborhoods and serves as a connection to the City of Vista. It is a four-lane roadway with a center continuous two-way left-turn lane. There are no designated bicycle lanes and on-street parking is not permitted.
Pala Road	Secondary collector roadway from Douglas Drive to its westerly terminus and a collector east of Douglas Drive. It primarily provides access to residential neighborhoods. It is a two-lane roadway with a continuous two-way left turn lane. Class II bicycle lanes are striped along both sides of the street within the study area and on-street parking is not permitted. It currently does not connect to Foussat Road.
Plaza Drive	Secondary collector to just east of SR78 Eastbound on/off-ramps. It provides access to retail/commercial centers and access to the SR78 and the City of Vista. It is primarily a four-lane divided roadway between College Boulevard and just west of the SR78 Eastbound on/off ramp. It is unimproved from just east of SR78 Eastbound on/off-ramps to just west of Thunder Drive. From Thunder Drive to the eastern city limits, it is three lanes (two eastbound and one westbound) with a continuous two-way left-turn lane. There are no designated bicycle lanes within the study area, and on-street parking is not permitted.
Rancho Del Oro Drive/Road	Major arterial and primarily provides access to residential neighborhoods, a school, and Ocean Ranch Industrial Park. However, south of Oceanside Boulevard Rancho Del Oro Road does not operate as a four-lane major arterial but is more rural in character with stop controlled intersections leading to Vista Way with the exception of one traffic signal at Glaser Drive. It is a four-lane divided roadway. There are Class II bicycle lanes striped along both sides of the street and on-street parking is not provided.

Vandegrift Boulevard Major arterial and provides access to commercial shopping centers and residential neighborhoods. It is a five-lane divided roadway between College Boulevard and the back gate of Camp Pendleton with three lanes northbound and two lanes southbound between College Boulevard and Douglas Drive. It is two lanes northbound and three lanes southbound between Douglas Drive and the back gate of Camp Pendleton. Vandegrift Boulevard provides access to residential neighborhoods, small commercial shopping, and direct access to Camp Pendleton to the north. Class II bicycle lanes are striped along both sides of the street and on- street parking is not permitted.

Vista Way Secondary collector and provides access to residential neighborhoods and retail/commercial centers. It is a four-lane roadway with a continuous two-way left turn lane between Jefferson Street and the eastern city limits. Vista Way is a two-lane roadway with a continuous two-way left turn lane from Coast Highway to I-5/SR78 Interchange. Class II bicycle lanes are provided on both sides of the street and on-street parking is not permitted.

State Route 76 Expressway between I-5 and Melrose Drive and a major arterial east of Melrose Drive. It is a four-lane divided expressway between I-5 and Melrose Drive and a two- lane undivided roadway east of Melrose Drive. SR76 is currently under construction east of Melrose Drive to be widened to a four-lane roadway. Class II bicycle lanes are striped along both sides of the street within the study area and on-street parking is not permitted.

ENVIRONMENTAL RESOURCE DEFINITIONS

Acoustical Definitions and Theory

Sound waves are linear mechanical waves. They can be propagated in solids, liquids, and gases. The material transmitting such a wave oscillates in the direction of propagation of the wave itself. Sound waves originate from some sort of vibrating surface, which is alternately compressing the surrounding air on a forward movement, and expanding it on a backward movement.

Sound waves, if unimpeded, will spread out in all directions from a source. Upon entering the auditory organs, these waves produce the sensation of sound. Waveforms that are approximately periodic, or consist of a small number of periodic components, can give rise to a pleasant sensation (assuming the intensity is not too high), for example, as in a musical composition.

Noise, on the other hand, can be represented as a superposition of periodic waves with a large number of components, and is generally defined as unwanted or annoying sound that is typically associated with human activity, and which interferes with or disrupts normal activities. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance.

Airborne sound is a rapid fluctuation of air pressure, above and below atmospheric levels. The loudest sounds that the human ear can hear comfortably are approximately one trillion (or $1x10^{12}$) times the acoustic energy that the ear can barely detect. Because of this vast range, any attempt to represent the acoustic intensity of a particular sound on a linear scale becomes unwieldy. As a result, a logarithmic ratio, originally conceived for radio work, known as the decibel (dB), is commonly employed.[3]

A sound level of zero "0" dB is scaled such that it is defined as the threshold of human hearing, and would be barely audible to a human of normal hearing under extremely quiet listening conditions. Such conditions can only be generated in anechoic or "dead rooms". Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 decibels. Normal speech has a sound level of approximately 60 dB. Sound levels above 120 dB roughly correspond to the threshold of pain. The minimum change in sound level that the human ear can detect is approximately 3.0 dBA.[4]

The method commonly used to quantify environmental sounds, consists of determining all of the frequencies of a sound according to a weighting system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. For this type of noise, a single descriptor called the L_{eq} (or equivalent sound level) is used. L_{eq} is the energy-mean A-weighted sound level during a measured time interval, and would be defined mathematically by the following continuous integral,

$$L_{eq} = 10 Log_{10}\left[\frac{1}{T}\int_{0}^{T} SPL(t)^2\, dt\right]$$

where,

L_{eq} is the energy equivalent sound level,
t is the independent variable of time,
T is the total time interval of the event (typically taken as one hour),
and, SPL is the sound pressure level *re. 20 μPa*.

[3] A unit used to express the relative magnitude of a sound wave. This level is defined as being equal to 20 times the common logarithm of the ratio of the pressure produced by a sound wave of interest, to a 'reference' pressure wave equal to 20 micro Pascal's (μPa) measured at a distance of 1 meter. 20 μPa is the smallest amount of pressure capable of producing the sensation of hearing in a human.

[4] Every 3 dB equates to a 50% of drop (or increase) in wave strength; therefore a 6 dB drop/increase = a loss/increase of 75% of total signal strength and so on.

Finally, the City of Oceanside aggregates all community noise events into a single numerical value known as the Community Noise Equivalent Level (CNEL). This descriptor is calculated by averaging all L_{eq} events over a specified time interval and applying a 5-dBA penalty to sounds occurring between 7:00 p.m. and 10:00 p.m., and a 10-dBA penalty to sounds occurring between 10:00 p.m. and 7:00 a.m.

CNEL can be derived via the following expression:

$$CNEL = 10Log_{10}\frac{1}{n}\sum_{i=1}^{n}\left(10^{\frac{Leq(day)_i}{10}} + 10^{\frac{Leq(evening+5)_i}{10}} + 10^{\frac{Leq(night+10)_i}{10}}\right)$$

where,

$L_{eq}(x)_i$ is the equivalent sound level during period '*x*' at time interval 'i' and 'n' is the number of time intervals.

Air Quality Definitions and Background

Air quality is defined by ambient air concentrations of specific pollutants determined by the Environmental Protection Agency (EPA) to be of concern with respect to the health and welfare of the public. The subject class of pollutants, which are monitored by the EPA, are Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Ozone (O_3), respirable 10- and 2.5-micron particulate matter (PM_{10} and $PM_{2.5}$), Volatile Organic Compounds (VOC), Reactive Organic Gasses (ROG), Hydrogen Sulfide (H_2S), sulfates, lead, and visibility reducing particles.

Of interest to traffic circulation impact analysis due to their ability to produce photochemical 'smog' are the pollutants CO and NO_x while health concerns typically center around respirable 10- and 2.5-micron particulate matter (PM_{10} and $PM_{2.5}$). Examples of sources and effects of this subclass of pollutants are identified starting below as:

- Carbon Monoxide (CO): Carbon monoxide is a colorless, odorless, tasteless and toxic gas resulting from the incomplete combustion of fossil fuels. CO interferes with the blood's ability to carry oxygen to the body's tissues, and results in numerous adverse health effects. CO is a criteria air pollutant.

- Nitrogen Oxides (Oxides of Nitrogen, or NO_x): Nitrogen oxides (NO_x) consist of nitric oxide (NO), nitrogen dioxide (NO_2), and nitrous oxide (N_2O); these are formed when nitrogen (N_2) combines with oxygen (O_2). Their lifespans in the atmosphere range from one to seven days for nitric oxide and nitrogen dioxide, and 170 years for nitrous oxide. Nitrogen oxides are typically created during combustion processes, and are major contributors to smog formation and acid deposition. NO_2 is a criteria air pollutant, and may result in numerous adverse health effects. It absorbs blue light, resulting in a brownish-red cast to the atmosphere and reduced visibility.

- PM_{10} (Particulate Matter less than 10 microns): A major air pollutant consisting of tiny solid or liquid particles of soot, dust, smoke, fumes, and aerosols. The size of the particles (10 microns or smaller, about 0.0004 inches or less) allows them to easily enter the lungs, where they may be deposited, resulting in adverse health effects. PM_{10} also causes visibility reduction and is a criteria air pollutant.

- $PM_{2.5}$ (Particulate Matter less than 2.5 microns): A similar air pollutant consisting of tiny solid or liquid particles which are 2.5 microns or smaller (often referred to as fine particles). These particles are formed in the atmosphere from primary gaseous emissions that include sulfates formed from SO_2 release from power plants and industrial facilities, and nitrates that are formed from NO_x release from power plants, automobiles and other types of combustion sources. The chemical composition of fine particles highly depends on location, time of year, and weather conditions.

Greenhouse Gases and Global Warming Potential

Greenhouse gases are defined by the U.N. Intergovernmental Panel on Climate Change (IPCC) as those naturally occurring and anthropogenic chemical compounds within the atmosphere that absorb and reflect infrared radiation emitted by the Earth's surface.[5,6] A numerical metric known as the *'Global Warming Potential'* (GWP) is a measure of how much a given mass of greenhouse gas is estimated to contribute to global warming relative to pure carbon dioxide (CO_2) whose GWP is normalized at 1.0. This adjusted CO_2 level is known as *'equivalent CO_2'* or CO_{2e}. It is numerically equal to the amount of a given greenhouse gas times the GWP.

A complete listing of known greenhouse gases and their associated GWP is shown in Table 1, starting on the following page. Naturally occurring greenhouse gases include the aforementioned carbon dioxide (CO_2), water vapor (H_2O), methane (CH_4), nitrous oxide (N_2O), and ozone (O_3). In addition, several classes of halogenated substances that contain fluorine, chlorine, or bromine also demonstrate a 'greenhouse' gas potential. Examples of these pollutants are halocarbons, perfluorocarbons (PFC's), and sulfur hexafluoride (SF_6).

[5] The basic mechanism can be summarized as follows: 1) solar radiation heats the planet primarily through ultraviolet and higher energy transmission, 2) Earth gets warm and is offset by temperature levels in the oceans (which act as a global thermostat), 3) Earth emits black-body radiation in the lower infrared portion of the electromagnetic spectrum, 4) most of the infrared radiation escapes the planet in accordance with the First Law of Thermodynamics, 5) a small portion of the energy is captured through molecular motion changes within the atmospheric greenhouse gases, and 6) this captured energy re-radiates back toward Earth (and interstellar space) producing a secondary heating effect. However, despite its name, this is not the same mechanism by which a greenhouse operates.

[6] Source: *Climate Change 2001: The Scientific Basis*. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change, IPCC 2001.

TABLE 1: Known Greenhouse Gases and Global Warming Potential[7]

Pollutant Name	Chemical Formula	GWP Relative to CO_2 (100 year horizon)
Carbon Dioxide	CO_2	1
Dibromomethane	CH_2Br_2	1
R-13I1 (Trifluoroiodomethane)	FIC-13I_1	1
R-E170 (Dimethyl ether)	CH_3OCH_3	1
Methyl Bromide	CH_3Br	5
Dichloromethane	CH_2Cl_2	10
R-161 (HFC-161, Fluoroethane)	HFC-161	12
R-40 (Methyl Chloride)	CH_3Cl	16
Methane	CH_4	23
Chloroform	$CHCl_3$	30
2,2,3,3,3-Pentafluoro-1-propanol	$CF_3CF_2CH_2OH$	40
R-152 (HFC-152, 1,1-Difluoroethane)	HFC-152	43
2,2,2-Trifluoro-ethanol	$(CF_3)CH_2OH$	57
R-41 (HFC-41, Methyl fluoride)	HFC-41	97
R-123 (HCFC-123, Dichlorotrifluoroethane)	HCFC-123	120
R-152a (HFC-152a, 1,1-Difluoroethane)	HFC-152a	120
1,1,1-Trichloroethane	CH_3CCl_3	140
1,1,1,3,3,3-Hexafluoro-2-Propanol	$(CF_3)_2CHOH$	190
R-21 (Dichlorofluoromethane)	HCFC-21	210
Nitrous Oxide	N_2O	296
HFC-143, 1,1,2-Trifluoroethane	HFC-143	330
Methyl perfluoroisopropyl ether	$(CF_3)_2CFOCH_3$	330
Bromodifluoromethane	$CHBrF_2$	470
R-32 (HFC-32, Difluoromethane)	HFC-32	550
R-124 (HCFC-124, 2-Chloro-1,1,1,2-Tetrafluoroethane)	HCFC-124	620
R-141b (HCFC-141b, 1,1-Dichloro-1-fluoroethane)	HCFC-141b	700
HFE-143a	HFE-143a	750
HFC-134, 1,1,2,2-Tetrafluoroethane	HFC-134	1,100
R-12B1 (Difluorochlorobromomethane, Halo 1211)	Halon-1211	1,300
R-134a (HFC-134a, 1,1,1,2-Tetrafluoroethane)	HFC-134a	1,300
R-22 (Chlorodifluoromethane)	HCFC-22	1,700
Carbon Tetrachloride	CCl_4	1,800
R-142b (HCFC-142b, 1-Chloro-1,1-difluoroethane)	HCFC-142b	2,400
R-143a (HFC-143a, 1,1,1-Trifluoroethane)	HFC-143a	4,300
R-11 (Trichlorofluoromethane)	CFC-11	4,600
R-14 (Carbon Tetrafluoride)	CF_4	5,700
R-113 (1,1,2-Trichloro-1,2,2-Trifluoroethane)	CFC-113	6,000
R-E134 (HFE-134, 1,1,1',1'-Tetrafluorodimethyl ether)	HFE-134	6,100

[7] Source: IPCC 2001.

TABLE 1 (cont.): Known Greenhouse Gases and Global Warming Potential[8]

Pollutant Name	Chemical Formula	GWP Relative to CO_2 (100 year horizon)
R-13B1 (Trifluorobromomethane, Halo 1301)	$CBrF_3$	6,900
R-115 (Chloropentafluoroethane)	CFC-115	7,200
C_3F_8 (Perfluoropropane)	C_3F_8	8,600
C_4F_{10} (Perfluoro-n-Butane)	C_4F_{10}	8,600
C_5F_{12} (Perfluoropentane)	C_5F_{12}	8,900
C_6F_{14} (Perfluorohexane)	C_6F_{14}	9,000
R-114 (Freon 114, 1,2-Dichlorotetrafluoroethane)	CFC-114	9,800
R-C318 (Freon 318, Octafluorocyclobutane)	$C\text{-}C_4F_8$	10,000
R-12 (Freon 12, Dichlorodifluoromethane)	CFC-12	10,600
Nitrogen Trifluoride; Trifluoramine	NF_3	10,800
R-116 (Perfluoroethane; Hexafluoroethane)	C_2F_6	11,900
R-23 (HFC-23, Trifluoromethane)	HFC-23	12,000
R-13 (Chlorotrifluoromethane)	CFC-13	14,000
R-E125 (HFE-125, Pentafluorodimethyl ether)	HFE-125	14,900
Sulfur Hexafluoride	SF_6	22,200

ENVIRONMENTAL SIGNIFICANCE THRESHOLDS - NOISE

California Environmental Quality Act (CEQA) Thresholds

Section 15382 of the California Environmental Quality Act (CEQA) guidelines defines a significant impact as,

> *"… a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."*

The minimum change in sound level that the human ear can detect is approximately 3-dBA. This increment, 3-dBA, is commonly accepted under CEQA as representing the point where a noise level increase would represent a significant impact. This impact threshold is accepted by the City of Oceanside, and will be used as the significance threshold to determine the proposed project actions impact on the affected environment.

[8] Source: IPCC 2001.

ENVIRONMENTAL SIGNIFICANCE THRESHOLDS – AIR QUALITY

The EPA has established ambient air quality standards for various classes of criteria pollutants previously discussed.[9] These standards are called the National Ambient Air Quality Standards (NAAQS). The California Air Resources Board (CARB) subsequently established the more stringent California Ambient Air Quality Standards (CAAQS). Both sets of standards are shown in Figure 3 on the following page. Areas in California where ambient air concentrations of pollutants are higher than the state standard are considered to be in *"non-attainment"* status for that pollutant.[10]

ENVIRONMENTAL SIGNIFICANCE THRESHOLDS – GREENHOUSE GAS

The California Global Warming Solutions Act (AB 32)

The California State Legislature passed the *California Global Warming Solutions Act of 2006* (Assembly Bill, AB 32). AB 32 requires the California Air Resources Board (CARB) to develop regulations and market mechanisms that will ultimately reduce California's greenhouse gas emissions by 25 percent by 2020. Mandatory caps will begin in 2012 for significant sources, and will incrementally become stricter to meet the 2020 goals.

Specifically, AB 32 requires CARB to:

1) Establish a statewide greenhouse gas emissions cap for 2020, based on 1990 emissions by January 1, 2008.
2) Adopt mandatory reporting rules for significant sources of greenhouse gases by January 1, 2009.
3) Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.
4) Adopt regulations by January 1, 2011 to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas, including provisions for using both market mechanisms and alternative compliance mechanisms.
5) Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB.
6) Ensure public notice and opportunity for comment for all CARB actions.
7) Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to, impacts on California's economy, the environment and public health; equity between regulated entities; electricity reliability; conformance with other environmental laws; and that the rules do not disproportionately impact low-income communities.

[9] Under the Federal Clean Air Act of 1970, amended in 1977.

[10] The new CARB eight-hour ozone standard became effective in early 2006. The new federal $PM_{2.5}$ standard became effective in early 2007.

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method	Primary	Secondary	Method
Ozone (O_3)	1 Hour	0.09 ppm (180 $\mu g/m^3$)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 $\mu g/m^3$)		0.075 ppm (147 $\mu g/m^3$)		
Respirable Particulate Matter (PM10)	24 Hour	50 $\mu g/m^3$	Gravimetric or Beta Attenuation	150 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 $\mu g/m^3$		–		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		35 $\mu g/m^3$	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 $\mu g/m^3$	Gravimetric or Beta Attenuation	15.0 $\mu g/m^3$		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	–
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm (57 μg/m3)	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.18 ppm (339 $\mu g/m^3$)		–		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (80 $\mu g/m^3$)	–	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 $\mu g/m^3$)		0.14 ppm (365 $\mu g/m^3$)	–	
	3 Hour	–		–	0.5 ppm (1300 $\mu g/m^3$)	
	1 Hour	0.25 ppm (655 $\mu g/m^3$)		–	–	–
Lead	30 Day Average	1.5 $\mu g/m^3$	Atomic Absorption	–	–	–
	Calendar Quarter	–		1.5 $\mu g/m^3$	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	–		0.15 $\mu g/m^3$		
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 $\mu g/m^3$	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Ultraviolet Fluorescence			
Vinyl Chloride	24 Hour	0.01 ppm (26 $\mu g/m^3$)	Gas Chromatography			

FIGURE 3: Ambient Air Quality Standards Matrix (after CARB/EPA, updated 11/17/08)

Amendments to the California Environmental Quality Act (SB 97)

Further, Senate Bill 97 (SB 97) passed in 2007 set a January 1, 2010, deadline for new CEQA guidelines related to greenhouse gas emissions analysis and mitigation.[11] The new guidelines will require GHG emissions and their effects to be analyzed based on scientific and factual data, and not anecdotal comparison. The new guidelines do not require CEQA to establish fixed thresholds of significance; rather they serve to update the procedural language of CEQA Section 15064(a) leaving individual significance criteria to local agencies should they desire to perform the requisite analysis.

ANALYTICAL APPROACH AND METHODOLOGY

Traffic Segment Noise Impact Assessment Approach

The ISE *RoadNoise v2.4* traffic noise prediction model, which is based upon the Federal Highway Administration's RD-77-108 Noise Prediction Model with California (CALVENO, FHWA/CA/TL-87/03) noise emission factors, was used to calculate the incremental increase in vehicular traffic noise levels (versus the baseline year 2030 scenario) due to the proposed circulation element alternative actions.[12]

The model assumed a 'hard-site' propagation rule and a Caltrans/HCM 95/3/2 mix of automobiles/midsize vehicles/trucks, thereby yielding a representative worst-case noise contour set.[13,14] Traffic speeds for the various roadway classifications were using Caltrans/HCM standard practice values.[15]

Traffic Segment Air Quality Conformity Approach

CARB estimates on-road motor vehicle emissions by using a series of models called the *Motor Vehicle Emission Inventory* (MVEI) Models. The four computer models, which form the MVEI, are *CALIMFAC, WEIGHT, EMFAC*, and *BURDEN*.[16] For the current analysis, the *EMFAC 2007 Model v2.3* of the MVEI[17] was run using input conditions specific to the San Diego air basin to predict operational running vehicle

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[11] An act to add Section 21083.05 to, and to add and repeal Section 21097 of, the Public Resources Code, relating to the California Environmental Quality Act.

[12] Source: IBI Group, Inc., 2/11.

[13] *Hard-Site* propagation is defined as a 3.0-dBA loss per doubling of distance (DD) between source and receiver.

[14] HCM = Highway Capacity Manual, 2000

[15] Reference citation is HCM SP1100 through SP1110.

[16] CALIMFAC produces base emission rates for each model year when a vehicle is new, and as it accumulates mileage and the emission controls deteriorate. WEIGHT calculates the relative weighting each model year should be given in the total inventory, and each model year's accumulated mileage. EMFAC uses these pieces of information, along with the correction factors and other data, to produce fleet composite emission factors. BURDEN combines the emission factors with county-specific activity data to produce to emission inventories.

[17] This is the most current CARB vehicle emissions model approved for use within the State of California. Any subsidiary program (such as the previously discussed *URBEMIS* program) uses this model to determine the applicable vehicle emission factors.

emissions due to the existing (year 2011), baseline current circulation element (year 2030) and alternative design scenarios 1 and 2 (also year 2030).

A mix ratio consistent with the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol was used. This consisted of the following air standard Otto-Cycle engine vehicle distribution percentages: Light Duty Autos (LDA) = 69.0%, Light Duty Trucks (LDT) = 19.3%, Medium Duty Trucks (MDT) = 6.4%, Heavy Duty Trucks (HDT) = 4.7%, Buses (UBUS) = 0.1% and Motorcycles (MCY) = 0.5%.[18]

Using these emission values, a hotspot conformity analysis was performed on all circulation element alternative roadway segments, using the *California Line Source Emissions Model Version 4* (CALINE4)[19] air dispersion model methodology in order to quantify near term cumulative plus project pollutant concentrations within this portion of the project air basin. CALINE4 is the accepted line source dispersion model within the State of California.

For the hotspot analysis, alternative horizon traffic volumes for all affected roadway segments were used based upon values provided by the project traffic engineer.[20] Worst-case running emission factors were used for all potentially impacted roadway segments. Worst-case wind speed, aggregate emissions class data, and meteorological assumptions were created and run for the various traffic scenarios. The peak hour traffic volume was calculated at worst-case 10-percent of the daily ADT.

Levels for NO_x precursors were set to CARB-monitored basin-wide levels. The NO_2 photolysis rate was taken at a default atmospheric solar value of 0.004/sec.[21] The CALINE4 solution space results for each pollutant is provided as attachments to this report.

Greenhouse Gas Inventory Tabulation Approach

The aggregate greenhouse emission factors from the CARB *EMFAC 2007* model are provided as an attachment to this report. Of principal interest are the emission factors for CO_2 and NO_X. N_2O emissions (a greenhouse gas) were taken to be approximately 30% by weight of the NO_x emissions.[22]

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[18] This mix level is slightly different (in terms of aggregated percentages) than that used for acoustical analysis by virtue of the different modeling approaches used in each discipline. This aggregate mix effectively works out to 94.7% automobiles by weight classification with the remaining vehicles an approximate percentage distribution.

[19] CALINE4 is a Gaussian line dispersion model, developed by Caltrans; it is used to predict localized vehicle emissions from mobile sources. The model uses source strength, meteorological data, and site geometry to predict pollutant concentrations within 1,500 feet of the roadway.

[20] Source: IBI Group, Inc., 2/11.

[21] Photolysis is the process by which a chemical compound undergoes a change in valence as the result of the absorption of a photon (i.e., light). This process is also called photodecomposition, photochemical reaction, or photo-oxidation.

[22] Source: Turns, Stephen, An Introduction to Combustion, Concepts and Applications, 2nd ed. 2000.

For the purposes of analysis within this report (and to be completely consistent with AB 32), it will be sought to, 1) quantify the aggregate greenhouse gas emissions due to the proposed project action, and, 2) compare the proposed circulation alternative actions for a reduction in greenhouse gas emissions consistent with the intent of AB 32 as compared to *'business as usual'*.

FINDINGS AND RECOMMENDATIONS

Future Aggregate Traffic Noise / Air Quality / GHG Levels

The results showing the effect of traffic noise increases on the various servicing roadway segments associated with the circulation element scenarios under examination are provided in Tables 2a through –d starting on the following page. For each roadway segment examined, the average daily traffic volume (ADT) and predicted speeds are shown for the following scenarios:

- Existing Year 2011 Conditions
- Baseline Year 2030 No-Project Conditions
- Circulation Alternative 1 Year 2030 Conditions
- Circulation Alternative 2 Year 2030 Conditions

The corresponding reference noise level at 50-feet (in dBA) is shown along with the line-of-sight 60 through 75 dBA CNEL traffic noise contours as an indication of worst-case unobstructed noise impact potential.

In a similar fashion, Tables 3a through –d starting on Page 35 of this report provides an indication of the net increase in CO, NO_X, PM_{10} and $PM_{2.5}$ due to each servicing roadway segment under the above-cited scenarios examined. The operating level of service is also provided as an indication of segment congestion patterns.

Finally, Tables 4a through –d starting on Page 51 of this report provides an indication of the net *equivalent* CO_2 (or CO_{2e}) per vehicle mile per day along each segment examined. Levels for the direct constituent CO_2 and N_2O emissions are also provided as well as the operating level of service.

TABLE 2a: 2011 Traffic Noise Conditions (Existing Conditions)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Cannon Road	Melrose Drive to Western City Limits	10,400	55	71.6	23	72	229	723
Canyon Drive	SR76 to Mission Avenue	5,400	35	64.4	4	14	44	138
	Mission Avenue to Oceanside Boulevard	8,100	35	66.2	7	21	66	208
Coast Highway	Harbor Drive to SR76	9,000	35	66.6	7	23	72	229
	SR76 to Mission Avenue	18,300	35	69.7	15	47	148	467
	Mission Avenue to Wisconsin Avenue	21,600	35	70.4	17	55	173	548
	Wisconsin Avenue to Oceanside Boulevard	22,100	35	70.5	18	56	177	561
	Oceanside Boulevard to Cassidy Street	20,400	35	70.2	17	52	166	524
	Cassidy Street to Vista Way	19,600	35	70.0	16	50	158	500
	Vista Way to Southern City Limits	17,900	35	69.6	14	46	144	456
College Boulevard	N. River Road to SR76	38,500	55	77.3	85	269	849	2,685
	SR76 to Frazee Road	30,300	55	76.2	66	208	659	2,084
	Frazee Road to Mesa Drive	32,700	55	76.5	71	223	706	2,233
	Mesa Drive to Old Grove Road	29,000	55	76.0	63	199	629	1,991
	Old Grove Road to Oceanside Boulevard	38,200	55	77.2	83	262	830	2,624
	Oceanside Boulevard to Olive Drive	46,700	55	78.1	102	323	1,021	3,228
	Olive Drive to Waring Road	35,800	55	76.9	77	245	774	2,449
	Waring Road to Vista Way	40,200	55	77.4	87	275	869	2,748
	Vista Way to SR78	38,300	55	77.2	83	262	830	2,624
	SR78 to Plaza Drive	40,500	55	77.5	89	281	889	2,812
	Plaza Drive to Lake Boulevard	33,800	55	76.7	74	234	740	2,339
	Lake Boulevard to Southern City Limits	24,300	55	75.3	54	169	536	1,694
Douglas Drive	Vandegrift Boulevard to Via Malaguena	8,200	35	66.2	7	21	66	208
	Via Malaguena to Cardiff Bay Drive	8,200	35	66.2	7	21	66	208
	Cardiff Bay Drive to N. River Road	14,100	35	68.6	11	36	115	362
	N. River Road to Pala Road	32,700	55	76.5	71	223	706	2,233
	Pala Road to El Camino Real	35,000	55	76.8	76	239	757	2,393
	El Camino Real to Mission Avenue	21,000	35	70.3	17	54	169	536
	Mission Avenue to SR76	20,400	55	74.5	45	141	446	1,409

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2a (cont.): 2011 Traffic Noise Conditions (Existing Conditions)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
El Camino Real	Douglas Drive to Mission Avenue	22,600	55	74.9	49	155	489	1,545
	Mission Avenue to Mesa Drive	21,200	55	74.7	47	148	467	1,476
	Mesa Drive to Oceanside Boulevard	33,000	55	76.6	72	229	723	2,285
	Oceanside Boulevard to Fire Mountain Road	35,800	55	76.9	77	245	774	2,449
	Fire Mountain Road to Via Las Rosas	36,200	55	77.0	79	251	792	2,506
	Via Las Rosas to Vista Way	43,700	55	77.8	95	301	953	3,013
	Vista Way to SR78	51,100	55	78.5	112	354	1,119	3,540
Emerald Drive	Lake Boulevard to Sunset Drive	2,300	35	60.7	2	6	19	59
Frazee Road	Old Grove Road to SR76	5,500	55	68.8	12	38	120	379
	SR76 to College Boulevard	9,300	55	71.1	20	64	204	644
	College Boulevard to Sagewood Drive	3,600	35	62.7	3	9	29	93
Lake Boulevard	College Boulevard to Thunder Drive	13,100	35	68.3	11	34	107	338
	Thunder Drive to Sundown Lane	14,800	35	68.8	12	38	120	379
	Sundown Lane to Sky Haven Lane	14,800	35	68.8	12	38	120	379
	Sky Haven Lane to Cannon Road	13,400	35	68.4	11	35	109	346
Melrose Drive	SR76 to Spur Avenue	9,300	55	71.1	20	64	204	644
	N. Santa Fe Avenue to Oceanside Boulevard	14,300	55	73.0	32	100	315	998
	Oceanside Boulevard to City Limits	19,400	55	74.3	43	135	426	1,346
	City Limits to Cannon Road	27,400	55	75.8	60	190	601	1,901
	Cannon Road to Southern City Limits	30,000	55	76.2	66	208	659	2,084
Mesa Drive	Mission Avenue to Foussat Road	5,600	35	64.6	5	14	46	144
	Foussat Road to El Camino Real	4,700	35	63.8	4	12	38	120
	El Camino Real to Rancho Del Oro Road	13,300	35	68.3	11	34	107	338
	Rancho Del Oro Road to Old Grove Road	11,400	35	67.7	9	29	93	294
	Old Grove Road to College Boulevard	14,800	35	68.8	12	38	120	379
	College Boulevard to N. Santa Fe Avenue	11,800	35	67.8	10	30	95	301

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2a (cont.): 2011 Traffic Noise Conditions (Existing Conditions)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Mission Avenue	Pacific Street to Coast Hwy	8,500	35	66.4	7	22	69	218
	Coast Hwy to Horne Street	8,500	35	66.4	7	22	69	218
	Horne Street to I-5	15,600	55	73.3	34	107	338	1,069
	I-5 to Canyon Drive	27,900	55	75.9	62	195	615	1,945
	Canyon Drive to Mesa Drive	23,800	55	75.2	52	166	524	1,656
	Mesa Drive to Foussat Road	19,500	55	74.3	43	135	426	1,346
	Foussat Road to El Camino Real	23,800	55	75.2	52	166	524	1,656
	El Camino Real to Douglas Drive	20,200	55	74.5	45	141	446	1,409
	Douglas Drive to Rancho Del Oro Road	25,000	55	75.4	55	173	548	1,734
	Rancho Del Oro Road to Old Grove Road	10,500	35	67.3	8	27	85	269
	Old Grove Road to Frazee Road	8,500	35	66.4	7	22	69	218
North Avenue	Olive Drive to Temple Heights Drive	6,600	35	65.3	5	17	54	169
	Temple Heights Drive to Melrose Drive	3,800	35	62.9	3	10	31	97
North River Road	Douglas Drive to College Boulevard	19,500	55	74.3	43	135	426	1,346
	College Boulevard to Vandegrift Boulevard	31,900	55	76.4	69	218	690	2,183
	Vandegrift Boulevard to Stallion	10,100	35	67.1	8	26	81	256
	Stallion Road to Eastern City Limits	4,800	35	63.9	4	12	39	123
North Santa Fe Avenue	SR76 to Mesa Drive	21,800	55	74.8	48	151	477	1,510
	Mesa Drive to Melrose Drive	22,700	55	75.0	50	158	500	1,581
	Melrose Drive to Eastern City Limits	15,400	35	69.0	13	40	126	397
Oceanside Boulevard	Pacific Street to Coast Hwy	5,400	35	64.4	4	14	44	138
	Coast Highway to I-5	21,700	35	70.5	18	56	177	561
	I-5 to Crouch Street	29,800	35	71.8	24	76	239	757
	Crouch Street to Foussat Road	31,300	35	72.0	25	79	251	792
	Foussat Road to El Camino Real	25,900	35	71.2	21	66	208	659
	El Camino Real to Rancho Del Oro Road	29,900	55	76.2	66	208	659	2,084
	Rancho Del Oro Road to College Boulevard	29,700	55	76.1	64	204	644	2,037
	College Boulevard to Melrose Drive	25,400	55	75.4	55	173	548	1,734
	Melrose Drive to Eastern City Limits	17,900	55	73.9	39	123	388	1,227

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2a (cont.): 2011 Traffic Noise Conditions (Existing Conditions)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Old Grove Road	Frazee Road to SR76	7,500	55	70.1	16	51	162	512
	SR76 to Mission Avenue	10,800	55	71.7	23	74	234	740
	Mission Avenue to Mesa Drive	11,200	55	71.9	24	77	245	774
	Mesa Drive to College Boulevard	11,600	55	72.0	25	79	251	792
Olive Drive	College Boulevard to Emerald Drive	16,100	35	69.2	13	42	132	416
Pala Road	Los Arbolitos Boulevard to Douglas Drive	4,900	35	64.0	4	13	40	126
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	20,000	35	70.1	16	51	162	512
	SR78 EB on/off-ramps to Eastern City Limits	14,500	35	68.7	12	37	117	371
Rancho Del Oro Drive	Mission Avenue to SR76	8,900	55	70.9	19	62	195	615
	SR76 to Mesa Drive	14,300	55	73.0	32	100	315	998
	Mesa Drive to Oceanside Boulevard	12,400	55	72.3	27	85	269	849
	Oceanside Boulevard to Cameo Drive	12,600	55	72.4	27	87	275	869
	Cameo Drive to SR78	13,700	55	72.8	30	95	301	953
Vandegrift Boulevard	Northern City Limits to Douglas Drive	21,700	55	74.8	48	151	477	1,510
	Douglas Drive to N. River Road	22,800	55	75.0	50	158	500	1,581
Vista Way	Coast Highway to I-5	17,400	35	69.5	14	45	141	446
	Jefferson Street to El Camino Real	13,500	35	68.4	11	35	109	346
	El Camino Real to Rancho Del Oro Road	14,300	35	68.6	11	36	115	362
	Rancho Del Oro Road to College Boulevard	20,300	35	70.2	17	52	166	524
	College Boulevard to Thunder Drive	16,200	35	69.2	13	42	132	416
State Route 76	I-5 to Canyon Drive	49,500	60	79.2	132	416	1,315	4,159
	Canyon Drive to Foussat Road	54,000	60	79.6	144	456	1,442	4,560
	Foussat Road to Douglas Drive	51,000	60	79.4	138	435	1,377	4,355
	Douglas Drive to Rancho Del Oro Road	45,500	60	78.9	123	388	1,227	3,881
	Rancho Del Oro Road to Frazee Road	44,000	60	78.7	117	371	1,172	3,707
	Frazee Road to College Boulevard	44,000	60	78.7	117	371	1,172	3,707
	College Boulevard to N. Santa Fe Avenue	36,000	60	77.9	97	308	975	3,083
	N. Santa Fe Avenue to Melrose Drive	40,000	60	78.3	107	338	1,069	3,380
	Melrose Drive to Eastern City Limits	35,500	60	77.8	95	301	953	3,013

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2b: 2030 Traffic Noise Conditions (Baseline Scenario)

					CNEL Contour Distances (feet)			
Roadway	**Segment**	**ADT**	**Speed (MPH)**	**SPL**	**75 CNEL**	**70 CNEL**	**65 CNEL**	**60 CNEL**
Cannon Drive	Melrose Drive to Western City Limits	29,100	55	76.0	63	199	629	1,991
Canyon Drive	SR76 to Mission Avenue	10,700	35	67.4	9	27	87	275
	Mission Avenue to Oceanside Boulevard	9,300	35	66.8	8	24	76	239
Coast Highway	Harbor Drive to SR76	17,100	35	69.4	14	44	138	435
	SR76 to Mission Avenue	20,100	35	70.1	16	51	162	512
	Mission Avenue to Wisconsin Avenue	23,700	35	70.8	19	60	190	601
	Wisconsin Avenue to Oceanside Boulevard	23,600	35	70.8	19	60	190	601
	Oceanside Boulevard to Cassidy Street	21,800	35	70.5	18	56	177	561
	Cassidy Street to Vista Way	20,900	35	70.3	17	54	169	536
	Vista Way to Southern City Limits	19,700	35	70.0	16	50	158	500
College Boulevard	N. River Road to SR76	42,200	55	77.7	93	294	931	2,944
	SR76 to Frazee Road	36,300	55	77.0	79	251	792	2,506
	Frazee Road to Mesa Drive	36,900	55	77.1	81	256	811	2,564
	Mesa Drive to Old Grove Road	32,600	55	76.5	71	223	706	2,233
	Old Grove Road to Avenida de la Plata	39,000	55	77.3	85	269	849	2,685
	Avenida de la Plata to Oceanside Boulevard	42,500	55	77.7	93	294	931	2,944
	Oceanside Boulevard to Olive Drive	52,000	55	78.6	115	362	1,145	3,622
	Olive Drive to Waring Road	40,000	55	77.4	87	275	869	2,748
	Waring Road to Vista Way	45,800	55	78.0	100	315	998	3,155
	Vista Way to SR78	47,100	55	78.1	102	323	1,021	3,228
	SR78 to Plaza Drive	49,300	55	78.3	107	338	1,069	3,380
	Plaza Drive to Lake Boulevard	39,300	55	77.3	85	269	849	2,685
	Lake Boulevard to Southern City Limits	41,400	55	77.6	91	288	910	2,877
Douglas Drive	Vandegrift Boulevard to Cardiff Bay Drive	13,300	35	68.3	11	34	107	338
	Cardiff Bay Drive to N. River Road	17,500	35	69.5	14	45	141	446
	N. River Road to Pala Road	38,500	55	77.3	85	269	849	2,685
	Pala Road to El Camino Real	38,400	55	77.2	83	262	830	2,624
	El Camino Real to Mission Avenue	23,900	55	75.2	52	166	524	1,656
	Mission Avenue to SR76	25,400	55	75.4	55	173	548	1,734

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2b (cont.): 2030 Traffic Noise Conditions (Baseline Scenario)

					CNEL Contour Distances (feet)			
Roadway	**Segment**	**ADT**	**Speed (MPH)**	**SPL**	**75 CNEL**	**70 CNEL**	**65 CNEL**	**60 CNEL**
El Camino Real	Douglas Drive to Mission Avenue	25,400	55	75.4	55	173	548	1,734
	Mission Avenue to Mesa Drive	25,500	55	75.5	56	177	561	1,774
	Mesa Drive to Oceanside Boulevard	39,600	55	77.4	87	275	869	2,748
	Oceanside Boulevard to Fire Mountain Road	43,100	55	77.7	93	294	931	2,944
	Fire Mountain Road to Via Las Rosas	48,200	55	78.2	104	330	1,045	3,303
	Via Las Rosas to Vista Way	53,600	55	78.7	117	371	1,172	3,707
	Vista Way to SR78	58,900	55	79.1	129	406	1,285	4,064
Emerald Drive	Lake Boulevard to Sunset Drive	4,200	35	63.3	3	11	34	107
Frazee Road	Old Grove Road to SR76	5,700	55	69.0	13	40	126	397
	SR76 to College Boulevard	12,000	55	72.2	26	83	262	830
	College Boulevard to Sagewood Drive	5,200	35	64.2	4	13	42	132
Lake Boulevard	College Boulevard to Thunder Drive	19,500	35	70.0	16	50	158	500
	Thunder Drive to Sundown Lane	16,200	35	69.2	13	42	132	416
	Sundown Lane to Sky Haven Lane	16,200	35	69.2	13	42	132	416
	Sky Haven Lane to Cannon Road	14,700	35	68.8	12	38	120	379
Melrose Drive	N. River Road to SR76	13,100	55	72.6	29	91	288	910
	SR76 to N. Santa Fe Avenue	26,500	55	75.6	57	182	574	1,815
	N. Santa Fe Avenue to Oceanside Boulevard	36,600	55	77.0	79	251	792	2,506
	Oceanside Boulevard to City Limits	43,800	55	77.8	95	301	953	3,013
	City Limits to Cannon Road	32,100	55	76.5	71	223	706	2,233
	Cannon Road to Southern City Limits	34,100	55	76.7	74	234	740	2,339
Mesa Drive	Mission Avenue to Foussat Road	11,100	35	67.5	9	28	89	281
	Foussat Road to El Camino Real	8,800	35	66.5	7	22	71	223
	El Camino Real to Rancho Del Oro Drive	17,300	35	69.5	14	45	141	446
	Rancho Del Oro Drive to Old Grove Road	18,100	35	69.7	15	47	148	467
	Old Grove Road to College Boulevard	18,700	35	69.8	15	48	151	477
	College Boulevard to N. Santa Fe Avenue	15,100	35	68.9	12	39	123	388

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2b (cont.): 2030 Traffic Noise Conditions (Baseline Scenario)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Mission Avenue	Pacific Street to Coast Highway	14,400	35	68.7	12	37	117	371
	Coast Highway to Horne Street	16,800	55	73.7	37	117	371	1,172
	Horne Street to I-5	27,000	55	75.7	59	186	587	1,858
	I-5 to Canyon Drive	34,600	55	76.8	76	239	757	2,393
	Canyon Drive to Mesa Drive	27,000	55	75.7	59	186	587	1,858
	Mesa Drive to Foussat Road	27,200	55	75.7	59	186	587	1,858
	Foussat Road to El Camino Real	29,400	55	76.1	64	204	644	2,037
	El Camino Real to Douglas Drive	25,300	55	75.4	55	173	548	1,734
	Douglas Drive to Rancho Del Oro Drive	31,000	55	76.3	67	213	674	2,133
	Rancho Del Oro Road to Old Grove Drive	12,900	35	68.2	10	33	104	330
	Old Grove Road to Frazee Road	9,100	35	66.7	7	23	74	234
North Avenue	Olive Drive to Temple Heights Drive	7,800	35	66.0	6	20	63	199
	Temple Heights Dr to Melrose Drive	3,900	35	63.0	3	10	32	100
North River Road	Douglas Drive to College Boulevard	23,400	55	75.1	51	162	512	1,618
	College Boulevard to Vandegrift Boulevard	38,300	55	77.2	83	262	830	2,624
	Vandegrift Boulevard to Stallion Road	9,700	55	71.3	21	67	213	674
	Stallion Road to Melrose Drive	10,600	55	71.7	23	74	234	740
	Melrose Drive to Eastern City Limits	12,900	35	68.2	10	33	104	330
North Santa Fe Avenue	SR76 to Mesa Drive	25,700	55	75.5	56	177	561	1,774
	Mesa Drive to Melrose Drive	27,500	55	75.8	60	190	601	1,901
Oceanside Boulevard	Pacific Street to Coast Highway	8,700	35	66.5	7	22	71	223
	Coast Highway to I-5	21,100	35	70.3	17	54	169	536
	I-5 to Crouch Street	32,600	55	76.5	71	223	706	2,233
	Crouch Street to Foussat Road	37,900	55	77.2	83	262	830	2,624
	Foussat Road to El Camino Real	33,800	55	76.7	74	234	740	2,339
	El Camino Real to Rancho Del Oro Road	37,100	55	77.1	81	256	811	2,564
	Rancho Del Oro Road to College Boulevard	41,400	55	77.6	91	288	910	2,877
	College Boulevard to Melrose Drive	29,500	55	76.1	64	204	644	2,037
	Melrose Drive to Eastern City Limits	28,000	55	75.9	62	195	615	1,945

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2b (cont.): 2030 Traffic Noise Conditions (Baseline Scenario)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Old Grove Road	Frazee Road to SR76	8,000	55	70.4	17	55	173	548
	SR76 to Mission Avenue	17,800	55	73.9	39	123	388	1,227
	Mission Avenue to Mesa Drive	17,700	55	73.9	39	123	388	1,227
	Mesa Drive to College Boulevard	24,900	55	75.4	55	173	548	1,734
Olive Drive	College Boulevard to Emerald Drive	17,700	35	69.6	14	46	144	456
Pala Road	Foussat Road Los Arbolitos Boulevard	7,000	35	65.5	6	18	56	177
	Los Arbolitos Boulevard to Douglas Drive	8,300	35	66.3	7	21	67	213
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	22,100	35	70.5	18	56	177	561
	SR78 EB on/off-ramps to Eastern City Limits	16,000	35	69.1	13	41	129	406
Rancho Del Oro Drive	Mission Avenue to SR76	9,000	55	70.9	19	62	195	615
	SR76 to Mesa Drive	24,200	55	75.2	52	166	524	1,656
	Mesa Drive to Oceanside Boulevard	26,500	55	75.6	57	182	574	1,815
	Oceanside Boulevard to Cameo Drive	32,400	55	76.5	71	223	706	2,233
	Cameo Drive to SR78	30,800	55	76.3	67	213	674	2,133
Vandegrift Boulevard	Northern City Limits to Douglas Drive	26,000	55	75.5	56	177	561	1,774
	Douglas Drive to N. River Road	27,600	55	75.8	60	190	601	1,901
Vista Way	Coast Highway to I-5	18,100	35	69.7	15	47	148	467
	Jefferson Street to El Camino Real	15,400	35	69.0	13	40	126	397
	El Camino Real to Rancho Del Oro Road	18,100	35	69.7	15	47	148	467
	Rancho Del Oro Road to College Boulevard	24,600	35	71.0	20	63	199	629
	College Boulevard to Thunder Drive	19,200	35	69.9	15	49	155	489
State Route 76	I-5 to Canyon Drive	60,700	60	80.1	162	512	1,618	5,116
	Canyon Drive to Foussat Road	65,900	60	80.5	177	561	1,774	5,610
	Foussat Road to Douglas Drive	59,800	60	80.1	162	512	1,618	5,116
	Douglas Drive to Rancho Del Oro Drive	54,100	60	79.6	144	456	1,442	4,560
	Rancho Del Oro Drive to Frazee Road	58,200	60	80.0	158	500	1,581	5,000
	Frazee Road to College Boulevard	51,500	60	79.4	138	435	1,377	4,355
	College Boulevard to N. Santa Fe Avenue	56,200	60	79.8	151	477	1,510	4,775
	N. Santa Fe Avenue to Melrose Drive	58,000	60	79.9	155	489	1,545	4,886
	Melrose Drive to Eastern City Limits	61,800	60	80.2	166	524	1,656	5,236

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2c: 2030 Traffic Noise Conditions (Alternative 1)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Cannon Road	Melrose Drive to Western City Limits	28,300	55	75.9	62	195	615	1,945
Canyon Drive	SR76 to Mission Avenue	10,700	35	67.4	9	27	87	275
	Mission Avenue to Oceanside Boulevard	9,300	35	66.8	8	24	76	239
Coast Highway	Harbor Drive to SR76	16,600	35	69.3	13	43	135	426
	SR76 to Mission Avenue	18,100	35	69.7	15	47	148	467
	Mission Avenue to Wisconsin Avenue	21,600	35	70.4	17	55	173	548
	Wisconsin Avenue to Oceanside Boulevard	23,300	35	70.8	19	60	190	601
	Oceanside Boulevard to Cassidy Street	21,900	35	70.5	18	56	177	561
	Cassidy Street to Vista Way	19,700	35	70.0	16	50	158	500
	Vista Way to Southern City Limits	17,700	35	69.6	14	46	144	456
College Boulevard	N. River Road to SR76	44,900	55	77.9	97	308	975	3,083
	SR76 to Frazee Road	36,100	55	77.0	79	251	792	2,506
	Frazee Road to Mesa Drive	36,700	55	77.0	79	251	792	2,506
	Mesa Drive to Old Grove Road	31,100	55	76.3	67	213	674	2,133
	Old Grove Road to Avenida de la Plata	37,500	55	77.1	81	256	811	2,564
	Avenida de la Plata to Oceanside Boulevard	40,100	55	77.4	87	275	869	2,748
	Oceanside Boulevard to Olive Drive	47,700	55	78.2	104	330	1,045	3,303
	Olive Drive to Waring Road	35,900	55	77.0	79	251	792	2,506
	Waring Road to Vista Way	43,900	55	77.8	95	301	953	3,013
	Vista Way to SR78	45,800	55	78.0	100	315	998	3,155
	SR78 to Plaza Drive	49,000	55	78.3	107	338	1,069	3,380
	Plaza Drive to Lake Boulevard	39,100	55	77.3	85	269	849	2,685
	Lake Boulevard to Southern City Limits	41,500	55	77.6	91	288	910	2,877
Douglas Drive	Vandegrift Boulevard to Via Malaguena	13,600	35	68.4	11	35	109	346
	Via Malaguena to Cardiff Bay Drive	13,600	35	68.4	11	35	109	346
	Cardiff Bay Drive to N. River Road	18,000	35	69.6	14	46	144	456
	N. River Road to Pala Road	40,100	55	77.4	87	275	869	2,748
	Pala Road to El Camino Real	39,500	55	77.4	87	275	869	2,748
	El Camino Real to Mission Ave	24,000	55	75.2	52	166	524	1,656
	Mission Avenue to SR76	25,600	55	75.5	56	177	561	1,774

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2c (cont.): 2030 Traffic Noise Conditions (Alternative 1)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
El Camino Real	Douglas Drive to Mission Avenue	25,900	55	75.5	56	177	561	1,774
	Mission Avenue to Mesa Drive	25,800	55	75.5	56	177	561	1,774
	Mesa Drive to Oceanside Boulevard	39,700	55	77.4	87	275	869	2,748
	Oceanside Boulevard to Fire Mountain Road	43,400	55	77.8	95	301	953	3,013
	Fire Mountain Road to Via Las Rosas	48,400	55	78.2	104	330	1,045	3,303
	Via Las Rosas to Vista Way	53,700	55	78.7	117	371	1,172	3,707
	Vista Way to SR78	59,000	55	79.1	129	406	1,285	4,064
Emerald Drive	Lake Boulevard to Sunset Drive	4,300	35	63.4	3	11	35	109
Frazee Road	Old Grove Road to SR76	5,800	55	69.0	13	40	126	397
	SR76 to College Boulevard	12,100	55	72.2	26	83	262	830
	College Boulevard to Sagewood Drive	5,400	35	64.4	4	14	44	138
Lake Boulevard	College Boulevard to Thunder Drive	19,300	35	69.9	15	49	155	489
	Thunder Drive to Sundown Lane	16,100	35	69.2	13	42	132	416
	Sundown Lane to Sky Haven Lane	16,100	35	69.2	13	42	132	416
	Sky Haven Lane to Cannon Road	14,600	35	68.7	12	37	117	371
Melrose Drive	SR76 to N. Santa Fe Avenue	23,200	55	75.1	51	162	512	1,618
	N. Santa Fe Avenue to Oceanside Boulevard	36,600	55	77.0	79	251	792	2,506
	Oceanside Boulevard to City Limits	43,800	55	77.8	95	301	953	3,013
	City Limits to Cannon Road	32,100	55	76.5	71	223	706	2,233
	Cannon Road to Southern City Limits	34,100	55	76.7	74	234	740	2,339
Mesa Drive	Mission Avenue to Foussat Road	11,100	35	67.5	9	28	89	281
	Foussat Road to El Camino Real	8,700	35	66.5	7	22	71	223
	El Camino Real to Rancho Del Oro Drive	17,300	35	69.5	14	45	141	446
	Rancho Del Oro Drive to Old Grove Road	18,100	35	69.7	15	47	148	467
	Old Grove Road to College Boulevard	18,600	35	69.8	15	48	151	477
	College Boulevard to N. Santa Fe Avenue	14,900	35	68.8	12	38	120	379

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2c (cont.): 2030 Traffic Noise Conditions (Alternative 1)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Mission Avenue	Pacific Street to Cleveland Street	14,400	35	68.7	12	37	117	371
	Cleveland Street to Coast Highway	7,200	35	65.7	6	19	59	186
	Coast Highway to Clementine Street	11,500	35	67.7	9	29	93	294
	Clementine Street to Horne Street	21,400	35	70.4	17	55	173	548
	Horne Street to I-5	27,000	55	75.7	59	186	587	1,858
	I-5 to Canyon Drive	35,000	55	76.8	76	239	757	2,393
	Canyon Drive to Mesa Drive	27,400	55	75.8	60	190	601	1,901
	Mesa Drive to Foussat Road	27,400	55	75.8	60	190	601	1,901
	Foussat Road to El Camino Real	29,500	55	76.1	64	204	644	2,037
	El Camino Real to Douglas Drive	25,400	55	75.4	55	173	548	1,734
	Douglas Drive to Rancho Del Oro Drive	31,600	55	76.4	69	218	690	2,183
	Rancho Del Oro Drive to Old Grove Road	12,900	35	68.2	10	33	104	330
	Old Grove Road to Frazee Road	9,100	35	66.7	7	23	74	234
North Avenue	Olive Drive to Temple Heights Drive	7,900	35	66.1	6	20	64	204
	Temple Heights Drive to Melrose Drive	4,100	35	63.2	3	10	33	104
North River Road	Douglas Drive to College Boulevard	24,500	55	75.3	54	169	536	1,694
	College Boulevard to Vandegrift Boulevard	42,300	55	77.7	93	294	931	2,944
	Vandegrift Boulevard to Stallion Road	10,800	55	71.7	23	74	234	740
	Stallion Road to Melrose Dr	7,000	55	69.9	15	49	155	489
	Melrose Drive to Eastern City Limits	9,400	35	66.8	8	24	76	239
North Santa Fe Avenue	SR76 to Mesa Drive	26,800	55	75.7	59	186	587	1,858
	Mesa Drive to Melrose Drive	28,600	55	76.0	63	199	629	1,991
Oceanside Boulevard	Pacific Street to Coast Highway	8,500	35	66.4	7	22	69	218
	Coast Highway to I-5	21,100	35	70.3	17	54	169	536
	I-5 to Crouch Street	32,700	55	76.5	71	223	706	2,233
	Crouch Street to Foussat Road	38,000	55	77.2	83	262	830	2,624
	Foussat Road to El Camino Real	33,900	55	76.7	74	234	740	2,339
	El Camino Real to Rancho Del Oro Road	37,100	55	77.1	81	256	811	2,564
	Rancho Del Oro Road to College Boulevard	41,400	55	77.6	91	288	910	2,877
	College Boulevard to Melrose Drive	29,400	55	76.1	64	204	644	2,037
	Melrose Drive to Eastern City Limits	28,200	55	75.9	62	195	615	1,945

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2c (cont.): 2030 Traffic Noise Conditions (Alternative 1)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Old Grove Road	Frazee Road to SR76	8,000	55	70.4	17	55	173	548
	SR76 to Mission Avenue	17,900	55	73.9	39	123	388	1,227
	Mission Avenue to Mesa Drive	17,800	55	73.9	39	123	388	1,227
	Mesa Drive to College Boulevard	24,900	55	75.4	55	173	548	1,734
Olive Drive	College Boulevard to Emerald Drive	18,600	35	69.8	15	48	151	477
Pala Road	Foussat Road Los Arbolitos Boulevard	7,500	35	65.8	6	19	60	190
	Los Arbolitos Boulevard to Douglas Drive	8,800	35	66.5	7	22	71	223
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	22,200	35	70.6	18	57	182	574
	SR78 EB on/off-ramps to Eastern City Limits	16,000	35	69.1	13	41	129	406
Rancho Del Oro Drive	Mission Avenue to SR76	9,300	55	71.1	20	64	204	644
	SR76 to Mesa Drive	24,400	55	75.3	54	169	536	1,694
	Mesa Drive to Oceanside Boulevard	26,700	55	75.7	59	186	587	1,858
	Oceanside Boulevard to Cameo Drive	32,700	55	76.5	71	223	706	2,233
	Cameo Drive to SR78	31,100	55	76.3	67	213	674	2,133
Vandegrift Boulevard	Northern City Limits to Douglas Drive	26,000	55	75.5	56	177	561	1,774
	Douglas Drive to N. River Road	29,100	55	76.0	63	199	629	1,991
Vista Way	Coast Highway to I-5	18,200	35	69.7	15	47	148	467
	Jefferson Street to El Camino Real	15,400	35	69.0	13	40	126	397
	El Camino Real to Rancho Del Oro Road	18,200	35	69.7	15	47	148	467
	Rancho Del Oro Road to College Boulevard	24,600	35	71.0	20	63	199	629
	College Boulevard to Thunder Drive	18,800	35	69.8	15	48	151	477
State Route 76	I-5 to Canyon Drive	60,800	60	80.1	162	512	1,618	5,116
	Canyon Drive to Foussat Road	66,100	60	80.5	177	561	1,774	5,610
	Foussat Road to Douglas Drive	59,800	60	80.1	162	512	1,618	5,116
	Douglas Drive to Rancho Del Oro Drive	53,800	60	79.6	144	456	1,442	4,560
	Rancho Del Oro Drive to Frazee Road	57,900	60	79.9	155	489	1,545	4,886
	Frazee Road to College Boulevard	51,100	60	79.4	138	435	1,377	4,355
	College Boulevard to N. Santa Fe Avenue	57,500	60	79.9	155	489	1,545	4,886
	N. Santa Fe Avenue to Melrose Drive	57,700	60	79.9	155	489	1,545	4,886
	Melrose Drive to Eastern City Limits	65,000	60	80.4	173	548	1,734	5,482

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2d: 2030 Traffic Noise Conditions (Alternative 2)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Cannon Road	Melrose Drive to Western City Limits	28,300	55	75.9	62	195	615	1,945
Canyon Drive	SR76 to Mission Avenue	11,100	35	67.5	9	28	89	281
	Mission Avenue to Oceanside Boulevard	9,300	35	66.8	8	24	76	239
Coast Highway	Harbor Drive to SR76	17,300	35	69.5	14	45	141	446
	SR76 to Mission Avenue	18,800	35	69.8	15	48	151	477
	Mission Avenue to Wisconsin Avenue	22,500	35	70.6	18	57	182	574
	Wisconsin Avenue to Oceanside Boulevard	23,300	35	70.8	19	60	190	601
	Oceanside Boulevard to Cassidy Street	23,500	35	70.8	19	60	190	601
	Cassidy Street to Vista Way	21,200	35	70.4	17	55	173	548
	Vista Way to Southern City Limits	19,700	35	70.0	16	50	158	500
College Boulevard	N. River Road to SR76	45,400	55	78.0	100	315	998	3,155
	SR76 to Frazee Road	38,300	55	77.2	83	262	830	2,624
	Frazee Road to Mesa Drive	38,300	55	77.2	83	262	830	2,624
	Mesa Drive to Old Grove Road	33,300	55	76.6	72	229	723	2,285
	Old Grove Road to Avenida de la Plata	37,500	55	77.1	81	256	811	2,564
	Avenida de la Plata to Oceanside Boulevard	40,100	55	77.4	87	275	869	2,748
	Oceanside Boulevard to Olive Drive	51,700	55	78.5	112	354	1,119	3,540
	Olive Drive to Waring Road	37,700	55	77.2	83	262	830	2,624
	Waring Road to Vista Way	51,400	55	78.5	112	354	1,119	3,540
	Vista Way to SR78	57,500	55	79.0	126	397	1,256	3,972
	SR78 to Plaza Drive	56,600	55	78.9	123	388	1,227	3,881
	Plaza Drive to Lake Boulevard	44,400	55	77.9	97	308	975	3,083
	Lake Boulevard to Southern City Limits	41,500	55	77.6	91	288	910	2,877
Douglas Drive	Vandegrift Boulevard to Via Malaguena	13,600	35	68.4	11	35	109	346
	Via Malaguena to Cardiff Bay Drive	13,600	35	68.4	11	35	109	346
	Cardiff Bay Drive to N. River Road	17,900	35	69.6	14	46	144	456
	N. River Road to Pala Road	40,000	55	77.4	87	275	869	2,748
	Pala Road to El Camino Real	42,200	55	77.7	93	294	931	2,944
	El Camino Real to Mission Avenue	24,700	55	75.3	54	169	536	1,694
	Mission Avenue to SR76	25,100	55	75.4	55	173	548	1,734

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2d (cont.): 2030 Traffic Noise Conditions (Alternative 2)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
El Camino Real	Douglas Drive to Mission Avenue	27,800	55	75.8	60	190	601	1,901
	Mission Avenue to Mesa Drive	25,300	55	75.4	55	173	548	1,734
	Mesa Drive to Oceanside Boulevard	39,800	55	77.4	87	275	869	2,748
	Oceanside Boulevard to Fire Mountain Road	45,000	55	77.9	97	308	975	3,083
	Fire Mountain Road to Via Las Rosas	49,000	55	78.3	107	338	1,069	3,380
	Via Las Rosas to Vista Way	60,900	55	79.2	132	416	1,315	4,159
	Vista Way to SR78	72,700	55	80.0	158	500	1,581	5,000
Emerald Drive	Lake Boulevard to Sunset Drive	4,800	35	63.9	4	12	39	123
Frazee Road	Old Grove Road to SR76	5,300	55	68.6	11	36	115	362
	SR76 to College Boulevard	12,700	55	72.4	27	87	275	869
	College Boulevard to Sagewood Drive	6,600	35	65.3	5	17	54	169
Lake Boulevard	College Boulevard to Thunder Drive	19,200	35	69.9	15	49	155	489
	Thunder Drive to Sundown Lane	16,200	35	69.2	13	42	132	416
	Sundown Lane to Sky Haven Lane	16,200	35	69.2	13	42	132	416
	Sky Haven Lane to Cannon Road	14,700	35	68.8	12	38	120	379
Melrose Drive	SR76 to Spur Avenue	7,600	55	70.2	17	52	166	524
	N. Santa Fe Avenue to Oceanside Boulevard	25,200	55	75.4	55	173	548	1,734
	Oceanside Boulevard to City Limits	37,900	55	77.2	83	262	830	2,624
	City Limits to Cannon Road	41,200	55	77.5	89	281	889	2,812
	Cannon Road to Southern City Limits	33,900	55	76.7	74	234	740	2,339
Mesa Drive	Mission Avenue to Foussat Road	11,300	35	67.6	9	29	91	288
	Foussat Road to El Camino Real	8,900	35	66.6	7	23	72	229
	El Camino Real to Rancho Del Oro Drive	18,700	35	69.8	15	48	151	477
	Rancho Del Oro Drive to Old Grove Road	18,500	35	69.8	15	48	151	477
	Old Grove Road to College Boulevard	20,000	35	70.1	16	51	162	512
	College Boulevard to N. Santa Fe Avenue	16,100	35	69.2	13	42	132	416

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2d (cont.): 2030 Traffic Noise Conditions (Alternative 2)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Mission Avenue	Pacific Street to Coast Highway	14,400	35	68.7	12	37	117	371
	Coast Highway to Horne Street	16,900	35	69.4	14	44	138	435
	Horne Street to I-5	27,100	55	75.7	59	186	587	1,858
	I-5 to Canyon Drive	34,900	55	76.8	76	239	757	2,393
	Canyon Drive to Mesa Drive	27,300	55	75.8	60	190	601	1,901
	Mesa Drive to Foussat Road	27,500	55	75.8	60	190	601	1,901
	Foussat Road to El Camino Real	32,200	55	76.5	71	223	706	2,233
	El Camino Real to Douglas Drive	25,600	55	75.5	56	177	561	1,774
	Douglas Drive to Rancho Del Oro Drive	32,300	55	76.5	71	223	706	2,233
	Rancho Del Oro Road to Old Grove Drive	13,400	35	68.4	11	35	109	346
	Old Grove Road to Frazee Road	9,600	35	66.9	8	24	77	245
North Avenue	Olive Drive to Temple Heights Drive	7,700	35	66.0	6	20	63	199
	Temple Heights Drive to Melrose Drive	4,200	35	63.3	3	11	34	107
North River Road	Douglas Drive to College Boulevard	24,600	55	75.3	54	169	536	1,694
	College Boulevard to Vandegrift Boulevard	41,600	55	77.6	91	288	910	2,877
	Vandegrift Boulevard to Stallion Road	12,500	55	72.4	27	87	275	869
	Stallion Road to Melrose Drive	7,100	55	69.9	15	49	155	489
	Melrose Drive to Eastern City Limits	9,500	35	66.9	8	24	77	245
North Santa Fe Avenue	SR76 to Mesa Drive	33,200	55	76.6	72	229	723	2,285
	Mesa Drive to Melrose Drive	23,300	55	75.1	51	162	512	1,618
Oceanside Boulevard	Pacific Street to Coast Highway	8,600	35	66.4	7	22	69	218
	Coast Highway to I-5	21,000	35	70.3	17	54	169	536
	I-5 to Crouch Street	35,400	55	76.9	77	245	774	2,449
	Crouch Street to Foussat Road	40,400	55	77.5	89	281	889	2,812
	Foussat Road to El Camino Real	36,300	55	77.0	79	251	792	2,506
	El Camino Real to Rancho Del Oro Road	41,100	55	77.5	89	281	889	2,812
	Rancho Del Oro Road to College Boulevard	43,900	55	77.8	95	301	953	3,013
	College Boulevard to Melrose Drive	29,200	55	76.1	64	204	644	2,037
	Melrose Drive to Eastern City Limits	31,200	55	76.3	67	213	674	2,133
Old Grove Road	Frazee Road to SR76	8,400	55	70.6	18	57	182	574
	SR76 to Mission Avenue	17,800	55	73.9	39	123	388	1,227
	Mission Avenue to Mesa Drive	17,800	55	73.9	39	123	388	1,227
	Mesa Drive to College Boulevard	25,600	55	75.5	56	177	561	1,774

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 2d (cont.): 2030 Traffic Noise Conditions (Alternative 2)

Roadway	Segment	ADT	Speed (MPH)	SPL	CNEL Contour Distances (feet)			
					75 CNEL	70 CNEL	65 CNEL	60 CNEL
Olive Drive	College Boulevard to Emerald Drive	19,900	35	70.1	16	51	162	512
Pala Road	Los Arbolitos Boulevard to Douglas Drive	3,500	35	62.5	3	9	28	89
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	24,800	35	71.0	20	63	199	629
	SR78 EB on/off-ramps to Eastern City Limits	17,200	35	69.4	14	44	138	435
Rancho Del Oro Drive	Mission Avenue to SR76	10,000	55	71.4	22	69	218	690
	SR76 to Mesa Drive	25,100	55	75.4	55	173	548	1,734
	Mesa Drive to Oceanside Boulevard	27,000	55	75.7	59	186	587	1,858
	Oceanside Boulevard to Cameo Drive	27,800	55	75.8	60	190	601	1,901
	Cameo Drive to Vista Way	24,700	55	75.3	54	169	536	1,694
Vandegrift Boulevard	Northern City Limits to Douglas Drive	26,000	55	75.5	56	177	561	1,774
	Douglas Drive to N. River Road	29,200	55	76.1	64	204	644	2,037
Vista Way	Coast Highway to I-5	17,800	35	69.6	14	46	144	456
	Jefferson Street to El Camino Real	15,800	35	69.1	13	41	129	406
	El Camino Real to Rancho Del Oro Road	23,200	35	70.7	19	59	186	587
	Rancho Del Oro Road to College Boulevard	30,100	35	71.9	24	77	245	774
	College Boulevard to Thunder Drive	20,700	35	70.2	17	52	166	524
State Route 76	I-5 to Canyon Drive	62,600	60	80.3	169	536	1,694	5,358
	Canyon Drive to Foussat Road	67,900	60	80.6	182	574	1,815	5,741
	Foussat Road to Douglas Drive	62,100	60	80.2	166	524	1,656	5,236
	Douglas Drive to Rancho Del Oro Drive	55,700	60	79.8	151	477	1,510	4,775
	Rancho Del Oro Drive to Frazee Road	60,500	60	80.1	162	512	1,618	5,116
	Frazee Road to College Boulevard	53,500	60	79.6	144	456	1,442	4,560
	College Boulevard to N. Santa Fe Avenue	62,500	60	80.3	169	536	1,694	5,358
	N. Santa Fe Avenue to Melrose Drive	68,900	60	80.7	186	587	1,858	5,874
	Melrose Drive to Eastern City Limits	57,800	60	79.9	155	489	1,545	4,886

Traffic Data Source: IBI Group, Inc., 2/11. SPL = Sound Pressure Level in dBA at 50-feet from road edge. CNEL = Community Noise Equivalent Level. ADT = Average Daily Trips.

TABLE 3a: Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Existing Conditions)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
Cannon Road	Melrose Drive to Western City Limits	A	10,400	0.1	1.1	1.3	1.3
Canyon Drive	SR76 to Mission Avenue	A	5,400	0.1	0.9	0.9	0.9
	Mission Avenue to Oceanside Boulevard	C	8,100	0.1	1.0	1.1	1.1
Coast Highway	Harbor Drive to SR76	D	9,000	0.1	1.0	1.2	1.2
	SR76 to Mission Avenue	D	18,300	0.2	1.3	2.0	2.0
	Mission Avenue to Wisconsin Avenue	D	21,600	0.2	1.4	2.3	2.3
	Wisconsin Avenue to Oceanside Boulevard	E	22,100	0.2	1.4	2.3	2.3
	Oceanside Boulevard to Cassidy Street	D	20,400	0.2	1.3	2.2	2.2
	Cassidy Street to Vista Way	D	19,600	0.2	1.3	2.1	2.1
	Vista Way to Southern City Limits	C	17,900	0.2	1.3	2.0	2.0
College Boulevard	N. River Road to SR76	C	38,500	0.3	1.7	3.5	3.5
	SR76 to Frazee Road	D	30,300	0.3	1.6	2.9	2.9
	Frazee Road to Mesa Drive	D	32,700	0.3	1.6	3.1	3.1
	Mesa Drive to Old Grove Road	C	29,000	0.3	1.5	2.8	2.8
	Old Grove Road to Oceanside Boulevard	E	38,200	0.3	1.7	3.5	3.5
	Oceanside Boulevard to Olive Drive	F	46,700	0.4	1.8	4.2	4.1
	Olive Drive to Waring Road	E	35,800	0.3	1.7	3.3	3.3
	Waring Road to Vista Way	D	40,200	0.4	1.7	3.7	3.7
	Vista Way to SR78	C	38,300	0.3	1.7	3.5	3.5
	SR78 to Plaza Drive	D	40,500	0.4	1.7	3.7	3.7
	Plaza Drive to Lake Boulevard	C	33,800	0.3	1.6	3.2	3.2
	Lake Boulevard to Southern City Limits	C	24,300	0.2	1.4	2.5	2.5
Douglas Drive	Vandegrift Boulevard to Via Malaguena	A	8,200	0.1	1.0	1.1	1.1
	Via Malaguena to Cardiff Bay Drive	D	8,200	0.1	1.0	1.1	1.1
	Cardiff Bay Drive to N. River Road	C	14,100	0.2	1.2	1.7	1.7
	N. River Road to Pala Road	D	32,700	0.3	1.6	3.1	3.1
	Pala Road to El Camino Real	D	35,000	0.3	1.6	3.3	3.3
	El Camino Real to Mission Avenue	D	21,000	0.2	1.4	2.2	2.2
	Mission Avenue to SR76	B	20,400	0.2	1.3	2.2	2.2

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3a (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Existing Conditions)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
El Camino Real	Douglas Drive to Mission Avenue	C	22,600	0.2	1.4	2.3	2.3
	Mission Avenue to Mesa Drive	C	21,200	0.2	1.4	2.2	2.2
	Mesa Drive to Oceanside Boulevard	D	33,000	0.3	1.6	3.1	3.1
	Oceanside Boulevard to Fire Mountain Road	C	35,800	0.3	1.7	3.3	3.3
	Fire Mountain Road to Via Las Rosas	C	36,200	0.3	1.7	3.4	3.4
	Via Las Rosas to Vista Way	C	43,700	0.4	1.8	3.9	3.9
	Vista Way to SR78	D	51,100	0.4	1.9	4.5	4.5
Emerald Drive	Lake Boulevard to Sunset Drive	A	2,300	0.1	0.7	0.5	0.5
Frazee Road	Old Grove Road to SR76	A	5,500	0.1	0.9	0.9	0.9
	SR76 to College Boulevard	A	9,300	0.1	1.0	1.2	1.2
	College Boulevard to Sagewood Drive	A	3,600	0.1	0.8	0.7	0.7
Lake Boulevard	College Boulevard to Thunder Drive	B	13,100	0.2	1.2	1.6	1.6
	Thunder Drive to Sundown Lane	E	14,800	0.2	1.2	1.7	1.7
	Sundown Lane to Sky Haven Lane	C	14,800	0.2	1.2	1.7	1.7
	Sky Haven Lane to Cannon Road	B	13,400	0.2	1.2	1.6	1.6
Melrose Drive	SR76 to Spur Avenue	A	9,300	0.1	1.0	1.2	1.2
	N. Santa Fe Avenue to Oceanside Boulevard	A	14,300	0.2	1.2	1.7	1.7
	Oceanside Boulevard to City Limits	B	19,400	0.2	1.3	2.1	2.1
	City Limits to Cannon Road	B	27,400	0.3	1.5	2.7	2.7
	Cannon Road to Southern City Limits	B	30,000	0.3	1.5	2.9	2.9
Mesa Drive	Mission Avenue to Foussat Road	C	5,600	0.1	0.9	0.9	0.9
	Foussat Road to El Camino Real	A	4,700	0.1	0.8	0.8	0.8
	El Camino Real to Rancho Del Oro Road	B	13,300	0.2	1.2	1.6	1.6
	Rancho Del Oro Road to Old Grove Road	B	11,400	0.1	1.1	1.4	1.4
	Old Grove Road to College Boulevard	C	14,800	0.2	1.2	1.7	1.7
	College Boulevard to N. Santa Fe Avenue	B	11,800	0.1	1.1	1.5	1.5

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3a (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Existing Conditions)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Coast Hwy	A	8,500	0.1	1.0	1.2	1.2
	Coast Hwy to Horne Street	A	8,500	0.1	1.0	1.2	1.2
	Horne Street to I-5	B	15,600	0.2	1.2	1.8	1.8
	I-5 to Canyon Drive	C	27,900	0.3	1.5	2.7	2.7
	Canyon Drive to Mesa Drive	C	23,800	0.2	1.4	2.4	2.4
	Mesa Drive to Foussat Road	B	19,500	0.2	1.3	2.1	2.1
	Foussat Road to El Camino Real	C	23,800	0.2	1.4	2.4	2.4
	El Camino Real to Douglas Drive	B	20,200	0.2	1.3	2.2	2.1
	Douglas Drive to Rancho Del Oro Road	C	25,000	0.2	1.4	2.5	2.5
	Rancho Del Oro Road to Old Grove Road	B	10,500	0.1	1.1	1.4	1.3
	Old Grove Road to Frazee Road	A	8,500	0.1	1.0	1.2	1.2
North Avenue	Olive Drive to Temple Heights Drive	B	6,600	0.1	0.9	1.0	1.0
	Temple Heights Drive to Melrose Drive	A	3,800	0.1	0.8	0.7	0.7
North River Road	Douglas Drive to College Boulevard	B	19,500	0.2	1.3	2.1	2.1
	College Boulevard to Vandegrift Boulevard	C	31,900	0.3	1.6	3.1	3.0
	Vandegrift Boulevard to Stallion	D	10,100	0.1	1.1	1.3	1.3
	Stallion Road to Eastern City Limits	B	4,800	0.1	0.8	0.8	0.8
North Santa Fe Avenue	SR76 to Mesa Drive	C	21,800	0.2	1.4	2.3	2.3
	Mesa Drive to Melrose Drive	C	22,700	0.2	1.4	2.3	2.3
	Melrose Drive to Eastern City Limits	C	15,400	0.2	1.2	1.8	1.8
Oceanside Boulevard	Pacific Street to Coast Hwy	B	5,400	0.1	0.9	0.9	0.9
	Coast Highway to I-5	D	21,700	0.2	1.4	2.3	2.3
	I-5 to Crouch Street	E	29,800	0.3	1.5	2.9	2.9
	Crouch Street to Foussat Road	F	31,300	0.3	1.6	3.0	3.0
	Foussat Road to El Camino Real	E	25,900	0.3	1.5	2.6	2.6
	El Camino Real to Rancho Del Oro Road	B	29,900	0.3	1.5	2.9	2.9
	Rancho Del Oro Road to College Boulevard	B	29,700	0.3	1.5	2.9	2.9
	College Boulevard to Melrose Drive	C	25,400	0.3	1.5	2.6	2.6
	Melrose Drive to Eastern City Limits	B	17,900	0.2	1.3	2.0	2.0
Old Grove Road	Frazee Road to SR76	A	7,500	0.1	1.0	1.1	1.1
	SR76 to Mission Avenue	A	10,800	0.1	1.1	1.4	1.4
	Mission Avenue to Mesa Drive	A	11,200	0.1	1.1	1.4	1.4
	Mesa Drive to College Boulevard	A	11,600	0.1	1.1	1.4	1.4

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3a (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Existing Conditions)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Olive Drive	College Boulevard to Emerald Drive	C	16,100	0.2	1.2	1.8	1.8
Pala Road	Los Arbolitos Boulevard to Douglas Drive	A	4,900	0.1	0.8	0.8	0.8
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	C	20,000	0.2	1.3	2.1	2.1
	SR78 EB on/off-ramps to Eastern City Limits	C	14,500	0.2	1.2	1.7	1.7
Rancho Del Oro Drive	Mission Avenue to SR76	A	8,900	0.1	1.0	1.2	1.2
	SR76 to Mesa Drive	A	14,300	0.2	1.2	1.7	1.7
	Mesa Drive to Oceanside Boulevard	A	12,400	0.1	1.1	1.5	1.5
	Oceanside Boulevard to Cameo Drive	A	12,600	0.2	1.1	1.5	1.5
	Cameo Drive to SR78	A	13,700	0.2	1.2	1.6	1.6
Vandegrift Boulevard	Northern City Limits to Douglas Drive	B	21,700	0.2	1.4	2.3	2.3
	Douglas Drive to N. River Road	B	22,800	0.2	1.4	2.4	2.4
Vista Way	Coast Highway to I-5	F	17,400	0.2	1.3	1.9	1.9
	Jefferson Street to El Camino Real	B	13,500	0.2	1.2	1.6	1.6
	El Camino Real to Rancho Del Oro Road	C	14,300	0.2	1.2	1.7	1.7
	Rancho Del Oro Road to College Boulevard	D	20,300	0.2	1.3	2.2	2.2
	College Boulevard to Thunder Drive	C	16,200	0.2	1.2	1.8	1.8
State Route 76	I-5 to Canyon Drive	C	49,500	0.4	1.9	4.4	4.3
	Canyon Drive to Foussat Road	D	54,000	0.5	1.9	4.7	4.7
	Foussat Road to Douglas Drive	D	51,000	0.4	1.9	4.5	4.5
	Douglas Drive to Rancho Del Oro Road	C	45,500	0.4	1.8	4.1	4.1
	Rancho Del Oro Road to Frazee Road	C	44,000	0.4	1.8	4.0	3.9
	Frazee Road to College Boulevard	C	44,000	0.4	1.8	4.0	3.9
	College Boulevard to N. Santa Fe Avenue	C	36,000	0.3	1.7	3.4	3.4
	N. Santa Fe Avenue to Melrose Drive	C	40,000	0.4	1.7	3.7	3.7
	Melrose Drive to Eastern City Limits	F	35,500	0.3	1.6	3.3	3.3

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3b: Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline Scenario)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Cannon Drive	Melrose Drive to Western City Limits	C	29,100	0.1	0.6	2.2	2.2
Canyon Drive	SR76 to Mission Avenue	B	10,700	0.1	0.4	1.1	1.1
	Mission Avenue to Oceanside Boulevard	B	9,300	0.0	0.4	1.0	1.0
Coast Highway	Harbor Drive to SR76	C	17,100	0.1	0.5	1.5	1.5
	SR76 to Mission Avenue	D	20,100	0.1	0.5	1.7	1.7
	Mission Avenue to Wisconsin Avenue	E	23,700	0.1	0.6	1.9	1.9
	Wisconsin Avenue to Oceanside Boulevard	E	23,600	0.1	0.6	1.9	1.9
	Oceanside Boulevard to Cassidy Street	D	21,800	0.1	0.6	1.8	1.8
	Cassidy Street to Vista Way	D	20,900	0.1	0.6	1.7	1.7
	Vista Way to Southern City Limits	D	19,700	0.1	0.5	1.7	1.6
College Boulevard	N. River Road to SR76	D	42,200	0.1	0.7	3.0	3.0
	SR76 to Frazee Road	E	36,300	0.1	0.7	2.6	2.6
	Frazee Road to Mesa Drive	E	36,900	0.1	0.7	2.7	2.7
	Mesa Drive to Old Grove Road	D	32,600	0.1	0.7	2.4	2.4
	Old Grove Road to Avenida de la Plata	C	39,000	0.1	0.7	2.8	2.8
	Avenida de la Plata to Oceanside Boulevard	D	42,500	0.1	0.7	3.0	3.0
	Oceanside Boulevard to Olive Drive	F	52,000	0.2	0.8	3.6	3.5
	Olive Drive to Waring Road	C	40,000	0.1	0.7	2.9	2.9
	Waring Road to Vista Way	E	45,800	0.1	0.7	3.2	3.2
	Vista Way to SR78	E	47,100	0.2	0.8	3.3	3.3
	SR78 to Plaza Drive	E	49,300	0.2	0.8	3.4	3.4
	Plaza Drive to Lake Boulevard	C	39,300	0.1	0.7	2.8	2.8
	Lake Boulevard to Southern City Limits	F	41,400	0.1	0.7	2.9	2.9
Douglas Drive	Vandegrift Boulevard to Cardiff Bay Drive	B	13,300	0.1	0.5	1.2	1.2
	Cardiff Bay Drive to N. River Road	C	17,500	0.1	0.5	1.5	1.5
	N. River Road to Pala Road	E	38,500	0.1	0.7	2.8	2.8
	Pala Road to El Camino Real	E	38,400	0.1	0.7	2.8	2.8
	El Camino Real to Mission Avenue	C	23,900	0.1	0.6	1.9	1.9
	Mission Avenue to SR76	C	25,400	0.1	0.6	2.0	2.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3b (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline Scenario)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
El Camino Real	Douglas Drive to Mission Avenue	C	25,400	0.1	0.6	2.0	2.0
	Mission Avenue to Mesa Drive	C	25,500	0.1	0.6	2.0	2.0
	Mesa Drive to Oceanside Boulevard	E	39,600	0.1	0.7	2.8	2.8
	Oceanside Boulevard to Fire Mountain Road	C	43,100	0.1	0.7	3.0	3.0
	Fire Mountain Road to Via Las Rosas	C	48,200	0.2	0.8	3.3	3.3
	Via Las Rosas to Vista Way	D	53,600	0.2	0.8	3.6	3.6
	Vista Way to SR78	E	58,900	0.2	0.8	3.9	3.9
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,200	0.0	0.3	0.6	0.6
Frazee Road	Old Grove Road to SR76	A	5,700	0.0	0.4	0.7	0.7
	SR76 to College Boulevard	A	12,000	0.1	0.5	1.2	1.2
	College Boulevard to Sagewood Drive	B	5,200	0.0	0.4	0.7	0.7
Lake Boulevard	College Boulevard to Thunder Drive	C	19,500	0.1	0.5	1.6	1.6
	Thunder Drive to Sundown Lane	C	16,200	0.1	0.5	1.4	1.4
	Sundown Lane to Sky Haven Lane	C	16,200	0.1	0.5	1.4	1.4
	Sky Haven Lane to Cannon Road	C	14,700	0.1	0.5	1.3	1.3
Melrose Drive	N. River Road to SR76	A	13,100	0.1	0.5	1.2	1.2
	SR76 to N. Santa Fe Avenue	B	26,500	0.1	0.6	2.1	2.1
	N. Santa Fe Avenue to Oceanside Boulevard	C	36,600	0.1	0.7	2.7	2.7
	Oceanside Boulevard to City Limits	C	43,800	0.1	0.7	3.1	3.1
	City Limits to Cannon Road	B	32,100	0.1	0.7	2.4	2.4
	Cannon Road to Southern City Limits	B	34,100	0.1	0.7	2.5	2.5
Mesa Drive	Mission Avenue to Foussat Road	F	11,100	0.1	0.4	1.1	1.1
	Foussat Road to El Camino Real	C	8,800	0.0	0.4	0.9	0.9
	El Camino Real to Rancho Del Oro Drive	C	17,300	0.1	0.5	1.5	1.5
	Rancho Del Oro Drive to Old Grove Road	C	18,100	0.1	0.5	1.6	1.5
	Old Grove Road to College Boulevard	C	18,700	0.1	0.5	1.6	1.6
	College Boulevard to N. Santa Fe Avenue	C	15,100	0.1	0.5	1.4	1.4

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3b (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline Scenario)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Coast Highway	C	14,400	0.1	0.5	1.3	1.3
	Coast Highway to Horne Street	B	16,800	0.1	0.5	1.5	1.5
	Horne Street to I-5	C	27,000	0.1	0.6	2.1	2.1
	I-5 to Canyon Drive	D	34,600	0.1	0.7	2.5	2.5
	Canyon Drive to Mesa Drive	C	27,000	0.1	0.6	2.1	2.1
	Mesa Drive to Foussat Road	C	27,200	0.1	0.6	2.1	2.1
	Foussat Road to El Camino Real	C	29,400	0.1	0.6	2.2	2.2
	El Camino Real to Douglas Drive	C	25,300	0.1	0.6	2.0	2.0
	Douglas Drive to Rancho Del Oro Drive	D	31,000	0.1	0.6	2.3	2.3
	Rancho Del Oro Road to Old Grove Drive	B	12,900	0.1	0.5	1.2	1.2
	Old Grove Road to Frazee Road	A	9,100	0.0	0.4	1.0	1.0
North Avenue	Olive Drive to Temple Heights Drive	A	7,800	0.0	0.4	0.9	0.9
	Temple Heights Dr to Melrose Drive	A	3,900	0.0	0.3	0.6	0.6
North River Road	Douglas Drive to College Boulevard	C	23,400	0.1	0.6	1.9	1.9
	College Boulevard to Vandegrift Boulevard	D	38,300	0.1	0.7	2.8	2.8
	Vandegrift Boulevard to Stallion Road	A	9,700	0.0	0.4	1.0	1.0
	Stallion Road to Melrose Drive	A	10,600	0.0	0.4	1.1	1.1
	Melrose Drive to Eastern City Limits	B	12,900	0.1	0.5	1.2	1.2
North Santa Fe Avenue	SR76 to Mesa Drive	C	25,700	0.1	0.6	2.0	2.0
	Mesa Drive to Melrose Drive	C	27,500	0.1	0.6	2.1	2.1
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,700	0.0	0.4	0.9	0.9
	Coast Highway to I-5	D	21,100	0.1	0.6	1.7	1.7
	I-5 to Crouch Street	D	32,600	0.1	0.7	2.4	2.4
	Crouch Street to Foussat Road	E	37,900	0.1	0.7	2.7	2.7
	Foussat Road to El Camino Real	D	33,800	0.1	0.7	2.5	2.5
	El Camino Real to Rancho Del Oro Road	C	37,100	0.1	0.7	2.7	2.7
	Rancho Del Oro Road to College Boulevard	C	41,400	0.1	0.7	2.9	2.9
	College Boulevard to Melrose Drive	C	29,500	0.1	0.6	2.2	2.2
	Melrose Drive to Eastern City Limits	C	28,000	0.1	0.6	2.2	2.2
Old Grove Road	Frazee Road to SR76	A	8,000	0.0	0.4	0.9	0.9
	SR76 to Mission Avenue	B	17,800	0.1	0.5	1.5	1.5
	Mission Avenue to Mesa Drive	B	17,700	0.1	0.5	1.5	1.5
	Mesa Drive to College Boulevard	C	24,900	0.1	0.6	2.0	2.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3b (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline Scenario)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Olive Drive	College Boulevard to Emerald Drive	C	17,700	0.1	0.5	1.5	1.5
Pala Road	Foussat Road Los Arbolitos Boulevard	A	7,000	0.0	0.4	0.8	0.8
	Los Arbolitos Boulevard to Douglas Drive	A	8,300	0.0	0.4	0.9	0.9
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	22,100	0.1	0.6	1.8	1.8
	SR78 EB on/off-ramps to Eastern City Limits	C	16,000	0.1	0.5	1.4	1.4
Rancho Del Oro Drive	Mission Avenue to SR76	A	9,000	0.0	0.4	1.0	1.0
	SR76 to Mesa Drive	C	24,200	0.1	0.6	1.9	1.9
	Mesa Drive to Oceanside Boulevard	C	26,500	0.1	0.6	2.1	2.1
	Oceanside Boulevard to Cameo Drive	D	32,400	0.1	0.7	2.4	2.4
	Cameo Drive to SR78	D	30,800	0.1	0.6	2.3	2.3
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	0.1	0.6	2.0	2.0
	Douglas Drive to N. River Road	C	27,600	0.1	0.6	2.1	2.1
Vista Way	Coast Highway to I-5	C	18,100	0.1	0.5	1.6	1.5
	Jefferson Street to El Camino Real	C	15,400	0.1	0.5	1.4	1.4
	El Camino Real to Rancho Del Oro Road	C	18,100	0.1	0.5	1.6	1.5
	Rancho Del Oro Road to College Boulevard	D	24,600	0.1	0.6	2.0	1.9
	College Boulevard to Thunder Drive	C	19,200	0.1	0.5	1.6	1.6
State Route 76	I-5 to Canyon Drive	D	60,700	0.2	0.8	4.0	4.0
	Canyon Drive to Foussat Road	D	65,900	0.2	0.9	4.3	4.3
	Foussat Road to Douglas Drive	C	59,800	0.2	0.8	4.0	4.0
	Douglas Drive to Rancho Del Oro Drive	C	54,100	0.2	0.8	3.7	3.7
	Rancho Del Oro Drive to Frazee Road	C	58,200	0.2	0.8	3.9	3.9
	Frazee Road to College Boulevard	C	51,500	0.2	0.8	3.5	3.5
	College Boulevard to N. Santa Fe Avenue	C	56,200	0.2	0.8	3.8	3.8
	N. Santa Fe Avenue to Melrose Drive	C	58,000	0.2	0.8	3.9	3.9
	Melrose Drive to Eastern City Limits	F	61,800	0.2	0.8	4.1	4.1

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3c: Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
Cannon Road	Melrose Drive to Western City Limits	C	28,300	0.1	0.6	2.2	2.2
Canyon Drive	SR76 to Mission Avenue	B	10,700	0.1	0.4	1.1	1.1
	Mission Avenue to Oceanside Boulevard	B	9,300	0.0	0.4	1.0	1.0
Coast Highway	Harbor Drive to SR76	C	16,600	0.1	0.5	1.5	1.5
	SR76 to Mission Avenue	D	18,100	0.1	0.5	1.6	1.5
	Mission Avenue to Wisconsin Avenue	D	21,600	0.1	0.6	1.8	1.8
	Wisconsin Avenue to Oceanside Boulevard	E	23,300	0.1	0.6	1.9	1.9
	Oceanside Boulevard to Cassidy Street	D	21,900	0.1	0.6	1.8	1.8
	Cassidy Street to Vista Way	D	19,700	0.1	0.5	1.7	1.6
	Vista Way to Southern City Limits	C	17,700	0.1	0.5	1.5	1.5
College Boulevard	N. River Road to SR76	D	44,900	0.1	0.7	3.1	3.1
	SR76 to Frazee Road	E	36,100	0.1	0.7	2.6	2.6
	Frazee Road to Mesa Drive	E	36,700	0.1	0.7	2.7	2.7
	Mesa Drive to Old Grove Road	D	31,100	0.1	0.6	2.3	2.3
	Old Grove Road to Avenida de la Plata	E	37,500	0.1	0.7	2.7	2.7
	Avenida de la Plata to Oceanside Boulevard	D	40,100	0.1	0.7	2.9	2.9
	Oceanside Boulevard to Olive Drive	E	47,700	0.2	0.8	3.3	3.3
	Olive Drive to Waring Road	E	35,900	0.1	0.7	2.6	2.6
	Waring Road to Vista Way	D	43,900	0.1	0.7	3.1	3.1
	Vista Way to SR78	E	45,800	0.1	0.7	3.2	3.2
	SR78 to Plaza Drive	E	49,000	0.2	0.8	3.4	3.4
	Plaza Drive to Lake Boulevard	C	39,100	0.1	0.7	2.8	2.8
	Lake Boulevard to Southern City Limits	F	41,500	0.1	0.7	3.0	2.9
Douglas Drive	Vandegrift Boulevard to Via Malaguena	B	13,600	0.1	0.5	1.3	1.3
	Via Malaguena to Cardiff Bay Drive	E	13,600	0.1	0.5	1.3	1.3
	Cardiff Bay Drive to N. River Road	C	18,000	0.1	0.5	1.5	1.5
	N. River Road to Pala Road	F	40,100	0.1	0.7	2.9	2.9
	Pala Road to El Camino Real	E	39,500	0.1	0.7	2.8	2.8
	El Camino Real to Mission Ave	C	24,000	0.1	0.6	1.9	1.9
	Mission Avenue to SR76	C	25,600	0.1	0.6	2.0	2.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3c (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
El Camino Real	Douglas Drive to Mission Avenue	C	25,900	0.1	0.6	2.0	2.0
	Mission Avenue to Mesa Drive	C	25,800	0.1	0.6	2.0	2.0
	Mesa Drive to Oceanside Boulevard	E	39,700	0.1	0.7	2.8	2.8
	Oceanside Boulevard to Fire Mountain Road	C	43,400	0.1	0.7	3.1	3.1
	Fire Mountain Road to Via Las Rosas	C	48,400	0.2	0.8	3.3	3.3
	Via Las Rosas to Vista Way	D	53,700	0.2	0.8	3.7	3.6
	Vista Way to SR78	E	59,000	0.2	0.8	4.0	3.9
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,300	0.0	0.3	0.6	0.6
Frazee Road	Old Grove Road to SR76	A	5,800	0.0	0.4	0.7	0.7
	SR76 to College Boulevard	A	12,100	0.1	0.5	1.2	1.2
	College Boulevard to Sagewood Drive	B	5,400	0.0	0.4	0.7	0.7
Lake Boulevard	College Boulevard to Thunder Drive	C	19,300	0.1	0.5	1.6	1.6
	Thunder Drive to Sundown Lane	F	16,100	0.1	0.5	1.4	1.4
	Sundown Lane to Sky Haven Lane	C	16,100	0.1	0.5	1.4	1.4
	Sky Haven Lane to Cannon Road	C	14,600	0.1	0.5	1.3	1.3
Melrose Drive	SR76 to N. Santa Fe Avenue	B	23,200	0.1	0.6	1.9	1.9
	N. Santa Fe Avenue to Oceanside Boulevard	C	36,600	0.1	0.7	2.7	2.7
	Oceanside Boulevard to City Limits	C	43,800	0.1	0.7	3.1	3.1
	City Limits to Cannon Road	B	32,100	0.1	0.7	2.4	2.4
	Cannon Road to Southern City Limits	B	34,100	0.1	0.7	2.5	2.5
Mesa Drive	Mission Avenue to Foussat Road	F	11,100	0.1	0.4	1.1	1.1
	Foussat Road to El Camino Real	C	8,700	0.0	0.4	0.9	0.9
	El Camino Real to Rancho Del Oro Drive	C	17,300	0.1	0.5	1.5	1.5
	Rancho Del Oro Drive to Old Grove Road	C	18,100	0.1	0.5	1.6	1.5
	Old Grove Road to College Boulevard	C	18,600	0.1	0.5	1.6	1.6
	College Boulevard to N. Santa Fe Avenue	C	14,900	0.1	0.5	1.3	1.3

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3c (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
Mission Avenue	Pacific Street to Cleveland Street	C	14,400	0.1	0.5	1.3	1.3
	Cleveland Street to Coast Highway	C	7,200	0.0	0.4	0.8	0.8
	Coast Highway to Clementine Street	D	11,500	0.1	0.5	1.1	1.1
	Clementine Street to Horne Street	D	21,400	0.1	0.6	1.8	1.8
	Horne Street to I-5	C	27,000	0.1	0.6	2.1	2.1
	I-5 to Canyon Drive	D	35,000	0.1	0.7	2.6	2.6
	Canyon Drive to Mesa Drive	C	27,400	0.1	0.6	2.1	2.1
	Mesa Drive to Foussat Road	C	27,400	0.1	0.6	2.1	2.1
	Foussat Road to El Camino Real	C	29,500	0.1	0.6	2.2	2.2
	El Camino Real to Douglas Drive	C	25,400	0.1	0.6	2.0	2.0
	Douglas Drive to Rancho Del Oro Drive	D	31,600	0.1	0.6	2.4	2.4
	Rancho Del Oro Drive to Old Grove Road	B	12,900	0.1	0.5	1.2	1.2
	Old Grove Road to Frazee Road	A	9,100	0.0	0.4	1.0	1.0
North Avenue	Olive Drive to Temple Heights Drive	A	7,900	0.0	0.4	0.9	0.9
	Temple Heights Drive to Melrose Drive	A	4,100	0.0	0.3	0.6	0.6
North River Road	Douglas Drive to College Boulevard	C	24,500	0.1	0.6	1.9	1.9
	College Boulevard to Vandegrift Boulevard	E	42,300	0.1	0.7	3.0	3.0
	Vandegrift Boulevard to Stallion Road	A	10,800	0.1	0.4	1.1	1.1
	Stallion Road to Melrose Dr	A	7,000	0.0	0.4	0.8	0.8
	Melrose Drive to Eastern City Limits	A	9,400	0.0	0.4	1.0	1.0
North Santa Fe Avenue	SR76 to Mesa Drive	C	26,800	0.1	0.6	2.1	2.1
	Mesa Drive to Melrose Drive	C	28,600	0.1	0.6	2.2	2.2
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,500	0.0	0.4	0.9	0.9
	Coast Highway to I-5	D	21,100	0.1	0.6	1.7	1.7
	I-5 to Crouch Street	D	32,700	0.1	0.7	2.4	2.4
	Crouch Street to Foussat Road	E	38,000	0.1	0.7	2.7	2.7
	Foussat Road to El Camino Real	D	33,900	0.1	0.7	2.5	2.5
	El Camino Real to Rancho Del Oro Road	C	37,100	0.1	0.7	2.7	2.7
	Rancho Del Oro Road to College Boulevard	C	41,400	0.1	0.7	2.9	2.9
	College Boulevard to Melrose Drive	C	29,400	0.1	0.6	2.2	2.2
	Melrose Drive to Eastern City Limits	C	28,200	0.1	0.6	2.2	2.2

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3c (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Old Grove Road	Frazee Road to SR76	A	8,000	0.0	0.4	0.9	0.9
	SR76 to Mission Avenue	B	17,900	0.1	0.5	1.5	1.5
	Mission Avenue to Mesa Drive	B	17,800	0.1	0.5	1.5	1.5
	Mesa Drive to College Boulevard	C	24,900	0.1	0.6	2.0	2.0
Olive Drive	College Boulevard to Emerald Drive	C	18,600	0.1	0.5	1.6	1.6
Pala Road	Foussat Road Los Arbolitos Boulevard	A	7,500	0.0	0.4	0.8	0.8
	Los Arbolitos Boulevard to Douglas Drive	A	8,800	0.0	0.4	0.9	0.9
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	22,200	0.1	0.6	1.8	1.8
	SR78 EB on/off-ramps to Eastern City Limits	C	16,000	0.1	0.5	1.4	1.4
Rancho Del Oro Drive	Mission Avenue to SR76	A	9,300	0.0	0.4	1.0	1.0
	SR76 to Mesa Drive	C	24,400	0.1	0.6	1.9	1.9
	Mesa Drive to Oceanside Boulevard	C	26,700	0.1	0.6	2.1	2.1
	Oceanside Boulevard to Cameo Drive	D	32,700	0.1	0.7	2.4	2.4
	Cameo Drive to SR78	D	31,100	0.1	0.6	2.3	2.3
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	0.1	0.6	2.0	2.0
	Douglas Drive to N. River Road	C	29,100	0.1	0.6	2.2	2.2
Vista Way	Coast Highway to I-5	F	18,200	0.1	0.5	1.6	1.6
	Jefferson Street to El Camino Real	C	15,400	0.1	0.5	1.4	1.4
	El Camino Real to Rancho Del Oro Road	C	18,200	0.1	0.5	1.6	1.6
	Rancho Del Oro Road to College Boulevard	D	24,600	0.1	0.6	2.0	1.9
	College Boulevard to Thunder Drive	C	18,800	0.1	0.5	1.6	1.6
State Route 76	I-5 to Canyon Drive	D	60,800	0.2	0.8	4.1	4.0
	Canyon Drive to Foussat Road	D	66,100	0.2	0.9	4.4	4.3
	Foussat Road to Douglas Drive	C	59,800	0.2	0.8	4.0	4.0
	Douglas Drive to Rancho Del Oro Drive	C	53,800	0.2	0.8	3.7	3.6
	Rancho Del Oro Drive to Frazee Road	C	57,900	0.2	0.8	3.9	3.9
	Frazee Road to College Boulevard	C	51,100	0.2	0.8	3.5	3.5
	College Boulevard to N. Santa Fe Avenue	C	57,500	0.2	0.8	3.9	3.9
	N. Santa Fe Avenue to Melrose Drive	C	57,700	0.2	0.8	3.9	3.9
	Melrose Drive to Eastern City Limits	F	65,000	0.2	0.9	4.3	4.3

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3d: Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ ($\mu g/m^3$)
Cannon Road	Melrose Drive to Western City Limits	C	28,300	0.1	0.6	2.2	2.2
Canyon Drive	SR76 to Mission Avenue	B	11,100	0.1	0.4	1.1	1.1
	Mission Avenue to Oceanside Boulevard	B	9,300	0.0	0.4	1.0	1.0
Coast Highway	Harbor Drive to SR76	F	17,300	0.1	0.5	1.5	1.5
	SR76 to Mission Avenue	F	18,800	0.1	0.5	1.6	1.6
	Mission Avenue to Wisconsin Avenue	F	22,500	0.1	0.6	1.8	1.8
	Wisconsin Avenue to Oceanside Boulevard	F	23,300	0.1	0.6	1.9	1.9
	Oceanside Boulevard to Cassidy Street	F	23,500	0.1	0.6	1.9	1.9
	Cassidy Street to Vista Way	F	21,200	0.1	0.6	1.7	1.7
	Vista Way to Southern City Limits	F	19,700	0.1	0.5	1.7	1.6
College Boulevard	N. River Road to SR76	E	45,400	0.1	0.7	3.2	3.2
	SR76 to Frazee Road	E	38,300	0.1	0.7	2.8	2.8
	Frazee Road to Mesa Drive	E	38,300	0.1	0.7	2.8	2.8
	Mesa Drive to Old Grove Road	D	33,300	0.1	0.7	2.5	2.5
	Old Grove Road to Avenida de la Plata	E	37,500	0.1	0.7	2.7	2.7
	Avenida de la Plata to Oceanside Boulevard	D	40,100	0.1	0.7	2.9	2.9
	Oceanside Boulevard to Olive Drive	F	51,700	0.2	0.8	3.5	3.5
	Olive Drive to Waring Road	E	37,700	0.1	0.7	2.7	2.7
	Waring Road to Vista Way	F	51,400	0.2	0.8	3.5	3.5
	Vista Way to SR78	F	57,500	0.2	0.8	3.9	3.9
	SR78 to Plaza Drive	F	56,600	0.2	0.8	3.8	3.8
	Plaza Drive to Lake Boulevard	D	44,400	0.1	0.7	3.1	3.1
	Lake Boulevard to Southern City Limits	F	41,500	0.1	0.7	3.0	2.9
Douglas Drive	Vandegrift Boulevard to Via Malaguena	B	13,600	0.1	0.5	1.3	1.3
	Via Malaguena to Cardiff Bay Drive	E	13,600	0.1	0.5	1.3	1.3
	Cardiff Bay Drive to N. River Road	C	17,900	0.1	0.5	1.5	1.5
	N. River Road to Pala Road	E	40,000	0.1	0.7	2.9	2.9
	Pala Road to El Camino Real	F	42,200	0.1	0.7	3.0	3.0
	El Camino Real to Mission Avenue	C	24,700	0.1	0.6	2.0	2.0
	Mission Avenue to SR76	C	25,100	0.1	0.6	2.0	2.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter ($\mu g/m^3$).

TABLE 3d (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
El Camino Real	Douglas Drive to Mission Avenue	C	27,800	0.1	0.6	2.1	2.1
	Mission Avenue to Mesa Drive	C	25,300	0.1	0.6	2.0	2.0
	Mesa Drive to Oceanside Boulevard	E	39,800	0.1	0.7	2.9	2.8
	Oceanside Boulevard to Fire Mountain Road	C	45,000	0.1	0.7	3.2	3.1
	Fire Mountain Road to Via Las Rosas	C	49,000	0.2	0.8	3.4	3.4
	Via Las Rosas to Vista Way	F	60,900	0.2	0.8	4.1	4.1
	Vista Way to SR78	F	72,700	0.2	0.9	4.7	4.7
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,800	0.0	0.3	0.6	0.6
Frazee Road	Old Grove Road to SR76	A	5,300	0.0	0.4	0.7	0.7
	SR76 to College Boulevard	A	12,700	0.1	0.5	1.2	1.2
	College Boulevard to Sagewood Drive	C	6,600	0.0	0.4	0.8	0.8
Lake Boulevard	College Boulevard to Thunder Drive	C	19,200	0.1	0.5	1.6	1.6
	Thunder Drive to Sundown Lane	F	16,200	0.1	0.5	1.4	1.4
	Sundown Lane to Sky Haven Lane	C	16,200	0.1	0.5	1.4	1.4
	Sky Haven Lane to Cannon Road	C	14,700	0.1	0.5	1.3	1.3
Melrose Drive	SR76 to Spur Avenue	A	7,600	0.0	0.4	0.9	0.9
	N. Santa Fe Avenue to Oceanside Boulevard	B	25,200	0.1	0.6	2.0	2.0
	Oceanside Boulevard to City Limits	C	37,900	0.1	0.7	2.7	2.7
	City Limits to Cannon Road	C	41,200	0.1	0.7	2.9	2.9
	Cannon Road to Southern City Limits	B	33,900	0.1	0.7	2.5	2.5
Mesa Drive	Mission Avenue to Foussat Road	F	11,300	0.1	0.4	1.1	1.1
	Foussat Road to El Camino Real	C	8,900	0.0	0.4	0.9	0.9
	El Camino Real to Rancho Del Oro Drive	C	18,700	0.1	0.5	1.6	1.6
	Rancho Del Oro Drive to Old Grove Road	C	18,500	0.1	0.5	1.6	1.6
	Old Grove Road to College Boulevard	C	20,000	0.1	0.5	1.7	1.7
	College Boulevard to N. Santa Fe Avenue	C	16,100	0.1	0.5	1.4	1.4

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3d (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Coast Highway	C	14,400	0.1	0.5	1.3	1.3
	Coast Highway to Horne Street	C	16,900	0.1	0.5	1.5	1.5
	Horne Street to I-5	C	27,100	0.1	0.6	2.1	2.1
	I-5 to Canyon Drive	D	34,900	0.1	0.7	2.6	2.6
	Canyon Drive to Mesa Drive	C	27,300	0.1	0.6	2.1	2.1
	Mesa Drive to Foussat Road	C	27,500	0.1	0.6	2.1	2.1
	Foussat Road to El Camino Real	D	32,200	0.1	0.7	2.4	2.4
	El Camino Real to Douglas Drive	C	25,600	0.1	0.6	2.0	2.0
	Douglas Drive to Rancho Del Oro Drive	D	32,300	0.1	0.7	2.4	2.4
	Rancho Del Oro Road to Old Grove Drive	C	13,400	0.1	0.5	1.3	1.2
	Old Grove Road to Frazee Road	A	9,600	0.0	0.4	1.0	1.0
North Avenue	Olive Drive to Temple Heights Drive	A	7,700	0.0	0.4	0.9	0.9
	Temple Heights Drive to Melrose Drive	A	4,200	0.0	0.3	0.6	0.6
North River Road	Douglas Drive to College Boulevard	C	24,600	0.1	0.6	2.0	1.9
	College Boulevard to Vandegrift Boulevard	E	41,600	0.1	0.7	3.0	3.0
	Vandegrift Boulevard to Stallion Road	A	12,500	0.1	0.5	1.2	1.2
	Stallion Road to Melrose Drive	A	7,100	0.0	0.4	0.8	0.8
	Melrose Drive to Eastern City Limits	A	9,500	0.0	0.4	1.0	1.0
North Santa Fe Avenue	SR76 to Mesa Drive	D	33,200	0.1	0.7	2.5	2.5
	Mesa Drive to Melrose Drive	C	23,300	0.1	0.6	1.9	1.9
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,600	0.0	0.4	0.9	0.9
	Coast Highway to I-5	D	21,000	0.1	0.6	1.7	1.7
	I-5 to Crouch Street	E	35,400	0.1	0.7	2.6	2.6
	Crouch Street to Foussat Road	F	40,400	0.1	0.7	2.9	2.9
	Foussat Road to El Camino Real	E	36,300	0.1	0.7	2.6	2.6
	El Camino Real to Rancho Del Oro Road	C	41,100	0.1	0.7	2.9	2.9
	Rancho Del Oro Road to College Boulevard	C	43,900	0.1	0.7	3.1	3.1
	College Boulevard to Melrose Drive	C	29,200	0.1	0.6	2.2	2.2
	Melrose Drive to Eastern City Limits	D	31,200	0.1	0.6	2.3	2.3
Old Grove Road	Frazee Road to SR76	A	8,400	0.0	0.4	0.9	0.9
	SR76 to Mission Avenue	B	17,800	0.1	0.5	1.5	1.5
	Mission Avenue to Mesa Drive	B	17,800	0.1	0.5	1.5	1.5
	Mesa Drive to College Boulevard	C	25,600	0.1	0.6	2.0	2.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 3d (cont.): Roadway Segment Incremental Increases for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2)

Roadway	Segment	LOS	ADT	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Olive Drive	College Boulevard to Emerald Drive	C	19,900	0.1	0.5	1.7	1.7
Pala Road	Los Arbolitos Boulevard to Douglas Drive	A	3,500	0.0	0.3	0.5	0.5
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	24,800	0.1	0.6	2.0	2.0
	SR78 EB on/off-ramps to Eastern City Limits	C	17,200	0.1	0.5	1.5	1.5
Rancho Del Oro Drive	Mission Avenue to SR76	A	10,000	0.0	0.4	1.0	1.0
	SR76 to Mesa Drive	C	25,100	0.1	0.6	2.0	2.0
	Mesa Drive to Oceanside Boulevard	C	27,000	0.1	0.6	2.1	2.1
	Oceanside Boulevard to Cameo Drive	C	27,800	0.1	0.6	2.1	2.1
	Cameo Drive to Vista Way	C	24,700	0.1	0.6	2.0	2.0
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	0.1	0.6	2.0	2.0
	Douglas Drive to N. River Road	C	29,200	0.1	0.6	2.2	2.2
Vista Way	Coast Highway to I-5	F	17,800	0.1	0.5	1.5	1.5
	Jefferson Street to El Camino Real	C	15,800	0.1	0.5	1.4	1.4
	El Camino Real to Rancho Del Oro Road	D	23,200	0.1	0.6	1.9	1.9
	Rancho Del Oro Road to College Boulevard	F	30,100	0.1	0.6	2.3	2.3
	College Boulevard to Thunder Drive	D	20,700	0.1	0.6	1.7	1.7
State Route 76	I-5 to Canyon Drive	D	62,600	0.2	0.8	4.2	4.1
	Canyon Drive to Foussat Road	D	67,900	0.2	0.9	4.5	4.4
	Foussat Road to Douglas Drive	D	62,100	0.2	0.8	4.1	4.1
	Douglas Drive to Rancho Del Oro Drive	C	55,700	0.2	0.8	3.8	3.8
	Rancho Del Oro Drive to Frazee Road	D	60,500	0.2	0.8	4.0	4.0
	Frazee Road to College Boulevard	C	53,500	0.2	0.8	3.6	3.6
	College Boulevard to N. Santa Fe Avenue	D	62,500	0.2	0.8	4.2	4.1
	N. Santa Fe Avenue to Melrose Drive	D	68,900	0.2	0.9	4.5	4.5
	Melrose Drive to Eastern City Limits	E	57,800	0.2	0.8	3.9	3.9

Traffic Data Source: IBI Group, Inc., 2/11. All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 4a: Roadway Segment GHG Emissions per Vehicle Mile per Day (Existing Conditions)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Cannon Road	Melrose Drive to Western City Limits	A	10,400	8,399.1	5.6	10,046.7
Canyon Drive	SR76 to Mission Avenue	A	5,400	4,361.1	2.9	5,216.5
	Mission Avenue to Oceanside Boulevard	C	8,100	6,541.6	4.3	7,824.8
Coast Highway	Harbor Drive to SR76	D	9,000	7,268.4	4.8	8,694.2
	SR76 to Mission Avenue	D	18,300	14,779.2	9.8	17,678.3
	Mission Avenue to Wisconsin Avenue	D	21,600	17,444.3	11.6	20,866.2
	Wisconsin Avenue to Oceanside Boulevard	E	22,100	17,848.1	11.8	21,349.2
	Oceanside Boulevard to Cassidy Street	D	20,400	16,475.2	10.9	19,707.0
	Cassidy Street to Vista Way	D	19,600	15,829.1	10.5	18,934.1
	Vista Way to Southern City Limits	C	17,900	14,456.1	9.6	17,291.9
College Boulevard	N. River Road to SR76	C	38,500	31,092.8	20.6	37,192.1
	SR76 to Frazee Road	D	30,300	24,470.4	16.2	29,270.6
	Frazee Road to Mesa Drive	D	32,700	26,408.7	17.5	31,589.1
	Mesa Drive to Old Grove Road	C	29,000	23,420.6	15.5	28,014.8
	Old Grove Road to Oceanside Boulevard	E	38,200	30,850.5	20.4	36,902.3
	Oceanside Boulevard to Olive Drive	F	46,700	37,715.2	25.0	45,113.5
	Olive Drive to Waring Road	E	35,800	28,912.3	19.2	34,583.8
	Waring Road to Vista Way	D	40,200	32,465.7	21.5	38,834.3
	Vista Way to SR78	C	38,300	30,931.3	20.5	36,998.9
	SR78 to Plaza Drive	D	40,500	32,708.0	21.7	39,124.1
	Plaza Drive to Lake Boulevard	C	33,800	27,297.1	18.1	32,651.7
	Lake Boulevard to Southern City Limits	C	24,300	19,624.8	13.0	23,474.5
Douglas Drive	Vandegrift Boulevard to Via Malaguena	A	8,200	6,622.4	4.4	7,921.4
	Via Malaguena to Cardiff Bay Drive	D	8,200	6,622.4	4.4	7,921.4
	Cardiff Bay Drive to N. River Road	C	14,100	11,387.2	7.5	13,621.0
	N. River Road to Pala Road	D	32,700	26,408.7	17.5	31,589.1
	Pala Road to El Camino Real	D	35,000	28,266.2	18.7	33,811.0
	El Camino Real to Mission Avenue	D	21,000	16,959.7	11.2	20,286.6
	Mission Avenue to SR76	B	20,400	16,475.2	10.9	19,707.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4a (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Existing Conditions)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
El Camino Real	Douglas Drive to Mission Avenue	C	22,600	18,251.9	12.1	21,832.2
	Mission Avenue to Mesa Drive	C	21,200	17,121.2	11.3	20,479.8
	Mesa Drive to Oceanside Boulevard	D	33,000	26,651.0	17.7	31,878.9
	Oceanside Boulevard to Fire Mountain Road	C	35,800	28,912.3	19.2	34,583.8
	Fire Mountain Road to Via Las Rosas	C	36,200	29,235.3	19.4	34,970.2
	Via Las Rosas to Vista Way	C	43,700	35,292.4	23.4	42,215.4
	Vista Way to SR78	D	51,100	41,268.6	27.3	49,364.0
Emerald Drive	Lake Boulevard to Sunset Drive	A	2,300	1,857.5	1.2	2,221.9
Frazee Road	Old Grove Road to SR76	A	5,500	4,441.8	2.9	5,313.2
	SR76 to College Boulevard	A	9,300	7,510.7	5.0	8,984.1
	College Boulevard to Sagewood Drive	A	3,600	2,907.4	1.9	3,477.7
Lake Boulevard	College Boulevard to Thunder Drive	B	13,100	10,579.6	7.0	12,655.0
	Thunder Drive to Sundown Lane	E	14,800	11,952.6	7.9	14,297.2
	Sundown Lane to Sky Haven Lane	C	14,800	11,952.6	7.9	14,297.2
	Sky Haven Lane to Cannon Road	B	13,400	10,821.9	7.2	12,944.8
Melrose Drive	SR76 to Spur Avenue	A	9,300	7,510.7	5.0	8,984.1
	N. Santa Fe Avenue to Oceanside Boulevard	A	14,300	11,548.8	7.7	13,814.2
	Oceanside Boulevard to City Limits	B	19,400	15,667.5	10.4	18,740.9
	City Limits to Cannon Road	B	27,400	22,128.4	14.7	26,469.2
	Cannon Road to Southern City Limits	B	30,000	24,228.2	16.1	28,980.8
Mesa Drive	Mission Avenue to Foussat Road	C	5,600	4,522.6	3.0	5,409.8
	Foussat Road to El Camino Real	A	4,700	3,795.7	2.5	4,540.3
	El Camino Real to Rancho Del Oro Road	B	13,300	10,741.2	7.1	12,848.2
	Rancho Del Oro Road to Old Grove Road	B	11,400	9,206.7	6.1	11,012.7
	Old Grove Road to College Boulevard	C	14,800	11,952.6	7.9	14,297.2
	College Boulevard to N. Santa Fe Avenue	B	11,800	9,529.7	6.3	11,399.1

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4a (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Existing Conditions)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Mission Avenue	Pacific Street to Coast Hwy	A	8,500	6,864.6	4.5	8,211.2
	Coast Hwy to Horne Street	A	8,500	6,864.6	4.5	8,211.2
	Horne Street to I-5	B	15,600	12,598.6	8.3	15,070.0
	I-5 to Canyon Drive	C	27,900	22,532.2	14.9	26,952.2
	Canyon Drive to Mesa Drive	C	23,800	19,221.0	12.7	22,991.5
	Mesa Drive to Foussat Road	B	19,500	15,748.3	10.4	18,837.5
	Foussat Road to El Camino Real	C	23,800	19,221.0	12.7	22,991.5
	El Camino Real to Douglas Drive	B	20,200	16,313.6	10.8	19,513.8
	Douglas Drive to Rancho Del Oro Road	C	25,000	20,190.1	13.4	24,150.7
	Rancho Del Oro Road to Old Grove Road	B	10,500	8,479.9	5.6	10,143.3
	Old Grove Road to Frazee Road	A	8,500	6,864.6	4.5	8,211.2
North Avenue	Olive Drive to Temple Heights Drive	B	6,600	5,330.2	3.5	6,375.8
	Temple Heights Drive to Melrose Drive	A	3,800	3,068.9	2.0	3,670.9
North River Road	Douglas Drive to College Boulevard	B	19,500	15,748.3	10.4	18,837.5
	College Boulevard to Vandegrift Boulevard	C	31,900	25,762.6	17.1	30,816.3
	Vandegrift Boulevard to Stallion	D	10,100	8,156.8	5.4	9,756.9
	Stallion Road to Eastern City Limits	B	4,800	3,876.5	2.6	4,636.9
North Santa Fe Avenue	SR76 to Mesa Drive	C	21,800	17,605.8	11.7	21,059.4
	Mesa Drive to Melrose Drive	C	22,700	18,332.6	12.1	21,928.8
	Melrose Drive to Eastern City Limits	C	15,400	12,437.1	8.2	14,876.8
Oceanside Boulevard	Pacific Street to Coast Hwy	B	5,400	4,361.1	2.9	5,216.5
	Coast Highway to I-5	D	21,700	17,525.0	11.6	20,962.8
	I-5 to Crouch Street	E	29,800	24,066.6	15.9	28,787.6
	Crouch Street to Foussat Road	F	31,300	25,278.1	16.8	30,236.7
	Foussat Road to El Camino Real	E	25,900	20,917.0	13.9	25,020.1
	El Camino Real to Rancho Del Oro Road	B	29,900	24,147.4	16.0	28,884.2
	Rancho Del Oro Road to College Boulevard	B	29,700	23,985.9	15.9	28,691.0
	College Boulevard to Melrose Drive	C	25,400	20,513.2	13.6	24,537.1
	Melrose Drive to Eastern City Limits	B	17,900	14,456.1	9.6	17,291.9
Old Grove Road	Frazee Road to SR76	A	7,500	6,057.0	4.0	7,245.2
	SR76 to Mission Avenue	A	10,800	8,722.1	5.8	10,433.1
	Mission Avenue to Mesa Drive	A	11,200	9,045.2	6.0	10,819.5
	Mesa Drive to College Boulevard	A	11,600	9,368.2	6.2	11,205.9

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4a (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Existing Conditions)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Olive Drive	College Boulevard to Emerald Drive	C	16,100	13,002.4	8.6	15,553.0
Pala Road	Los Arbolitos Boulevard to Douglas Drive	A	4,900	3,957.3	2.6	4,733.5
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	C	20,000	16,152.1	10.7	19,320.6
	SR78 EB on/off-ramps to Eastern City Limits	C	14,500	11,710.3	7.8	14,007.4
Rancho Del Oro Drive	Mission Avenue to SR76	A	8,900	7,187.7	4.8	8,597.6
	SR76 to Mesa Drive	A	14,300	11,548.8	7.7	13,814.2
	Mesa Drive to Oceanside Boulevard	A	12,400	10,014.3	6.6	11,978.7
	Oceanside Boulevard to Cameo Drive	A	12,600	10,175.8	6.7	12,171.9
	Cameo Drive to SR78	A	13,700	11,064.2	7.3	13,234.6
Vandegrift Boulevard	Northern City Limits to Douglas Drive	B	21,700	17,525.0	11.6	20,962.8
	Douglas Drive to N. River Road	B	22,800	18,413.4	12.2	22,025.4
Vista Way	Coast Highway to I-5	F	17,400	14,052.3	9.3	16,808.9
	Jefferson Street to El Camino Real	B	13,500	10,902.7	7.2	13,041.4
	El Camino Real to Rancho Del Oro Road	C	14,300	11,548.8	7.7	13,814.2
	Rancho Del Oro Road to College Boulevard	D	20,300	16,394.4	10.9	19,610.4
	College Boulevard to Thunder Drive	C	16,200	13,083.2	8.7	15,649.6
State Route 76	I-5 to Canyon Drive	C	49,500	39,976.5	26.5	47,818.4
	Canyon Drive to Foussat Road	D	54,000	43,610.7	28.9	52,165.5
	Foussat Road to Douglas Drive	D	51,000	41,187.9	27.3	49,267.4
	Douglas Drive to Rancho Del Oro Road	C	45,500	36,746.0	24.4	43,954.3
	Rancho Del Oro Road to Frazee Road	C	44,000	35,534.6	23.5	42,505.2
	Frazee Road to College Boulevard	C	44,000	35,534.6	23.5	42,505.2
	College Boulevard to N. Santa Fe Avenue	C	36,000	29,073.8	19.3	34,777.0
	N. Santa Fe Avenue to Melrose Drive	C	40,000	32,304.2	21.4	38,641.1
	Melrose Drive to Eastern City Limits	F	35,500	28,670.0	19.0	34,294.0

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4b: Roadway Segment GHG Emissions per Vehicle Mile per Day (Baseline Scenario)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Cannon Drive	Melrose Drive to Western City Limits	C	29,100	23,109.2	4.9	24,570.8
Canyon Drive	SR76 to Mission Avenue	B	10,700	8,497.2	1.8	9,034.6
	Mission Avenue to Oceanside Boulevard	B	9,300	7,385.4	1.6	7,852.5
Coast Highway	Harbor Drive to SR76	C	17,100	13,579.6	2.9	14,438.5
	SR76 to Mission Avenue	D	20,100	15,962.0	3.4	16,971.6
	Mission Avenue to Wisconsin Avenue	E	23,700	18,820.9	4.0	20,011.3
	Wisconsin Avenue to Oceanside Boulevard	E	23,600	18,741.5	4.0	19,926.9
	Oceanside Boulevard to Cassidy Street	D	21,800	17,312.1	3.7	18,407.0
	Cassidy Street to Vista Way	D	20,900	16,597.3	3.5	17,647.1
	Vista Way to Southern City Limits	D	19,700	15,644.4	3.3	16,633.9
College Boulevard	N. River Road to SR76	D	42,200	33,512.3	7.2	35,631.9
	SR76 to Frazee Road	E	36,300	28,827.0	6.2	30,650.2
	Frazee Road to Mesa Drive	E	36,900	29,303.4	6.3	31,156.8
	Mesa Drive to Old Grove Road	D	32,600	25,888.7	5.5	27,526.1
	Old Grove Road to Avenida de la Plata	C	39,000	30,971.1	6.6	32,930.0
	Avenida de la Plata to Oceanside Boulevard	D	42,500	33,750.6	7.2	35,885.2
	Oceanside Boulevard to Olive Drive	F	52,000	41,294.8	8.8	43,906.7
	Olive Drive to Waring Road	C	40,000	31,765.2	6.8	33,774.4
	Waring Road to Vista Way	E	45,800	36,371.2	7.8	38,671.6
	Vista Way to SR78	E	47,100	37,403.6	8.0	39,769.3
	SR78 to Plaza Drive	E	49,300	39,150.7	8.4	41,626.9
	Plaza Drive to Lake Boulevard	C	39,300	31,209.4	6.7	33,183.3
	Lake Boulevard to Southern City Limits	F	41,400	32,877.0	7.0	34,956.5
Douglas Drive	Vandegrift Boulevard to Cardiff Bay Drive	B	13,300	10,561.9	2.3	11,230.0
	Cardiff Bay Drive to N. River Road	C	17,500	13,897.3	3.0	14,776.3
	N. River Road to Pala Road	E	38,500	30,574.0	6.5	32,507.8
	Pala Road to El Camino Real	E	38,400	30,494.6	6.5	32,423.4
	El Camino Real to Mission Avenue	C	23,900	18,979.7	4.1	20,180.2
	Mission Avenue to SR76	C	25,400	20,170.9	4.3	21,446.7

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4b (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Baseline Scenario)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
El Camino Real	Douglas Drive to Mission Avenue	C	25,400	20,170.9	4.3	21,446.7
	Mission Avenue to Mesa Drive	C	25,500	20,250.3	4.3	21,531.1
	Mesa Drive to Oceanside Boulevard	E	39,600	31,447.6	6.7	33,436.6
	Oceanside Boulevard to Fire Mountain Road	C	43,100	34,227.1	7.3	36,391.9
	Fire Mountain Road to Via Las Rosas	C	48,200	38,277.1	8.2	40,698.1
	Via Las Rosas to Vista Way	D	53,600	42,565.4	9.1	45,257.6
	Vista Way to SR78	E	58,900	46,774.3	10.0	49,732.7
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,200	3,335.4	0.7	3,546.3
Frazee Road	Old Grove Road to SR76	A	5,700	4,526.5	1.0	4,812.8
	SR76 to College Boulevard	A	12,000	9,529.6	2.0	10,132.3
	College Boulevard to Sagewood Drive	B	5,200	4,129.5	0.9	4,390.7
Lake Boulevard	College Boulevard to Thunder Drive	C	19,500	15,485.6	3.3	16,465.0
	Thunder Drive to Sundown Lane	C	16,200	12,864.9	2.7	13,678.6
	Sundown Lane to Sky Haven Lane	C	16,200	12,864.9	2.7	13,678.6
	Sky Haven Lane to Cannon Road	C	14,700	11,673.7	2.5	12,412.1
Melrose Drive	N. River Road to SR76	A	13,100	10,403.1	2.2	11,061.1
	SR76 to N. Santa Fe Avenue	B	26,500	21,044.5	4.5	22,375.5
	N. Santa Fe Avenue to Oceanside Boulevard	C	36,600	29,065.2	6.2	30,903.5
	Oceanside Boulevard to City Limits	C	43,800	34,782.9	7.4	36,982.9
	City Limits to Cannon Road	B	32,100	25,491.6	5.4	27,103.9
	Cannon Road to Southern City Limits	B	34,100	27,079.9	5.8	28,792.6
Mesa Drive	Mission Avenue to Foussat Road	F	11,100	8,814.9	1.9	9,372.4
	Foussat Road to El Camino Real	C	8,800	6,988.4	1.5	7,430.4
	El Camino Real to Rancho Del Oro Drive	C	17,300	13,738.5	2.9	14,607.4
	Rancho Del Oro Drive to Old Grove Road	C	18,100	14,373.8	3.1	15,282.9
	Old Grove Road to College Boulevard	C	18,700	14,850.3	3.2	15,789.5
	College Boulevard to N. Santa Fe Avenue	C	15,100	11,991.4	2.6	12,749.8

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4b (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Baseline Scenario)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Mission Avenue	Pacific Street to Coast Highway	C	14,400	11,435.5	2.4	12,158.8
	Coast Highway to Horne Street	B	16,800	13,341.4	2.9	14,185.2
	Horne Street to I-5	C	27,000	21,441.5	4.6	22,797.7
	I-5 to Canyon Drive	D	34,600	27,476.9	5.9	29,214.8
	Canyon Drive to Mesa Drive	C	27,000	21,441.5	4.6	22,797.7
	Mesa Drive to Foussat Road	C	27,200	21,600.4	4.6	22,966.6
	Foussat Road to El Camino Real	C	29,400	23,347.5	5.0	24,824.1
	El Camino Real to Douglas Drive	C	25,300	20,091.5	4.3	21,362.3
	Douglas Drive to Rancho Del Oro Drive	D	31,000	24,618.1	5.3	26,175.1
	Rancho Del Oro Road to Old Grove Drive	B	12,900	10,244.3	2.2	10,892.2
	Old Grove Road to Frazee Road	A	9,100	7,226.6	1.5	7,683.7
North Avenue	Olive Drive to Temple Heights Drive	A	7,800	6,194.2	1.3	6,586.0
	Temple Heights Dr to Melrose Drive	A	3,900	3,097.1	0.7	3,293.0
North River Road	Douglas Drive to College Boulevard	C	23,400	18,582.7	4.0	19,758.0
	College Boulevard to Vandegrift Boulevard	D	38,300	30,415.2	6.5	32,338.9
	Vandegrift Boulevard to Stallion Road	A	9,700	7,703.1	1.6	8,190.3
	Stallion Road to Melrose Drive	A	10,600	8,417.8	1.8	8,950.2
	Melrose Drive to Eastern City Limits	B	12,900	10,244.3	2.2	10,892.2
North Santa Fe Avenue	SR76 to Mesa Drive	C	25,700	20,409.2	4.4	21,700.0
	Mesa Drive to Melrose Drive	C	27,500	21,838.6	4.7	23,219.9
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,700	6,908.9	1.5	7,345.9
	Coast Highway to I-5	D	21,100	16,756.2	3.6	17,816.0
	I-5 to Crouch Street	D	32,600	25,888.7	5.5	27,526.1
	Crouch Street to Foussat Road	E	37,900	30,097.6	6.4	32,001.2
	Foussat Road to El Camino Real	D	33,800	26,841.6	5.7	28,539.3
	El Camino Real to Rancho Del Oro Road	C	37,100	29,462.3	6.3	31,325.7
	Rancho Del Oro Road to College Boulevard	C	41,400	32,877.0	7.0	34,956.5
	College Boulevard to Melrose Drive	C	29,500	23,426.9	5.0	24,908.6
	Melrose Drive to Eastern City Limits	C	28,000	22,235.7	4.8	23,642.0
Old Grove Road	Frazee Road to SR76	A	8,000	6,353.0	1.4	6,754.9
	SR76 to Mission Avenue	B	17,800	14,135.5	3.0	15,029.6
	Mission Avenue to Mesa Drive	B	17,700	14,056.1	3.0	14,945.2
	Mesa Drive to College Boulevard	C	24,900	19,773.9	4.2	21,024.5

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4b (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Baseline Scenario)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Olive Drive	College Boulevard to Emerald Drive	C	17,700	14,056.1	3.0	14,945.2
Pala Road	Foussat Road Los Arbolitos Boulevard	A	7,000	5,558.9	1.2	5,910.5
	Los Arbolitos Boulevard to Douglas Drive	A	8,300	6,591.3	1.4	7,008.2
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	22,100	17,550.3	3.8	18,660.3
	SR78 EB on/off-ramps to Eastern City Limits	C	16,000	12,706.1	2.7	13,509.7
Rancho Del Oro Drive	Mission Avenue to SR76	A	9,000	7,147.2	1.5	7,599.2
	SR76 to Mesa Drive	C	24,200	19,218.0	4.1	20,433.5
	Mesa Drive to Oceanside Boulevard	C	26,500	21,044.5	4.5	22,375.5
	Oceanside Boulevard to Cameo Drive	D	32,400	25,729.8	5.5	27,357.2
	Cameo Drive to SR78	D	30,800	24,459.2	5.2	26,006.3
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	20,647.4	4.4	21,953.3
	Douglas Drive to N. River Road	C	27,600	21,918.0	4.7	23,304.3
Vista Way	Coast Highway to I-5	C	18,100	14,373.8	3.1	15,282.9
	Jefferson Street to El Camino Real	C	15,400	12,229.6	2.6	13,003.1
	El Camino Real to Rancho Del Oro Road	C	18,100	14,373.8	3.1	15,282.9
	Rancho Del Oro Road to College Boulevard	D	24,600	19,535.6	4.2	20,771.2
	College Boulevard to Thunder Drive	C	19,200	15,247.3	3.3	16,211.7
State Route 76	I-5 to Canyon Drive	D	60,700	48,203.8	10.3	51,252.6
	Canyon Drive to Foussat Road	D	65,900	52,333.2	11.2	55,643.2
	Foussat Road to Douglas Drive	C	59,800	47,489.0	10.1	50,492.7
	Douglas Drive to Rancho Del Oro Drive	C	54,100	42,962.5	9.2	45,679.8
	Rancho Del Oro Drive to Frazee Road	C	58,200	46,218.4	9.9	49,141.7
	Frazee Road to College Boulevard	C	51,500	40,897.8	8.7	43,484.5
	College Boulevard to N. Santa Fe Avenue	C	56,200	44,630.2	9.5	47,453.0
	N. Santa Fe Avenue to Melrose Drive	C	58,000	46,059.6	9.8	48,972.8
	Melrose Drive to Eastern City Limits	F	61,800	49,077.3	10.5	52,181.4

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4c: Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 1)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Cannon Road	Melrose Drive to Western City Limits	C	28,300	22,473.9	4.8	23,895.4
Canyon Drive	SR76 to Mission Avenue	B	10,700	8,497.2	1.8	9,034.6
	Mission Avenue to Oceanside Boulevard	B	9,300	7,385.4	1.6	7,852.5
Coast Highway	Harbor Drive to SR76	C	16,600	13,182.6	2.8	14,016.4
	SR76 to Mission Avenue	D	18,100	14,373.8	3.1	15,282.9
	Mission Avenue to Wisconsin Avenue	D	21,600	17,153.2	3.7	18,238.2
	Wisconsin Avenue to Oceanside Boulevard	E	23,300	18,503.3	4.0	19,673.6
	Oceanside Boulevard to Cassidy Street	D	21,900	17,391.5	3.7	18,491.5
	Cassidy Street to Vista Way	D	19,700	15,644.4	3.3	16,633.9
	Vista Way to Southern City Limits	C	17,700	14,056.1	3.0	14,945.2
College Boulevard	N. River Road to SR76	D	44,900	35,656.5	7.6	37,911.7
	SR76 to Frazee Road	E	36,100	28,668.1	6.1	30,481.4
	Frazee Road to Mesa Drive	E	36,700	29,144.6	6.2	30,988.0
	Mesa Drive to Old Grove Road	D	31,100	24,697.5	5.3	26,259.6
	Old Grove Road to Avenida de la Plata	E	37,500	29,779.9	6.4	31,663.5
	Avenida de la Plata to Oceanside Boulevard	D	40,100	31,844.7	6.8	33,858.8
	Oceanside Boulevard to Olive Drive	E	47,700	37,880.1	8.1	40,275.9
	Olive Drive to Waring Road	E	35,900	28,509.3	6.1	30,312.5
	Waring Road to Vista Way	D	43,900	34,862.4	7.4	37,067.4
	Vista Way to SR78	E	45,800	36,371.2	7.8	38,671.6
	SR78 to Plaza Drive	E	49,000	38,912.4	8.3	41,373.6
	Plaza Drive to Lake Boulevard	C	39,100	31,050.5	6.6	33,014.4
	Lake Boulevard to Southern City Limits	F	41,500	32,956.4	7.0	35,040.9
Douglas Drive	Vandegrift Boulevard to Via Malaguena	B	13,600	10,800.2	2.3	11,483.3
	Via Malaguena to Cardiff Bay Drive	E	13,600	10,800.2	2.3	11,483.3
	Cardiff Bay Drive to N. River Road	C	18,000	14,294.4	3.1	15,198.5
	N. River Road to Pala Road	F	40,100	31,844.7	6.8	33,858.8
	Pala Road to El Camino Real	E	39,500	31,368.2	6.7	33,352.2
	El Camino Real to Mission Ave	C	24,000	19,059.1	4.1	20,264.6
	Mission Avenue to SR76	C	25,600	20,329.8	4.3	21,615.6

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4c (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 1)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
El Camino Real	Douglas Drive to Mission Avenue	C	25,900	20,568.0	4.4	21,868.9
	Mission Avenue to Mesa Drive	C	25,800	20,488.6	4.4	21,784.5
	Mesa Drive to Oceanside Boulevard	E	39,700	31,527.0	6.7	33,521.0
	Oceanside Boulevard to Fire Mountain Road	C	43,400	34,465.3	7.4	36,645.2
	Fire Mountain Road to Via Las Rosas	C	48,400	38,435.9	8.2	40,867.0
	Via Las Rosas to Vista Way	D	53,700	42,644.8	9.1	45,342.1
	Vista Way to SR78	E	59,000	46,853.7	10.0	49,817.2
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,300	3,414.8	0.7	3,630.7
Frazee Road	Old Grove Road to SR76	A	5,800	4,606.0	1.0	4,897.3
	SR76 to College Boulevard	A	12,100	9,609.0	2.1	10,216.7
	College Boulevard to Sagewood Drive	B	5,400	4,288.3	0.9	4,559.5
Lake Boulevard	College Boulevard to Thunder Drive	C	19,300	15,326.7	3.3	16,296.1
	Thunder Drive to Sundown Lane	F	16,100	12,785.5	2.7	13,594.2
	Sundown Lane to Sky Haven Lane	C	16,100	12,785.5	2.7	13,594.2
	Sky Haven Lane to Cannon Road	C	14,600	11,594.3	2.5	12,327.6
Melrose Drive	SR76 to N. Santa Fe Avenue	B	23,200	18,423.8	3.9	19,589.1
	N. Santa Fe Avenue to Oceanside Boulevard	C	36,600	29,065.2	6.2	30,903.5
	Oceanside Boulevard to City Limits	C	43,800	34,782.9	7.4	36,982.9
	City Limits to Cannon Road	B	32,100	25,491.6	5.4	27,103.9
	Cannon Road to Southern City Limits	B	34,100	27,079.9	5.8	28,792.6
Mesa Drive	Mission Avenue to Foussat Road	F	11,100	8,814.9	1.9	9,372.4
	Foussat Road to El Camino Real	C	8,700	6,908.9	1.5	7,345.9
	El Camino Real to Rancho Del Oro Drive	C	17,300	13,738.5	2.9	14,607.4
	Rancho Del Oro Drive to Old Grove Road	C	18,100	14,373.8	3.1	15,282.9
	Old Grove Road to College Boulevard	C	18,600	14,770.8	3.2	15,705.1
	College Boulevard to N. Santa Fe Avenue	C	14,900	11,832.6	2.5	12,580.9

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4c (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 1)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Mission Avenue	Pacific Street to Cleveland Street	C	14,400	11,435.5	2.4	12,158.8
	Cleveland Street to Coast Highway	C	7,200	5,717.7	1.2	6,079.4
	Coast Highway to Clementine Street	D	11,500	9,132.5	2.0	9,710.1
	Clementine Street to Horne Street	D	21,400	16,994.4	3.6	18,069.3
	Horne Street to I-5	C	27,000	21,441.5	4.6	22,797.7
	I-5 to Canyon Drive	D	35,000	27,794.6	5.9	29,552.6
	Canyon Drive to Mesa Drive	C	27,400	21,759.2	4.6	23,135.4
	Mesa Drive to Foussat Road	C	27,400	21,759.2	4.6	23,135.4
	Foussat Road to El Camino Real	C	29,500	23,426.9	5.0	24,908.6
	El Camino Real to Douglas Drive	C	25,400	20,170.9	4.3	21,446.7
	Douglas Drive to Rancho Del Oro Drive	D	31,600	25,094.5	5.4	26,681.7
	Rancho Del Oro Drive to Old Grove Road	B	12,900	10,244.3	2.2	10,892.2
	Old Grove Road to Frazee Road	A	9,100	7,226.6	1.5	7,683.7
North Avenue	Olive Drive to Temple Heights Drive	A	7,900	6,273.6	1.3	6,670.4
	Temple Heights Drive to Melrose Drive	A	4,100	3,255.9	0.7	3,461.9
North River Road	Douglas Drive to College Boulevard	C	24,500	19,456.2	4.2	20,686.8
	College Boulevard to Vandegrift Boulevard	E	42,300	33,591.7	7.2	35,716.4
	Vandegrift Boulevard to Stallion Road	A	10,800	8,576.6	1.8	9,119.1
	Stallion Road to Melrose Dr	A	7,000	5,558.9	1.2	5,910.5
	Melrose Drive to Eastern City Limits	A	9,400	7,464.8	1.6	7,937.0
North Santa Fe Avenue	SR76 to Mesa Drive	C	26,800	21,282.7	4.5	22,628.8
	Mesa Drive to Melrose Drive	C	28,600	22,712.2	4.9	24,148.7
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,500	6,750.1	1.4	7,177.0
	Coast Highway to I-5	D	21,100	16,756.2	3.6	17,816.0
	I-5 to Crouch Street	D	32,700	25,968.1	5.5	27,610.5
	Crouch Street to Foussat Road	E	38,000	30,177.0	6.4	32,085.6
	Foussat Road to El Camino Real	D	33,900	26,921.0	5.8	28,623.8
	El Camino Real to Rancho Del Oro Road	C	37,100	29,462.3	6.3	31,325.7
	Rancho Del Oro Road to College Boulevard	C	41,400	32,877.0	7.0	34,956.5
	College Boulevard to Melrose Drive	C	29,400	23,347.5	5.0	24,824.1
	Melrose Drive to Eastern City Limits	C	28,200	22,394.5	4.8	23,810.9

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4c (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 1)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Old Grove Road	Frazee Road to SR76	A	8,000	6,353.0	1.4	6,754.9
	SR76 to Mission Avenue	B	17,900	14,214.9	3.0	15,114.0
	Mission Avenue to Mesa Drive	B	17,800	14,135.5	3.0	15,029.6
	Mesa Drive to College Boulevard	C	24,900	19,773.9	4.2	21,024.5
Olive Drive	College Boulevard to Emerald Drive	C	18,600	14,770.8	3.2	15,705.1
Pala Road	Foussat Road Los Arbolitos Boulevard	A	7,500	5,956.0	1.3	6,332.7
	Los Arbolitos Boulevard to Douglas Drive	A	8,800	6,988.4	1.5	7,430.4
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	22,200	17,629.7	3.8	18,744.8
	SR78 EB on/off-ramps to Eastern City Limits	C	16,000	12,706.1	2.7	13,509.7
Rancho Del Oro Drive	Mission Avenue to SR76	A	9,300	7,385.4	1.6	7,852.5
	SR76 to Mesa Drive	C	24,400	19,376.8	4.1	20,602.4
	Mesa Drive to Oceanside Boulevard	C	26,700	21,203.3	4.5	22,544.4
	Oceanside Boulevard to Cameo Drive	D	32,700	25,968.1	5.5	27,610.5
	Cameo Drive to SR78	D	31,100	24,697.5	5.3	26,259.6
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	20,647.4	4.4	21,953.3
	Douglas Drive to N. River Road	C	29,100	23,109.2	4.9	24,570.8
Vista Way	Coast Highway to I-5	F	18,200	14,453.2	3.1	15,367.3
	Jefferson Street to El Camino Real	C	15,400	12,229.6	2.6	13,003.1
	El Camino Real to Rancho Del Oro Road	C	18,200	14,453.2	3.1	15,367.3
	Rancho Del Oro Road to College Boulevard	D	24,600	19,535.6	4.2	20,771.2
	College Boulevard to Thunder Drive	C	18,800	14,929.7	3.2	15,873.9
State Route 76	I-5 to Canyon Drive	D	60,800	48,283.2	10.3	51,337.0
	Canyon Drive to Foussat Road	D	66,100	52,492.1	11.2	55,812.1
	Foussat Road to Douglas Drive	C	59,800	47,489.0	10.1	50,492.7
	Douglas Drive to Rancho Del Oro Drive	C	53,800	42,724.3	9.1	45,426.5
	Rancho Del Oro Drive to Frazee Road	C	57,900	45,980.2	9.8	48,888.4
	Frazee Road to College Boulevard	C	51,100	40,580.1	8.7	43,146.7
	College Boulevard to N. Santa Fe Avenue	C	57,500	45,662.5	9.8	48,550.6
	N. Santa Fe Avenue to Melrose Drive	C	57,700	45,821.4	9.8	48,719.5
	Melrose Drive to Eastern City Limits	F	65,000	51,618.5	11.0	54,883.3

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4d: Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 2)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Cannon Road	Melrose Drive to Western City Limits	C	28,300	22,473.9	4.8	23,895.4
Canyon Drive	SR76 to Mission Avenue	B	11,100	8,814.9	1.9	9,372.4
	Mission Avenue to Oceanside Boulevard	B	9,300	7,385.4	1.6	7,852.5
Coast Highway	Harbor Drive to SR76	F	17,300	13,738.5	2.9	14,607.4
	SR76 to Mission Avenue	F	18,800	14,929.7	3.2	15,873.9
	Mission Avenue to Wisconsin Avenue	F	22,500	17,868.0	3.8	18,998.1
	Wisconsin Avenue to Oceanside Boulevard	F	23,300	18,503.3	4.0	19,673.6
	Oceanside Boulevard to Cassidy Street	F	23,500	18,662.1	4.0	19,842.4
	Cassidy Street to Vista Way	F	21,200	16,835.6	3.6	17,900.4
	Vista Way to Southern City Limits	F	19,700	15,644.4	3.3	16,633.9
College Boulevard	N. River Road to SR76	E	45,400	36,053.6	7.7	38,333.9
	SR76 to Frazee Road	E	38,300	30,415.2	6.5	32,338.9
	Frazee Road to Mesa Drive	E	38,300	30,415.2	6.5	32,338.9
	Mesa Drive to Old Grove Road	D	33,300	26,444.6	5.7	28,117.1
	Old Grove Road to Avenida de la Plata	E	37,500	29,779.9	6.4	31,663.5
	Avenida de la Plata to Oceanside Boulevard	D	40,100	31,844.7	6.8	33,858.8
	Oceanside Boulevard to Olive Drive	F	51,700	41,056.6	8.8	43,653.4
	Olive Drive to Waring Road	E	37,700	29,938.7	6.4	31,832.3
	Waring Road to Vista Way	F	51,400	40,818.3	8.7	43,400.0
	Vista Way to SR78	F	57,500	45,662.5	9.8	48,550.6
	SR78 to Plaza Drive	F	56,600	44,947.8	9.6	47,790.7
	Plaza Drive to Lake Boulevard	D	44,400	35,259.4	7.5	37,489.5
	Lake Boulevard to Southern City Limits	F	41,500	32,956.4	7.0	35,040.9
Douglas Drive	Vandegrift Boulevard to Via Malaguena	B	13,600	10,800.2	2.3	11,483.3
	Via Malaguena to Cardiff Bay Drive	E	13,600	10,800.2	2.3	11,483.3
	Cardiff Bay Drive to N. River Road	C	17,900	14,214.9	3.0	15,114.0
	N. River Road to Pala Road	E	40,000	31,765.2	6.8	33,774.4
	Pala Road to El Camino Real	F	42,200	33,512.3	7.2	35,631.9
	El Camino Real to Mission Avenue	C	24,700	19,615.0	4.2	20,855.7
	Mission Avenue to SR76	C	25,100	19,932.7	4.3	21,193.4

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4d (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 2)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
El Camino Real	Douglas Drive to Mission Avenue	C	27,800	22,076.8	4.7	23,473.2
	Mission Avenue to Mesa Drive	C	25,300	20,091.5	4.3	21,362.3
	Mesa Drive to Oceanside Boulevard	E	39,800	31,606.4	6.8	33,605.5
	Oceanside Boulevard to Fire Mountain Road	C	45,000	35,735.9	7.6	37,996.1
	Fire Mountain Road to Via Las Rosas	C	49,000	38,912.4	8.3	41,373.6
	Via Las Rosas to Vista Way	F	60,900	48,362.6	10.3	51,421.5
	Vista Way to SR78	F	72,700	57,733.3	12.3	61,384.9
Emerald Drive	Lake Boulevard to Sunset Drive	A	4,800	3,811.8	0.8	4,052.9
Frazee Road	Old Grove Road to SR76	A	5,300	4,208.9	0.9	4,475.1
	SR76 to College Boulevard	A	12,700	10,085.5	2.2	10,723.4
	College Boulevard to Sagewood Drive	C	6,600	5,241.3	1.1	5,572.8
Lake Boulevard	College Boulevard to Thunder Drive	C	19,200	15,247.3	3.3	16,211.7
	Thunder Drive to Sundown Lane	F	16,200	12,864.9	2.7	13,678.6
	Sundown Lane to Sky Haven Lane	C	16,200	12,864.9	2.7	13,678.6
	Sky Haven Lane to Cannon Road	C	14,700	11,673.7	2.5	12,412.1
Melrose Drive	SR76 to Spur Avenue	A	7,600	6,035.4	1.3	6,417.1
	N. Santa Fe Avenue to Oceanside Boulevard	B	25,200	20,012.1	4.3	21,277.8
	Oceanside Boulevard to City Limits	C	37,900	30,097.6	6.4	32,001.2
	City Limits to Cannon Road	C	41,200	32,718.2	7.0	34,787.6
	Cannon Road to Southern City Limits	B	33,900	26,921.0	5.8	28,623.8
Mesa Drive	Mission Avenue to Foussat Road	F	11,300	8,973.7	1.9	9,541.3
	Foussat Road to El Camino Real	C	8,900	7,067.8	1.5	7,514.8
	El Camino Real to Rancho Del Oro Drive	C	18,700	14,850.3	3.2	15,789.5
	Rancho Del Oro Drive to Old Grove Road	C	18,500	14,691.4	3.1	15,620.6
	Old Grove Road to College Boulevard	C	20,000	15,882.6	3.4	16,887.2
	College Boulevard to N. Santa Fe Avenue	C	16,100	12,785.5	2.7	13,594.2

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4d (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 2)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Mission Avenue	Pacific Street to Coast Highway	C	14,400	11,435.5	2.4	12,158.8
	Coast Highway to Horne Street	C	16,900	13,420.8	2.9	14,269.7
	Horne Street to I-5	C	27,100	21,521.0	4.6	22,882.1
	I-5 to Canyon Drive	D	34,900	27,715.2	5.9	29,468.1
	Canyon Drive to Mesa Drive	C	27,300	21,679.8	4.6	23,051.0
	Mesa Drive to Foussat Road	C	27,500	21,838.6	4.7	23,219.9
	Foussat Road to El Camino Real	D	32,200	25,571.0	5.5	27,188.4
	El Camino Real to Douglas Drive	C	25,600	20,329.8	4.3	21,615.6
	Douglas Drive to Rancho Del Oro Drive	D	32,300	25,650.4	5.5	27,272.8
	Rancho Del Oro Road to Old Grove Drive	C	13,400	10,641.4	2.3	11,314.4
	Old Grove Road to Frazee Road	A	9,600	7,623.7	1.6	8,105.8
North Avenue	Olive Drive to Temple Heights Drive	A	7,700	6,114.8	1.3	6,501.6
	Temple Heights Drive to Melrose Drive	A	4,200	3,335.4	0.7	3,546.3
North River Road	Douglas Drive to College Boulevard	C	24,600	19,535.6	4.2	20,771.2
	College Boulevard to Vandegrift Boulevard	E	41,600	33,035.9	7.1	35,125.3
	Vandegrift Boulevard to Stallion Road	A	12,500	9,926.6	2.1	10,554.5
	Stallion Road to Melrose Drive	A	7,100	5,638.3	1.2	5,994.9
	Melrose Drive to Eastern City Limits	A	9,500	7,544.2	1.6	8,021.4
North Santa Fe Avenue	SR76 to Mesa Drive	D	33,200	26,365.2	5.6	28,032.7
	Mesa Drive to Melrose Drive	C	23,300	18,503.3	4.0	19,673.6
Oceanside Boulevard	Pacific Street to Coast Highway	D	8,600	6,829.5	1.5	7,261.5
	Coast Highway to I-5	D	21,000	16,676.8	3.6	17,731.5
	I-5 to Crouch Street	E	35,400	28,112.2	6.0	29,890.3
	Crouch Street to Foussat Road	F	40,400	32,082.9	6.9	34,112.1
	Foussat Road to El Camino Real	E	36,300	28,827.0	6.2	30,650.2
	El Camino Real to Rancho Del Oro Road	C	41,100	32,638.8	7.0	34,703.1
	Rancho Del Oro Road to College Boulevard	C	43,900	34,862.4	7.4	37,067.4
	College Boulevard to Melrose Drive	C	29,200	23,188.6	5.0	24,655.3
	Melrose Drive to Eastern City Limits	D	31,200	24,776.9	5.3	26,344.0
Old Grove Road	Frazee Road to SR76	A	8,400	6,670.7	1.4	7,092.6
	SR76 to Mission Avenue	B	17,800	14,135.5	3.0	15,029.6
	Mission Avenue to Mesa Drive	B	17,800	14,135.5	3.0	15,029.6
	Mesa Drive to College Boulevard	C	25,600	20,329.8	4.3	21,615.6

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

TABLE 4d (cont.): Roadway Segment GHG Emissions per Vehicle Mile per Day (Alternative 2)

Roadway	Segment	LOS	ADT	CO_2 (pounds)	N_2O (pounds)	CO_{2e} (pounds)
Olive Drive	College Boulevard to Emerald Drive	C	19,900	15,803.2	3.4	16,802.7
Pala Road	Los Arbolitos Boulevard to Douglas Drive	A	3,500	2,779.5	0.6	2,955.3
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	D	24,800	19,694.5	4.2	20,940.1
	SR78 EB on/off-ramps to Eastern City Limits	C	17,200	13,659.1	2.9	14,523.0
Rancho Del Oro Drive	Mission Avenue to SR76	A	10,000	7,941.3	1.7	8,443.6
	SR76 to Mesa Drive	C	25,100	19,932.7	4.3	21,193.4
	Mesa Drive to Oceanside Boulevard	C	27,000	21,441.5	4.6	22,797.7
	Oceanside Boulevard to Cameo Drive	C	27,800	22,076.8	4.7	23,473.2
	Cameo Drive to Vista Way	C	24,700	19,615.0	4.2	20,855.7
Vandegrift Boulevard	Northern City Limits to Douglas Drive	C	26,000	20,647.4	4.4	21,953.3
	Douglas Drive to N. River Road	C	29,200	23,188.6	5.0	24,655.3
Vista Way	Coast Highway to I-5	F	17,800	14,135.5	3.0	15,029.6
	Jefferson Street to El Camino Real	C	15,800	12,547.3	2.7	13,340.9
	El Camino Real to Rancho Del Oro Road	D	23,200	18,423.8	3.9	19,589.1
	Rancho Del Oro Road to College Boulevard	F	30,100	23,903.3	5.1	25,415.2
	College Boulevard to Thunder Drive	D	20,700	16,438.5	3.5	17,478.2
State Route 76	I-5 to Canyon Drive	D	62,600	49,712.6	10.6	52,856.9
	Canyon Drive to Foussat Road	D	67,900	53,921.5	11.5	57,332.0
	Foussat Road to Douglas Drive	D	62,100	49,315.5	10.5	52,434.7
	Douglas Drive to Rancho Del Oro Drive	C	55,700	44,233.1	9.5	47,030.8
	Rancho Del Oro Drive to Frazee Road	D	60,500	48,044.9	10.3	51,083.7
	Frazee Road to College Boulevard	C	53,500	42,486.0	9.1	45,173.2
	College Boulevard to N. Santa Fe Avenue	D	62,500	49,633.2	10.6	52,772.4
	N. Santa Fe Avenue to Melrose Drive	D	68,900	54,715.6	11.7	58,176.3
	Melrose Drive to Eastern City Limits	E	57,800	45,900.8	9.8	48,803.9

Traffic Data Source: IBI Group, Inc., 2/11. All levels in pounds-mass.

Comparison of Traffic Noise Effects under Scenarios Examined

Table 5a starting below identifies the various servicing roadway segments within the City and shows the net increase in traffic noise due to the 2030 baseline condition (i.e., the no project condition). Segments with non-existent scenarios are indicated by *'n/a'*.

TABLE 5a: Comparison of Traffic Noise Increases (Existing vs. Baseline)

		Traffic Increases Under…		
Roadway	**Segment**	**Existing Conditions**	**2030 Baseline Conditions**	**Overall Impacts?**
Cannon Drive	Melrose Drive to Western City Limits	n/a	4.4	YES
Canyon Drive	SR76 to Mission Avenue	n/a	3.0	NO
	Mission Avenue to Oceanside Boulevard	n/a	0.6	NO
Coast Highway	Harbor Drive to SR76	n/a	2.8	NO
	SR76 to Mission Avenue	n/a	0.4	NO
	Mission Avenue to Wisconsin Avenue	n/a	0.4	NO
	Wisconsin Avenue to Oceanside Boulevard	n/a	0.3	NO
	Oceanside Boulevard to Cassidy Street	n/a	0.3	NO
	Cassidy Street to Vista Way	n/a	0.3	NO
	Vista Way to Southern City Limits	n/a	0.4	NO
College Boulevard	N. River Road to SR76	n/a	0.4	NO
	SR76 to Frazee Road	n/a	0.8	NO
	Frazee Road to Mesa Drive	n/a	0.6	NO
	Mesa Drive to Old Grove Road	n/a	0.5	NO
	Old Grove Road to Avenida de la Plata	n/a	n/a	n/a
	Avenida de la Plata to Oceanside Boulevard	n/a	n/a	n/a
	Oceanside Boulevard to Olive Drive	n/a	0.5	NO
	Olive Drive to Waring Road	n/a	0.5	NO
	Waring Road to Vista Way	n/a	0.6	NO
	Vista Way to SR78	n/a	0.9	NO
	SR78 to Plaza Drive	n/a	0.8	NO
	Plaza Drive to Lake Boulevard	n/a	0.6	NO
	Lake Boulevard to Southern City Limits	n/a	2.3	NO
Douglas Drive	Vandegrift Boulevard to Cardiff Bay Drive	n/a	n/a	n/a
	Cardiff Bay Drive to N. River Road	n/a	0.9	NO
	N. River Road to Pala Road	n/a	0.8	NO
	Pala Road to El Camino Real	n/a	0.4	NO
	El Camino Real to Mission Avenue	n/a	4.9	YES
	Mission Avenue to SR76	n/a	0.9	NO
El Camino Real	Douglas Drive to Mission Avenue	n/a	0.5	NO
	Mission Avenue to Mesa Drive	n/a	0.8	NO
	Mesa Drive to Oceanside Boulevard	n/a	0.8	NO
	Oceanside Boulevard to Fire Mountain Road	n/a	0.8	NO
	Fire Mountain Road to Via Las Rosas	n/a	1.2	NO
	Via Las Rosas to Vista Way	n/a	0.9	NO
	Vista Way to SR78	n/a	0.6	NO

TABLE 5a (cont.): Comparison of Traffic Noise Increases (Existing vs. Baseline)

Roadway	Segment	*Traffic Increases Under…* Existing Conditions	2030 Baseline Conditions	Overall Impacts?
Emerald Drive	Lake Boulevard to Sunset Drive	n/a	2.6	NO
Frazee Road	Old Grove Road to SR76	n/a	0.2	NO
	SR76 to College Boulevard	n/a	1.1	NO
	College Boulevard to Sagewood Drive	n/a	1.5	NO
Lake Boulevard	College Boulevard to Thunder Drive	n/a	1.7	NO
	Thunder Drive to Sundown Lane	n/a	0.4	NO
	Sundown Lane to Sky Haven Lane	n/a	0.4	NO
	Sky Haven Lane to Cannon Road	n/a	0.4	NO
Melrose Drive	N. River Road to SR76	n/a	n/a	n/a
	SR76 to N. Santa Fe Avenue	n/a	n/a	n/a
	N. Santa Fe Avenue to Oceanside Boulevard	n/a	4.0	YES
	Oceanside Boulevard to City Limits	n/a	3.5	YES
	City Limits to Cannon Road	n/a	0.7	NO
	Cannon Road to Southern City Limits	n/a	0.5	NO
Mesa Drive	Mission Avenue to Foussat Road	n/a	2.9	NO
	Foussat Road to El Camino Real	n/a	2.7	NO
	El Camino Real to Rancho Del Oro Drive	n/a	1.2	NO
	Rancho Del Oro Drive to Old Grove Road	n/a	2.0	NO
	Old Grove Road to College Boulevard	n/a	1.0	NO
	College Boulevard to N. Santa Fe Avenue	n/a	1.1	NO
Mission Avenue	Pacific Street to Coast Highway	n/a	2.3	NO
	Coast Highway to Horne Street	n/a	7.3	YES
	Horne Street to I-5	n/a	2.4	NO
	I-5 to Canyon Drive	n/a	0.9	NO
	Canyon Drive to Mesa Drive	n/a	0.5	NO
	Mesa Drive to Foussat Road	n/a	1.4	NO
	Foussat Road to El Camino Real	n/a	0.9	NO
	El Camino Real to Douglas Drive	n/a	0.9	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.9	NO
	Rancho Del Oro Road to Old Grove Drive	n/a	0.9	NO
	Old Grove Road to Frazee Road	n/a	0.3	NO
North Avenue	Olive Drive to Temple Heights Drive	n/a	0.7	NO
	Temple Heights Dr to Melrose Drive	n/a	0.1	NO
North River Road	Douglas Drive to College Boulevard	n/a	0.8	NO
	College Boulevard to Vandegrift Boulevard	n/a	0.8	NO
	Vandegrift Boulevard to Stallion Road	n/a	4.2	YES
	Stallion Road to Melrose Drive	n/a	n/a	n/a
	Melrose Drive to Eastern City Limits	n/a	n/a	n/a
North Santa Fe Avenue	SR76 to Mesa Drive	n/a	0.7	NO
	Mesa Drive to Melrose Drive	n/a	0.8	NO

TABLE 5a (cont.): Comparison of Traffic Noise Increases (Existing vs. Baseline)

Roadway	Segment	*Traffic Increases Under…* Existing Conditions	2030 Baseline Conditions	Overall Impacts?
Oceanside Boulevard	Pacific Street to Coast Highway	n/a	2.1	NO
	Coast Highway to I-5	n/a	-0.2	NO
	I-5 to Crouch Street	n/a	4.7	YES
	Crouch Street to Foussat Road	n/a	5.2	YES
	Foussat Road to El Camino Real	n/a	5.5	YES
	El Camino Real to Rancho Del Oro Road	n/a	0.9	NO
	Rancho Del Oro Road to College Boulevard	n/a	1.5	NO
	College Boulevard to Melrose Drive	n/a	0.7	NO
	Melrose Drive to Eastern City Limits	n/a	2.0	NO
Old Grove Road	Frazee Road to SR76	n/a	0.3	NO
	SR76 to Mission Avenue	n/a	2.2	NO
	Mission Avenue to Mesa Drive	n/a	2.0	NO
	Mesa Drive to College Boulevard	n/a	3.4	YES
Olive Drive	College Boulevard to Emerald Drive	n/a	0.4	NO
Pala Road	Foussat Road Los Arbolitos Boulevard	n/a	n/a	n/a
	Los Arbolitos Boulevard to Douglas Drive	n/a	2.3	NO
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	n/a	0.4	NO
	SR78 EB on/off-ramps to Eastern City Limits	n/a	0.4	NO
Rancho Del Oro Drive	Mission Avenue to SR76	n/a	0.0	NO
	SR76 to Mesa Drive	n/a	2.2	NO
	Mesa Drive to Oceanside Boulevard	n/a	3.3	YES
	Oceanside Boulevard to Cameo Drive	n/a	4.1	YES
	Cameo Drive to SR78	n/a	3.5	YES
Vandegrift Boulevard	Northern City Limits to Douglas Drive	n/a	0.7	NO
	Douglas Drive to N. River Road	n/a	0.8	NO
Vista Way	Coast Highway to I-5	n/a	0.2	NO
	Jefferson Street to El Camino Real	n/a	0.6	NO
	El Camino Real to Rancho Del Oro Road	n/a	1.1	NO
	Rancho Del Oro Road to College Boulevard	n/a	0.8	NO
	College Boulevard to Thunder Drive	n/a	0.7	NO
State Route 76	I-5 to Canyon Drive	n/a	0.9	NO
	Canyon Drive to Foussat Road	n/a	0.9	NO
	Foussat Road to Douglas Drive	n/a	0.7	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.7	NO
	Rancho Del Oro Drive to Frazee Road	n/a	1.3	NO
	Frazee Road to College Boulevard	n/a	0.7	NO
	College Boulevard to N. Santa Fe Avenue	n/a	1.9	NO
	N. Santa Fe Avenue to Melrose Drive	n/a	1.6	NO
	Melrose Drive to Eastern City Limits	n/a	2.4	NO

As can be seen, traffic noise increases above the 3.0 dBA CNEL screening threshold is expected as a natural consequence of growth within the City. The largest increase is expected along Mission Avenue between Coast Highway and Horne Street with an aggregate sound level increase of 7.3 dBA CNEL. This would not be considered a direct impact due to the proposed project action under examination since these segment impacts would occur under the no-project (i.e., Baseline Year 2030) scenario.

In a similar fashion, Table 5b starting below identifies the various servicing roadway segments within the City and shows the net increase/decrease in traffic noise due to implementation of the Alternative 1 circulation element scenario. Table 5c starting on Page 73 of this report provides similar information for the Alternative 2 scenario. Segments with non-existent scenarios are indicated by *'n/a'*.

TABLE 5b: Comparison of Traffic Noise Increases (Alternative 1 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 1**	**Segment Impacts?**
Cannon Road	Melrose Drive to Western City Limits	n/a	-0.1	NO
Canyon Drive	SR76 to Mission Avenue	n/a	0.0	NO
	Mission Avenue to Oceanside Boulevard	n/a	0.0	NO
Coast Highway	Harbor Drive to SR76	n/a	-0.1	NO
	SR76 to Mission Avenue	n/a	-0.4	NO
	Mission Avenue to Wisconsin Avenue	n/a	-0.4	NO
	Wisconsin Avenue to Oceanside Boulevard	n/a	0.0	NO
	Oceanside Boulevard to Cassidy Street	n/a	0.0	NO
	Cassidy Street to Vista Way	n/a	-0.3	NO
	Vista Way to Southern City Limits	n/a	-0.4	NO
College Boulevard	N. River Road to SR76	n/a	0.2	NO
	SR76 to Frazee Road	n/a	0.0	NO
	Frazee Road to Mesa Drive	n/a	-0.1	NO
	Mesa Drive to Old Grove Road	n/a	-0.2	NO
	Old Grove Road to Avenida de la Plata	n/a	-0.2	NO
	Avenida de la Plata to Oceanside Boulevard	n/a	-0.3	NO
	Oceanside Boulevard to Olive Drive	n/a	-0.4	NO
	Olive Drive to Waring Road	n/a	-0.4	NO
	Waring Road to Vista Way	n/a	-0.2	NO
	Vista Way to SR78	n/a	-0.1	NO
	SR78 to Plaza Drive	n/a	0.0	NO
	Plaza Drive to Lake Boulevard	n/a	0.0	NO
	Lake Boulevard to Southern City Limits	n/a	0.0	NO
Douglas Drive	Vandegrift Boulevard to Via Malaguena	n/a	n/a	NO
	Via Malaguena to Cardiff Bay Drive	n/a	n/a	NO
	Cardiff Bay Drive to N. River Road	n/a	0.1	NO
	N. River Road to Pala Road	n/a	0.1	NO
	Pala Road to El Camino Real	n/a	0.2	NO
	El Camino Real to Mission Ave	n/a	0.0	NO
	Mission Avenue to SR76	n/a	0.1	NO

TABLE 5b (cont.): Comparison of Traffic Noise Increases (Alternative 1 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 1**	**Segment Impacts?**
El Camino Real	Douglas Drive to Mission Avenue	n/a	0.1	NO
	Mission Avenue to Mesa Drive	n/a	0.0	NO
	Mesa Drive to Oceanside Boulevard	n/a	0.0	NO
	Oceanside Boulevard to Fire Mountain Road	n/a	0.1	NO
	Fire Mountain Road to Via Las Rosas	n/a	0.0	NO
	Via Las Rosas to Vista Way	n/a	0.0	NO
	Vista Way to SR78	n/a	0.0	NO
Emerald Drive	Lake Boulevard to Sunset Drive	n/a	0.1	NO
Frazee Road	Old Grove Road to SR76	n/a	0.0	NO
	SR76 to College Boulevard	n/a	0.0	NO
	College Boulevard to Sagewood Drive	n/a	0.2	NO
Lake Boulevard	College Boulevard to Thunder Drive	n/a	-0.1	NO
	Thunder Drive to Sundown Lane	n/a	0.0	NO
	Sundown Lane to Sky Haven Lane	n/a	0.0	NO
	Sky Haven Lane to Cannon Road	n/a	-0.1	NO
Melrose Drive	SR76 to N. Santa Fe Avenue	n/a	-0.5	NO
	N. Santa Fe Avenue to Oceanside Boulevard	n/a	0.0	NO
	Oceanside Boulevard to City Limits	n/a	0.0	NO
	City Limits to Cannon Road	n/a	0.0	NO
	Cannon Road to Southern City Limits	n/a	0.0	NO
Mesa Drive	Mission Avenue to Foussat Road	n/a	0.0	NO
	Foussat Road to El Camino Real	n/a	0.0	NO
	El Camino Real to Rancho Del Oro Drive	n/a	0.0	NO
	Rancho Del Oro Drive to Old Grove Road	n/a	0.0	NO
	Old Grove Road to College Boulevard	n/a	0.0	NO
	College Boulevard to N. Santa Fe Avenue	n/a	-0.1	NO
Mission Avenue	Pacific Street to Cleveland Street	n/a	n/a	NO
	Cleveland Street to Coast Highway	n/a	n/a	NO
	Coast Highway to Clementine Street	n/a	n/a	NO
	Clementine Street to Horne Street	n/a	n/a	NO
	Horne Street to I-5	n/a	0.0	NO
	I-5 to Canyon Drive	n/a	0.0	NO
	Canyon Drive to Mesa Drive	n/a	0.1	NO
	Mesa Drive to Foussat Road	n/a	0.1	NO
	Foussat Road to El Camino Real	n/a	0.0	NO
	El Camino Real to Douglas Drive	n/a	0.0	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.1	NO
	Rancho Del Oro Drive to Old Grove Road	n/a	0.0	NO
	Old Grove Road to Frazee Road	n/a	0.0	NO
North Avenue	Olive Drive to Temple Heights Drive	n/a	0.1	NO
	Temple Heights Drive to Melrose Drive	n/a	0.2	NO
North River Road	Douglas Drive to College Boulevard	n/a	0.2	NO
	College Boulevard to Vandegrift Boulevard	n/a	0.5	NO
	Vandegrift Boulevard to Stallion Road	n/a	0.4	NO
	Stallion Road to Melrose Dr	n/a	-1.8	NO
	Melrose Drive to Eastern City Limits	n/a	-1.4	NO

TABLE 5b (cont.): Comparison of Traffic Noise Increases (Alternative 1 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 1**	**Segment Impacts?**
North Santa Fe Avenue	SR76 to Mesa Drive	n/a	0.2	NO
	Mesa Drive to Melrose Drive	n/a	0.2	NO
Oceanside Boulevard	Coast Highway to I-5	n/a	0.0	NO
	I-5 to Crouch Street	n/a	0.0	NO
	Crouch Street to Foussat Road	n/a	0.0	NO
	Foussat Road to El Camino Real	n/a	0.0	NO
	El Camino Real to Rancho Del Oro Road	n/a	0.0	NO
	Rancho Del Oro Road to College Boulevard	n/a	0.0	NO
	College Boulevard to Melrose Drive	n/a	0.0	NO
	Melrose Drive to Eastern City Limits	n/a	0.0	NO
Old Grove Road	Frazee Road to SR76	n/a	0.0	NO
	SR76 to Mission Avenue	n/a	0.0	NO
	Mission Avenue to Mesa Drive	n/a	0.0	NO
	Mesa Drive to College Boulevard	n/a	0.0	NO
Olive Drive	College Boulevard to Emerald Drive	n/a	0.2	NO
Pala Road	Foussat Road Los Arbolitos Boulevard	n/a	0.3	NO
	Los Arbolitos Boulevard to Douglas Drive	n/a	0.2	NO
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	n/a	0.1	NO
	SR78 EB on/off-ramps to Eastern City Limits	n/a	0.0	NO
Rancho Del Oro Drive	Mission Avenue to SR76	n/a	0.2	NO
	SR76 to Mesa Drive	n/a	0.1	NO
	Mesa Drive to Oceanside Boulevard	n/a	0.1	NO
	Oceanside Boulevard to Cameo Drive	n/a	0.0	NO
	Cameo Drive to SR78	n/a	0.0	NO
Vandegrift Boulevard	Northern City Limits to Douglas Drive	n/a	0.0	NO
	Douglas Drive to N. River Road	n/a	0.2	NO
Vista Way	Coast Highway to I-5	n/a	0.0	NO
	Jefferson Street to El Camino Real	n/a	0.0	NO
	El Camino Real to Rancho Del Oro Road	n/a	0.0	NO
	Rancho Del Oro Road to College Boulevard	n/a	0.0	NO
	College Boulevard to Thunder Drive	n/a	-0.1	NO
State Route 76	I-5 to Canyon Drive	n/a	0.0	NO
	Canyon Drive to Foussat Road	n/a	0.0	NO
	Foussat Road to Douglas Drive	n/a	0.0	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.0	NO
	Rancho Del Oro Drive to Frazee Road	n/a	-0.1	NO
	Frazee Road to College Boulevard	n/a	0.0	NO
	College Boulevard to N. Santa Fe Avenue	n/a	0.1	NO
	N. Santa Fe Avenue to Melrose Drive	n/a	0.0	NO
	Melrose Drive to Eastern City Limits	n/a	0.2	NO

TABLE 5c: Comparison of Traffic Noise Increases (Alternative 2 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 2**	**Segment Impacts?**
Cannon Road	Melrose Drive to Western City Limits	n/a	-0.1	NO
Canyon Drive	SR76 to Mission Avenue	n/a	0.1	NO
	Mission Avenue to Oceanside Boulevard	n/a	0.0	NO
Coast Highway	Harbor Drive to SR76	n/a	0.1	NO
	SR76 to Mission Avenue	n/a	-0.3	NO
	Mission Avenue to Wisconsin Avenue	n/a	-0.2	NO
	Wisconsin Avenue to Oceanside Boulevard	n/a	0.0	NO
	Oceanside Boulevard to Cassidy Street	n/a	0.3	NO
	Cassidy Street to Vista Way	n/a	0.1	NO
	Vista Way to Southern City Limits	n/a	0.0	NO
College Boulevard	N. River Road to SR76	n/a	0.3	NO
	SR76 to Frazee Road	n/a	0.2	NO
	Frazee Road to Mesa Drive	n/a	0.1	NO
	Mesa Drive to Old Grove Road	n/a	0.1	NO
	Old Grove Road to Avenida de la Plata	n/a	-0.2	NO
	Avenida de la Plata to Oceanside Boulevard	n/a	-0.3	NO
	Oceanside Boulevard to Olive Drive	n/a	-0.1	NO
	Olive Drive to Waring Road	n/a	-0.2	NO
	Waring Road to Vista Way	n/a	0.5	NO
	Vista Way to SR78	n/a	0.9	NO
	SR78 to Plaza Drive	n/a	0.6	NO
	Plaza Drive to Lake Boulevard	n/a	0.6	NO
	Lake Boulevard to Southern City Limits	n/a	0.0	NO
Douglas Drive	Vandegrift Boulevard to Via Malaguena	n/a	n/a	NO
	Via Malaguena to Cardiff Bay Drive	n/a	n/a	NO
	Cardiff Bay Drive to N. River Road	n/a	0.1	NO
	N. River Road to Pala Road	n/a	0.1	NO
	Pala Road to El Camino Real	n/a	0.5	NO
	El Camino Real to Mission Avenue	n/a	0.1	NO
	Mission Avenue to SR76	n/a	0.0	NO
El Camino Real	Douglas Drive to Mission Avenue	n/a	0.4	NO
	Mission Avenue to Mesa Drive	n/a	-0.1	NO
	Mesa Drive to Oceanside Boulevard	n/a	0.0	NO
	Oceanside Boulevard to Fire Mountain Road	n/a	0.2	NO
	Fire Mountain Road to Via Las Rosas	n/a	0.1	NO
	Via Las Rosas to Vista Way	n/a	0.5	NO
	Vista Way to SR78	n/a	0.9	NO
Emerald Drive	Lake Boulevard to Sunset Drive	n/a	0.6	NO
Frazee Road	Old Grove Road to SR76	n/a	-0.4	NO
	SR76 to College Boulevard	n/a	0.2	NO
	College Boulevard to Sagewood Drive	n/a	1.1	NO
Lake Boulevard	College Boulevard to Thunder Drive	n/a	-0.1	NO
	Thunder Drive to Sundown Lane	n/a	0.0	NO
	Sundown Lane to Sky Haven Lane	n/a	0.0	NO
	Sky Haven Lane to Cannon Road	n/a	0.0	NO

TABLE 5c (cont.): Comparison of Traffic Noise Increases (Alternative 2 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 2**	**Segment Impacts?**
Melrose Drive	SR76 to Spur Avenue	n/a	n/a	NO
	N. Santa Fe Avenue to Oceanside Boulevard	n/a	-1.6	NO
	Oceanside Boulevard to City Limits	n/a	-0.6	NO
	City Limits to Cannon Road	n/a	1.0	NO
	Cannon Road to Southern City Limits	n/a	0.0	NO
Mesa Drive	Mission Avenue to Foussat Road	n/a	0.1	NO
	Foussat Road to El Camino Real	n/a	0.1	NO
	El Camino Real to Rancho Del Oro Drive	n/a	0.3	NO
	Rancho Del Oro Drive to Old Grove Road	n/a	0.1	NO
	Old Grove Road to College Boulevard	n/a	0.3	NO
	College Boulevard to N. Santa Fe Avenue	n/a	0.3	NO
Mission Avenue	Pacific Street to Coast Highway	n/a	0.0	NO
	Coast Highway to Horne Street	n/a	-4.3	NO
	Horne Street to I-5	n/a	0.0	NO
	I-5 to Canyon Drive	n/a	0.0	NO
	Canyon Drive to Mesa Drive	n/a	0.1	NO
	Mesa Drive to Foussat Road	n/a	0.1	NO
	Foussat Road to El Camino Real	n/a	0.4	NO
	El Camino Real to Douglas Drive	n/a	0.1	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.2	NO
	Rancho Del Oro Road to Old Grove Drive	n/a	0.2	NO
	Old Grove Road to Frazee Road	n/a	0.2	NO
North Avenue	Olive Drive to Temple Heights Drive	n/a	0.0	NO
	Temple Heights Drive to Melrose Drive	n/a	0.3	NO
North River Road	Douglas Drive to College Boulevard	n/a	0.2	NO
	College Boulevard to Vandegrift Boulevard	n/a	0.4	NO
	Vandegrift Boulevard to Stallion Road	n/a	1.1	NO
	Stallion Road to Melrose Drive	n/a	-1.8	NO
	Melrose Drive to Eastern City Limits	n/a	-1.3	NO
North Santa Fe Avenue	SR76 to Mesa Drive	n/a	1.1	NO
	Mesa Drive to Melrose Drive	n/a	-0.7	NO
Oceanside Boulevard	Pacific Street to Coast Highway	n/a	-0.1	NO
	Coast Highway to I-5	n/a	0.0	NO
	I-5 to Crouch Street	n/a	0.4	NO
	Crouch Street to Foussat Road	n/a	0.3	NO
	Foussat Road to El Camino Real	n/a	0.3	NO
	El Camino Real to Rancho Del Oro Road	n/a	0.4	NO
	Rancho Del Oro Road to College Boulevard	n/a	0.2	NO
	College Boulevard to Melrose Drive	n/a	0.0	NO
	Melrose Drive to Eastern City Limits	n/a	0.4	NO
Old Grove Road	Frazee Road to SR76	n/a	0.2	NO
	SR76 to Mission Avenue	n/a	0.0	NO
	Mission Avenue to Mesa Drive	n/a	0.0	NO
	Mesa Drive to College Boulevard	n/a	0.1	NO
Olive Drive	College Boulevard to Emerald Drive	n/a	0.5	NO

TABLE 5c (cont.): Comparison of Traffic Noise Increases (Alternative 2 vs. Baseline)

		Effective Change vs. Baseline for…		
Roadway	**Segment**	**2030 Baseline Conditions**	**Alternative 2**	**Segment Impacts?**
Pala Road	Los Arbolitos Boulevard to Douglas Drive	n/a	-3.8	NO
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	n/a	0.5	NO
	SR78 EB on/off-ramps to Eastern City Limits	n/a	0.3	NO
Rancho Del Oro Drive	Mission Avenue to SR76	n/a	0.5	NO
	SR76 to Mesa Drive	n/a	0.2	NO
	Mesa Drive to Oceanside Boulevard	n/a	0.1	NO
	Oceanside Boulevard to Cameo Drive	n/a	-0.7	NO
	Cameo Drive to Vista Way	n/a	-1.0	NO
Vandegrift Boulevard	Northern City Limits to Douglas Drive	n/a	0.0	NO
	Douglas Drive to N. River Road	n/a	0.3	NO
Vista Way	Coast Highway to I-5	n/a	-0.1	NO
	Jefferson Street to El Camino Real	n/a	0.1	NO
	El Camino Real to Rancho Del Oro Road	n/a	1.0	NO
	Rancho Del Oro Road to College Boulevard	n/a	0.9	NO
	College Boulevard to Thunder Drive	n/a	0.3	NO
State Route 76	I-5 to Canyon Drive	n/a	0.2	NO
	Canyon Drive to Foussat Road	n/a	0.1	NO
	Foussat Road to Douglas Drive	n/a	0.1	NO
	Douglas Drive to Rancho Del Oro Drive	n/a	0.2	NO
	Rancho Del Oro Drive to Frazee Road	n/a	0.1	NO
	Frazee Road to College Boulevard	n/a	0.2	NO
	College Boulevard to N. Santa Fe Avenue	n/a	0.5	NO
	N. Santa Fe Avenue to Melrose Drive	n/a	0.8	NO
	Melrose Drive to Eastern City Limits	n/a	-0.3	NO

Based upon the findings, the *net change* in the community noise environment (i.e., the sum of the net differences) due to implementation of Alternative 1 was found to be -2.9 dBA CNEL (an overall reduction in community noise).

The change due to Alternative 2 was found to be +6.2 dBA CNEL (an actual increase in community noise within the City). No additional segment impacts were identified for either alternative compared to the baseline noise increases over existing shown in Table 5a above.

Given this, Alternative 1 is the environmentally preferred alternative from a community noise standpoint.

Comparison of Traffic Air Quality Effects under Scenarios Examined

Similar to the above analysis, Tables 6a through –d starting on the following page identifies the net circulation scenario effects on local ambient air quality concentrations. Segments with non-existent scenarios are indicated by *'n/a'*.

TABLE 6a: Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline vs. Existing)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Cannon Drive	Melrose Drive to Western City Limits	0.0	-0.4	0.9	0.9
Canyon Drive	SR76 to Mission Avenue	0.0	-0.4	0.2	0.2
	Mission Avenue to Oceanside Boulevard	-0.1	-0.6	-0.2	-0.2
Coast Highway	Harbor Drive to SR76	-0.1	-0.5	0.3	0.3
	SR76 to Mission Avenue	-0.1	-0.7	-0.3	-0.3
	Mission Avenue to Wisconsin Avenue	-0.1	-0.8	-0.4	-0.4
	Wisconsin Avenue to Oceanside Boulevard	-0.1	-0.8	-0.4	-0.4
	Oceanside Boulevard to Cassidy Street	-0.1	-0.8	-0.4	-0.4
	Cassidy Street to Vista Way	-0.1	-0.8	-0.4	-0.4
	Vista Way to Southern City Limits	-0.1	-0.7	-0.3	-0.3
College Boulevard	N. River Road to SR76	-0.2	-1.0	-0.6	-0.6
	SR76 to Frazee Road	-0.2	-0.9	-0.3	-0.3
	Frazee Road to Mesa Drive	-0.2	-0.9	-0.4	-0.4
	Mesa Drive to Old Grove Road	-0.2	-0.9	-0.4	-0.4
	Old Grove Road to Avenida de la Plata	n/a	n/a	n/a	n/a
	Avenida de la Plata to Oceanside Boulevard	n/a	n/a	n/a	n/a
	Oceanside Boulevard to Olive Drive	-0.2	-1.1	-0.6	-0.6
	Olive Drive to Waring Road	-0.2	-0.9	-0.5	-0.5
	Waring Road to Vista Way	-0.2	-1.0	-0.5	-0.5
	Vista Way to SR78	-0.2	-0.9	-0.3	-0.3
	SR78 to Plaza Drive	-0.2	-1.0	-0.3	-0.3
	Plaza Drive to Lake Boulevard	-0.2	-0.9	-0.4	-0.4
	Lake Boulevard to Southern City Limits	-0.1	-0.7	0.5	0.5
Douglas Drive	Vandegrift Boulevard to Cardiff Bay Drive	n/a	n/a	n/a	n/a
	Cardiff Bay Drive to N. River Road	-0.1	-0.7	-0.1	-0.1
	N. River Road to Pala Road	-0.2	-0.9	-0.3	-0.3
	Pala Road to El Camino Real	-0.2	-0.9	-0.5	-0.5
	El Camino Real to Mission Avenue	-0.1	-0.8	-0.3	-0.3
	Mission Avenue to SR76	-0.1	-0.7	-0.2	-0.2

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6a (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline vs. Existing)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
El Camino Real	Douglas Drive to Mission Avenue	-0.1	-0.8	-0.3	-0.3
	Mission Avenue to Mesa Drive	-0.1	-0.8	-0.2	-0.2
	Mesa Drive to Oceanside Boulevard	-0.2	-0.9	-0.3	-0.3
	Oceanside Boulevard to Fire Mountain Road	-0.2	-0.9	-0.3	-0.3
	Fire Mountain Road to Via Las Rosas	-0.2	-0.9	0.0	0.0
	Via Las Rosas to Vista Way	-0.2	-1.0	-0.3	-0.3
	Vista Way to SR78	-0.3	-1.1	-0.5	-0.5
Emerald Drive	Lake Boulevard to Sunset Drive	0.0	-0.4	0.1	0.1
Frazee Road	Old Grove Road to SR76	-0.1	-0.5	-0.2	-0.2
	SR76 to College Boulevard	-0.1	-0.6	-0.1	-0.1
	College Boulevard to Sagewood Drive	0.0	-0.4	0.0	0.0
Lake Boulevard	College Boulevard to Thunder Drive	-0.1	-0.6	0.1	0.1
	Thunder Drive to Sundown Lane	-0.1	-0.7	-0.3	-0.3
	Sundown Lane to Sky Haven Lane	-0.1	-0.7	-0.3	-0.3
	Sky Haven Lane to Cannon Road	-0.1	-0.7	-0.3	-0.3
Melrose Drive	N. River Road to SR76	n/a	n/a	n/a	n/a
	SR76 to N. Santa Fe Avenue	n/a	n/a	n/a	n/a
	N. Santa Fe Avenue to Oceanside Boulevard	0.0	-0.5	1.0	1.0
	Oceanside Boulevard to City Limits	-0.1	-0.6	1.0	1.0
	City Limits to Cannon Road	-0.2	-0.8	-0.3	-0.3
	Cannon Road to Southern City Limits	-0.2	-0.9	-0.4	-0.4
Mesa Drive	Mission Avenue to Foussat Road	0.0	-0.4	0.2	0.2
	Foussat Road to El Camino Real	0.0	-0.4	0.1	0.1
	El Camino Real to Rancho Del Oro Drive	-0.1	-0.6	-0.1	-0.1
	Rancho Del Oro Drive to Old Grove Road	-0.1	-0.6	0.1	0.1
	Old Grove Road to College Boulevard	-0.1	-0.7	-0.1	-0.1
	College Boulevard to N. Santa Fe Avenue	-0.1	-0.6	-0.1	-0.1

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6a (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline vs. Existing)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Coast Highway	-0.1	-0.5	0.1	0.1
	Coast Highway to Horne Street	0.0	-0.5	0.3	0.3
	Horne Street to I-5	-0.1	-0.6	0.3	0.3
	I-5 to Canyon Drive	-0.2	-0.8	-0.2	-0.2
	Canyon Drive to Mesa Drive	-0.1	-0.8	-0.3	-0.3
	Mesa Drive to Foussat Road	-0.1	-0.7	0.0	0.0
	Foussat Road to El Camino Real	-0.1	-0.8	-0.2	-0.2
	El Camino Real to Douglas Drive	-0.1	-0.7	-0.2	-0.2
	Douglas Drive to Rancho Del Oro Drive	-0.1	-0.8	-0.2	-0.2
	Rancho Del Oro Road to Old Grove Drive	-0.1	-0.6	-0.1	-0.1
	Old Grove Road to Frazee Road	-0.1	-0.6	-0.2	-0.2
North Avenue	Olive Drive to Temple Heights Drive	-0.1	-0.5	-0.1	-0.1
	Temple Heights Dr to Melrose Drive	0.0	-0.5	-0.1	-0.1
North River Road	Douglas Drive to College Boulevard	-0.1	-0.7	-0.2	-0.2
	College Boulevard to Vandegrift Boulevard	-0.2	-0.9	-0.3	-0.3
	Vandegrift Boulevard to Stallion Road	-0.1	-0.6	-0.3	-0.3
	Stallion Road to Melrose Drive	n/a	n/a	n/a	n/a
	Melrose Drive to Eastern City Limits	n/a	n/a	n/a	n/a
North Santa Fe Avenue	SR76 to Mesa Drive	-0.1	-0.8	-0.3	-0.3
	Mesa Drive to Melrose Drive	-0.1	-0.8	-0.2	-0.2
Oceanside Boulevard	Pacific Street to Coast Highway	0.0	-0.5	0.1	0.1
	Coast Highway to I-5	-0.1	-0.8	-0.5	-0.5
	I-5 to Crouch Street	-0.2	-0.9	-0.5	-0.5
	Crouch Street to Foussat Road	-0.2	-0.9	-0.3	-0.3
	Foussat Road to El Camino Real	-0.1	-0.8	-0.1	-0.1
	El Camino Real to Rancho Del Oro Road	-0.2	-0.9	-0.2	-0.2
	Rancho Del Oro Road to College Boulevard	-0.1	-0.8	0.1	0.1
	College Boulevard to Melrose Drive	-0.1	-0.8	-0.3	-0.3
	Melrose Drive to Eastern City Limits	-0.1	-0.7	0.2	0.2
Old Grove Road	Frazee Road to SR76	-0.1	-0.6	-0.2	-0.2
	SR76 to Mission Avenue	-0.1	-0.6	0.2	0.2
	Mission Avenue to Mesa Drive	-0.1	-0.6	0.1	0.1
	Mesa Drive to College Boulevard	-0.1	-0.5	0.5	0.5

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6a (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Baseline vs. Existing)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Olive Drive	College Boulevard to Emerald Drive	-0.1	-0.7	-0.3	-0.3
Pala Road	Foussat Road Los Arbolitos Boulevard	n/a	n/a	n/a	n/a
	Los Arbolitos Boulevard to Douglas Drive	0.0	-0.4	0.1	0.1
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	-0.1	-0.8	-0.3	-0.3
	SR78 EB on/off-ramps to Eastern City Limits	-0.1	-0.7	-0.3	-0.3
Rancho Del Oro Drive	Mission Avenue to SR76	-0.1	-0.6	-0.3	-0.3
	SR76 to Mesa Drive	-0.1	-0.6	0.3	0.3
	Mesa Drive to Oceanside Boulevard	-0.1	-0.5	0.6	0.6
	Oceanside Boulevard to Cameo Drive	0.0	-0.5	0.9	0.9
	Cameo Drive to SR78	-0.1	-0.5	0.7	0.7
Vandegrift Boulevard	Northern City Limits to Douglas Drive	-0.1	-0.8	-0.2	-0.2
	Douglas Drive to N. River Road	-0.1	-0.8	-0.2	-0.2
Vista Way	Coast Highway to I-5	-0.1	-0.7	-0.4	-0.4
	Jefferson Street to El Camino Real	-0.1	-0.7	-0.2	-0.2
	El Camino Real to Rancho Del Oro Road	-0.1	-0.7	-0.1	-0.1
	Rancho Del Oro Road to College Boulevard	-0.1	-0.8	-0.2	-0.2
	College Boulevard to Thunder Drive	-0.1	-0.7	-0.2	-0.2
State Route 76	I-5 to Canyon Drive	-0.2	-1.0	-0.3	-0.3
	Canyon Drive to Foussat Road	-0.3	-1.1	-0.3	-0.3
	Foussat Road to Douglas Drive	-0.3	-1.1	-0.5	-0.5
	Douglas Drive to Rancho Del Oro Drive	-0.2	-1.0	-0.4	-0.4
	Rancho Del Oro Drive to Frazee Road	-0.2	-1.0	0.0	0.0
	Frazee Road to College Boulevard	-0.2	-1.0	-0.4	-0.4
	College Boulevard to N. Santa Fe Avenue	-0.2	-0.8	0.4	0.4
	N. Santa Fe Avenue to Melrose Drive	-0.2	-0.9	0.2	0.2
	Melrose Drive to Eastern City Limits	-0.1	-0.8	0.8	0.8

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6b: Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (µg/m^3)
Cannon Road	Melrose Drive to Western City Limits	0.0	0.0	0.0	0.0
Canyon Drive	SR76 to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to Oceanside Boulevard	0.0	0.0	0.0	0.0
Coast Highway	Harbor Drive to SR76	0.0	0.0	0.0	0.0
	SR76 to Mission Avenue	0.0	0.0	-0.1	-0.1
	Mission Avenue to Wisconsin Avenue	0.0	0.0	-0.1	-0.1
	Wisconsin Avenue to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Cassidy Street	0.0	0.0	0.0	0.0
	Cassidy Street to Vista Way	0.0	0.0	-0.1	-0.1
	Vista Way to Southern City Limits	0.0	0.0	-0.1	-0.1
College Boulevard	N. River Road to SR76	0.0	0.0	0.2	0.2
	SR76 to Frazee Road	0.0	0.0	0.0	0.0
	Frazee Road to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Old Grove Road	0.0	0.0	-0.1	-0.1
	Old Grove Road to Avenida de la Plata	0.0	0.0	-0.1	-0.1
	Avenida de la Plata to Oceanside Boulevard	0.0	0.0	-0.1	-0.1
	Oceanside Boulevard to Olive Drive	0.0	0.0	-0.2	-0.2
	Olive Drive to Waring Road	0.0	0.0	-0.2	-0.2
	Waring Road to Vista Way	0.0	0.0	-0.1	-0.1
	Vista Way to SR78	0.0	0.0	-0.1	-0.1
	SR78 to Plaza Drive	0.0	0.0	0.0	0.0
	Plaza Drive to Lake Boulevard	0.0	0.0	0.0	0.0
	Lake Boulevard to Southern City Limits	0.0	0.0	0.0	0.0
Douglas Drive	Vandegrift Boulevard to Via Malaguena	n/a	n/a	n/a	n/a
	Via Malaguena to Cardiff Bay Drive	n/a	n/a	n/a	n/a
	Cardiff Bay Drive to N. River Road	0.0	0.0	0.0	0.0
	N. River Road to Pala Road	0.0	0.0	0.1	0.1
	Pala Road to El Camino Real	0.0	0.0	0.1	0.1
	El Camino Real to Mission Ave	0.0	0.0	0.0	0.0
	Mission Avenue to SR76	0.0	0.0	0.0	0.0

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (µg/m^3).

TABLE 6b (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
El Camino Real	Douglas Drive to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Fire Mountain Road	0.0	0.0	0.0	0.0
	Fire Mountain Road to Via Las Rosas	0.0	0.0	0.0	0.0
	Via Las Rosas to Vista Way	0.0	0.0	0.0	0.0
	Vista Way to SR78	0.0	0.0	0.0	0.0
Emerald Drive	Lake Boulevard to Sunset Drive	0.0	0.0	0.0	0.0
Frazee Road	Old Grove Road to SR76	0.0	0.0	0.0	0.0
	SR76 to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to Sagewood Drive	0.0	0.0	0.0	0.0
Lake Boulevard	College Boulevard to Thunder Drive	0.0	0.0	0.0	0.0
	Thunder Drive to Sundown Lane	0.0	0.0	0.0	0.0
	Sundown Lane to Sky Haven Lane	0.0	0.0	0.0	0.0
	Sky Haven Lane to Cannon Road	0.0	0.0	0.0	0.0
Melrose Drive	SR76 to N. Santa Fe Avenue	0.0	0.0	-0.2	-0.2
	N. Santa Fe Avenue to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to City Limits	0.0	0.0	0.0	0.0
	City Limits to Cannon Road	0.0	0.0	0.0	0.0
	Cannon Road to Southern City Limits	0.0	0.0	0.0	0.0
Mesa Drive	Mission Avenue to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Rancho Del Oro Drive	0.0	0.0	0.0	0.0
	Rancho Del Oro Drive to Old Grove Road	0.0	0.0	0.0	0.0
	Old Grove Road to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to N. Santa Fe Avenue	0.0	0.0	0.0	0.0

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6b (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Cleveland Street	n/a	n/a	n/a	n/a
	Cleveland Street to Coast Highway	n/a	n/a	n/a	n/a
	Coast Highway to Clementine Street	n/a	n/a	n/a	n/a
	Clementine Street to Horne Street	n/a	n/a	n/a	n/a
	Horne Street to I-5	0.0	0.0	0.0	0.0
	I-5 to Canyon Drive	0.0	0.0	0.0	0.0
	Canyon Drive to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Douglas Drive	0.0	0.0	0.0	0.0
	Douglas Drive to Rancho Del Oro Drive	0.0	0.0	0.0	0.0
	Rancho Del Oro Drive to Old Grove Road	0.0	0.0	0.0	0.0
	Old Grove Road to Frazee Road	0.0	0.0	0.0	0.0
North Avenue	Olive Drive to Temple Heights Drive	0.0	0.0	0.0	0.0
	Temple Heights Drive to Melrose Drive	0.0	0.0	0.0	0.0
North River Road	Douglas Drive to College Boulevard	0.0	0.0	0.1	0.1
	College Boulevard to Vandegrift Boulevard	0.0	0.0	0.2	0.2
	Vandegrift Boulevard to Stallion Road	0.0	0.0	0.1	0.1
	Stallion Road to Melrose Dr	0.0	-0.1	-0.3	-0.3
	Melrose Drive to Eastern City Limits	0.0	0.0	-0.2	-0.2
North Santa Fe Avenue	SR76 to Mesa Drive	0.0	0.0	0.1	0.1
	Mesa Drive to Melrose Drive	0.0	0.0	0.1	0.1
Oceanside Boulevard	Pacific Street to Coast Highway	0.0	0.0	0.0	0.0
	Coast Highway to I-5	0.0	0.0	0.0	0.0
	I-5 to Crouch Street	0.0	0.0	0.0	0.0
	Crouch Street to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Rancho Del Oro Road	0.0	0.0	0.0	0.0
	Rancho Del Oro Road to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to Melrose Drive	0.0	0.0	0.0	0.0
	Melrose Drive to Eastern City Limits	0.0	0.0	0.0	0.0

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6b (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 1 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Old Grove Road	Frazee Road to SR76	0.0	0.0	0.0	0.0
	SR76 to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to College Boulevard	0.0	0.0	0.0	0.0
Olive Drive	College Boulevard to Emerald Drive	0.0	0.0	0.1	0.1
Pala Road	Foussat Road Los Arbolitos Boulevard	0.0	0.0	0.0	0.0
	Los Arbolitos Boulevard to Douglas Drive	0.0	0.0	0.0	0.0
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	0.0	0.0	0.0	0.0
	SR78 EB on/off-ramps to Eastern City Limits	0.0	0.0	0.0	0.0
Rancho Del Oro Drive	Mission Avenue to SR76	0.0	0.0	0.0	0.0
	SR76 to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Cameo Drive	0.0	0.0	0.0	0.0
	Cameo Drive to SR78	0.0	0.0	0.0	0.0
Vandegrift Boulevard	Northern City Limits to Douglas Drive	0.0	0.0	0.0	0.0
	Douglas Drive to N. River Road	0.0	0.0	0.1	0.1
Vista Way	Coast Highway to I-5	0.0	0.0	0.0	0.0
	Jefferson Street to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Rancho Del Oro Road	0.0	0.0	0.0	0.0
	Rancho Del Oro Road to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to Thunder Drive	0.0	0.0	0.0	0.0
State Route 76	I-5 to Canyon Drive	0.0	0.0	0.0	0.0
	Canyon Drive to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to Douglas Drive	0.0	0.0	0.0	0.0
	Douglas Drive to Rancho Del Oro Drive	0.0	0.0	0.0	0.0
	Rancho Del Oro Drive to Frazee Road	0.0	0.0	0.0	0.0
	Frazee Road to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to N. Santa Fe Avenue	0.0	0.0	0.1	0.1
	N. Santa Fe Avenue to Melrose Drive	0.0	0.0	0.0	0.0
	Melrose Drive to Eastern City Limits	0.0	0.0	0.2	0.2

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6c: Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (µg/m^3)
Cannon Road	Melrose Drive to Western City Limits	0.0	0.0	0.0	0.0
Canyon Drive	SR76 to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to Oceanside Boulevard	0.0	0.0	0.0	0.0
Coast Highway	Harbor Drive to SR76	0.0	0.0	0.0	0.0
	SR76 to Mission Avenue	0.0	0.0	-0.1	-0.1
	Mission Avenue to Wisconsin Avenue	0.0	0.0	-0.1	-0.1
	Wisconsin Avenue to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Cassidy Street	0.0	0.0	0.1	0.1
	Cassidy Street to Vista Way	0.0	0.0	0.0	0.0
	Vista Way to Southern City Limits	0.0	0.0	0.0	0.0
College Boulevard	N. River Road to SR76	0.0	0.0	0.2	0.2
	SR76 to Frazee Road	0.0	0.0	0.1	0.1
	Frazee Road to Mesa Drive	0.0	0.0	0.1	0.1
	Mesa Drive to Old Grove Road	0.0	0.0	0.0	0.0
	Old Grove Road to Avenida de la Plata	0.0	0.0	-0.1	-0.1
	Avenida de la Plata to Oceanside Boulevard	0.0	0.0	-0.1	-0.1
	Oceanside Boulevard to Olive Drive	0.0	0.0	0.0	0.0
	Olive Drive to Waring Road	0.0	0.0	-0.1	-0.1
	Waring Road to Vista Way	0.0	0.0	0.3	0.3
	Vista Way to SR78	0.0	0.1	0.6	0.6
	SR78 to Plaza Drive	0.0	0.0	0.4	0.4
	Plaza Drive to Lake Boulevard	0.0	0.0	0.3	0.3
	Lake Boulevard to Southern City Limits	0.0	0.0	0.0	0.0
Douglas Drive	Vandegrift Boulevard to Via Malaguena	n/a	n/a	n/a	n/a
	Via Malaguena to Cardiff Bay Drive	n/a	n/a	n/a	n/a
	Cardiff Bay Drive to N. River Road	0.0	0.0	0.0	0.0
	N. River Road to Pala Road	0.0	0.0	0.1	0.1
	Pala Road to El Camino Real	0.0	0.0	0.2	0.2
	El Camino Real to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to SR76	0.0	0.0	0.0	0.0

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (µg/m^3).

TABLE 6c (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
El Camino Real	Douglas Drive to Mission Avenue	0.0	0.0	0.1	0.1
	Mission Avenue to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Fire Mountain Road	0.0	0.0	0.1	0.1
	Fire Mountain Road to Via Las Rosas	0.0	0.0	0.0	0.0
	Via Las Rosas to Vista Way	0.0	0.0	0.4	0.4
	Vista Way to SR78	0.0	0.1	0.8	0.8
Emerald Drive	Lake Boulevard to Sunset Drive	0.0	0.0	0.0	0.0
Frazee Road	Old Grove Road to SR76	0.0	0.0	0.0	0.0
	SR76 to College Boulevard	0.0	0.0	0.0	0.0
	College Boulevard to Sagewood Drive	0.0	0.0	0.1	0.1
Lake Boulevard	College Boulevard to Thunder Drive	0.0	0.0	0.0	0.0
	Thunder Drive to Sundown Lane	0.0	0.0	0.0	0.0
	Sundown Lane to Sky Haven Lane	0.0	0.0	0.0	0.0
	Sky Haven Lane to Cannon Road	0.0	0.0	0.0	0.0
Melrose Drive	SR76 to Spur Avenue				
	N. Santa Fe Avenue to Oceanside Boulevard	0.0	-0.1	-0.7	-0.7
	Oceanside Boulevard to City Limits	0.0	0.0	-0.3	-0.3
	City Limits to Cannon Road	0.0	0.1	0.5	0.5
	Cannon Road to Southern City Limits	0.0	0.0	0.0	0.0
Mesa Drive	Mission Avenue to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Rancho Del Oro Drive	0.0	0.0	0.1	0.1
	Rancho Del Oro Drive to Old Grove Road	0.0	0.0	0.0	0.0
	Old Grove Road to College Boulevard	0.0	0.0	0.1	0.1
	College Boulevard to N. Santa Fe Avenue	0.0	0.0	0.1	0.1

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6c (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Mission Avenue	Pacific Street to Coast Highway	0.0	0.0	0.0	0.0
	Coast Highway to Horne Street	0.0	0.0	0.0	0.0
	Horne Street to I-5	0.0	0.0	0.0	0.0
	I-5 to Canyon Drive	0.0	0.0	0.0	0.0
	Canyon Drive to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to Foussat Road	0.0	0.0	0.0	0.0
	Foussat Road to El Camino Real	0.0	0.0	0.2	0.2
	El Camino Real to Douglas Drive	0.0	0.0	0.0	0.0
	Douglas Drive to Rancho Del Oro Drive	0.0	0.0	0.1	0.1
	Rancho Del Oro Road to Old Grove Drive	0.0	0.0	0.0	0.0
	Old Grove Road to Frazee Road	0.0	0.0	0.0	0.0
North Avenue	Olive Drive to Temple Heights Drive	0.0	0.0	0.0	0.0
	Temple Heights Drive to Melrose Drive	0.0	0.0	0.0	0.0
North River Road	Douglas Drive to College Boulevard	0.0	0.0	0.1	0.1
	College Boulevard to Vandegrift Boulevard	0.0	0.0	0.2	0.2
	Vandegrift Boulevard to Stallion Road	0.0	0.0	0.2	0.2
	Stallion Road to Melrose Drive	0.0	-0.1	-0.2	-0.2
	Melrose Drive to Eastern City Limits	0.0	0.0	-0.2	-0.2
North Santa Fe Avenue	SR76 to Mesa Drive	0.0	0.1	0.4	0.4
	Mesa Drive to Melrose Drive	0.0	0.0	-0.3	-0.3
Oceanside Boulevard	Pacific Street to Coast Highway	0.0	0.0	0.0	0.0
	Coast Highway to I-5	0.0	0.0	0.0	0.0
	I-5 to Crouch Street	0.0	0.0	0.2	0.2
	Crouch Street to Foussat Road	0.0	0.0	0.1	0.1
	Foussat Road to El Camino Real	0.0	0.0	0.1	0.1
	El Camino Real to Rancho Del Oro Road	0.0	0.0	0.2	0.2
	Rancho Del Oro Road to College Boulevard	0.0	0.0	0.1	0.1
	College Boulevard to Melrose Drive	0.0	0.0	0.0	0.0
	Melrose Drive to Eastern City Limits	0.0	0.0	0.2	0.2
Old Grove Road	Frazee Road to SR76	0.0	0.0	0.0	0.0
	SR76 to Mission Avenue	0.0	0.0	0.0	0.0
	Mission Avenue to Mesa Drive	0.0	0.0	0.0	0.0
	Mesa Drive to College Boulevard	0.0	0.0	0.0	0.0

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

TABLE 6c (cont.): Effective Segment Changes for CO, NO_X, PM_{10} and $PM_{2.5}$ (Alternative 2 vs. Baseline)

Roadway	Segment	Δ CO (ppm)	Δ NO_X (pphm)	Δ PM_{10} (ppm)	Δ $PM_{2.5}$ (μg/m^3)
Olive Drive	College Boulevard to Emerald Drive	0.0	0.0	0.1	0.1
Pala Road	Los Arbolitos Boulevard to Douglas Drive	0.0	-0.1	-0.4	-0.4
Plaza Drive	College Boulevard to SR78 EB on/off-ramps	0.0	0.0	0.2	0.2
	SR78 EB on/off-ramps to Eastern City Limits	0.0	0.0	0.1	0.1
Rancho Del Oro Drive	Mission Avenue to SR76	0.0	0.0	0.1	0.1
	SR76 to Mesa Drive	0.0	0.0	0.1	0.1
	Mesa Drive to Oceanside Boulevard	0.0	0.0	0.0	0.0
	Oceanside Boulevard to Cameo Drive	0.0	0.0	-0.3	-0.3
	Cameo Drive to Vista Way	0.0	-0.1	-0.4	-0.4
Vandegrift Boulevard	Northern City Limits to Douglas Drive	0.0	0.0	0.0	0.0
	Douglas Drive to N. River Road	0.0	0.0	0.1	0.1
Vista Way	Coast Highway to I-5	0.0	0.0	0.0	0.0
	Jefferson Street to El Camino Real	0.0	0.0	0.0	0.0
	El Camino Real to Rancho Del Oro Road	0.0	0.0	0.3	0.3
	Rancho Del Oro Road to College Boulevard	0.0	0.0	0.3	0.3
	College Boulevard to Thunder Drive	0.0	0.0	0.1	0.1
State Route 76	I-5 to Canyon Drive	0.0	0.0	0.1	0.1
	Canyon Drive to Foussat Road	0.0	0.0	0.1	0.1
	Foussat Road to Douglas Drive	0.0	0.0	0.1	0.1
	Douglas Drive to Rancho Del Oro Drive	0.0	0.0	0.1	0.1
	Rancho Del Oro Drive to Frazee Road	0.0	0.0	0.1	0.1
	Frazee Road to College Boulevard	0.0	0.0	0.1	0.1
	College Boulevard to N. Santa Fe Avenue	0.0	0.0	0.4	0.4
	N. Santa Fe Avenue to Melrose Drive	0.0	0.1	0.6	0.6
	Melrose Drive to Eastern City Limits	0.0	0.0	-0.2	-0.2

All levels in parts-per-million (ppm), parts-per-hundred million (pphm), or micrograms-per-cubic-meter (μg/m^3).

Overall, there is a general trend of pollution reduction along most roadway segments owing entirely to enhanced pollution controls identified in the EMFAC Baseline Year 2030 model and not present in the EMFAC Existing Year 2011 model. These emission reductions are principally due to cleaner fuels and improved emission control systems mandated for automobiles within California by CARB.

A direct comparison of Alternative 1 against this 'cleaner' baseline condition identified a further aggregate citywide reduction in NO_x (-0.1 pphm), PM_{10} (-0.7 $\mu g/m^3$) and $PM_{2.5}$ (-0.7 $\mu g/m^3$) under this alternative scenario. No additional reductions were indicated for CO.

Comparison of Alternative 2 versus the 2030 baseline condition actually shows an aggregate increase in criteria pollutants. These increases were identified as CO (+0.3 ppm), NO_x (+0.8 pphm), PM_{10} (+6.9 $\mu g/m^3$) and $PM_{2.5}$ (+6.9 $\mu g/m^3$).

Given this, Alternative 1 is the environmentally preferred alternative from an air quality conformity standpoint.

Comparison of Traffic GHG Effects under Scenarios Examined

Finally, aggregate citywide GHG emissions were obtained by tallying and comparing the findings shown in Tables 4a through –d. Under the baseline (Year 2011) condition, the equivalent CO_{2e} emitted by per mile per day for vehicles traveling within the City proper was 2,350,055.4 pounds, which equates to approximately 1,066 metric tons of CO_{2e} per mile per day.[23]

Under the Baseline Year 2030 (no-project) scenario, this GHG level would increase to 2,687,509.7 pounds of CO_{2e} per mile per day, a 14.36-percent increase over existing 2011 levels. This GHG level (the Baseline Year 2030 no-project scenario) would constitute the starting condition per AB 32 to address the *'business as usual'* comparison.

Examining Table 4c indicates a citywide GHG level of 2,698,908.5 pounds of CO_{2e} per mile per day for Alternative 1. Table 4d indicates a citywide GHG level of 2,767,132.7 pounds of CO_{2e} per mile per day for Alternative 2. Thus, Alternative 1 would produce a 0.42-percent increase in GHG levels compared to *'business as usual'* levels. Alternative 2 would produce a 3.0-percent increase in GHG levels compared to *'business as usual'* levels.

Although neither alternative demonstrates a reduction of *'business as usual'* levels, Alternative 1 is on an approximate parity with the no-project baseline levels while Alternative 2 increases the overall citywide GHG levels.

[23] A single-number CO_{2e} emission level in pounds/day is easily derivable from this value by multiplying the overall value shown (or any segment value shown for that matter) times the length of the roadway segment in question. For the citywide levels, the result would equal the aforementioned level times the length of all the circulation element roads within the City of Oceanside.

Summary of Analysis Conclusions and Findings

Under the future conditions baseline scenario, traffic noise is expected to increase as a natural consequence of City growth. Improvements in vehicle emissions technology and cleaner-burning fuels has demonstrated that aggregate and segment emissions under the future baseline condition would actually be less than what currently exists within the City today. No segment noise or air quality impacts were identified as a direct consequence of proposed Alternatives 1 or 2.

When comparing the two City-proposed circulation element design Alternatives 1 and 2 against the no-project baseline conditions it was found that Alternative 1 is clearly the environmentally superior alternative as it produces *net overall decreases* in both community noise and criteria air pollutant emissions. Alternative 1 maintains an approximate parity on GHG emissions when compared to the baseline scenario. It is recommended that the City work to establish future programs with the goal to reduce this GHG level to a point below the baseline levels identified in this report.

CERTIFICATION OF ACCURACY AND QUALIFICATIONS

This report was prepared by Investigative Science and Engineering, Inc. (ISE), located at 1134 D Street, Ramona, CA 92065. The members of its professional staff contributing to the report are listed below:

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ISE affirms to the best of its knowledge and belief that the statements and information contained herein are in all respects true and correct as of the date of this report. Should the reader have any questions regarding the findings and conclusions presented in this report, please do not hesitate to contact ISE at (760) 787-0016.

Content and information contained within this report is intended only for the subject project and is protected under 17 U.S.C. §§ 101 through 810. Original reports contain a non-photo blue ISE watermark at the bottom of each page.

Approved as to Form and Content:

Rick Tavares, Ph.D.

Project Principal
Investigative Science and Engineering, Inc. (ISE)

APPENDICES / SUPPLEMENTAL INFORMATION

EMFAC 2007 EMISSION FACTOR TABULATIONS – SCENARIO YEAR 2011

```
Title    : San Diego Air Basin Avg Winter CYrs 2011 and 2030 Default Title
Version  : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/03/01 14:01:54
Scen Year: 2011 -- All model years in the range 1967 to 2011 selected
Season   : Winter
Area     : San Diego
*******************************************************************************
     Year: 2011 -- Model Years 1967 to 2011 Inclusive -- Winter
     Emfac2007 Emission Factors: V2.3 Nov 1 2006

          San Diego                      Basin Average                  Basin Average

                          Table   1:  Running Exhaust Emissions (grams/mile)

     Pollutant Name: Reactive Org Gases        Temperature:  50F  Relative Humidity:  40%
```

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.274	0.276	0.436	3.287	1.984	4.313	0.449
15	0.189	0.192	0.302	1.741	1.443	3.495	0.295
20	0.138	0.140	0.221	1.034	1.092	2.972	0.210
25	0.106	0.108	0.169	0.824	0.858	2.653	0.166
30	0.086	0.088	0.136	0.667	0.701	2.486	0.138
35	0.073	0.076	0.114	0.554	0.595	2.446	0.120
40	0.066	0.068	0.101	0.478	0.524	2.526	0.110
45	0.063	0.065	0.094	0.436	0.479	2.739	0.106
50	0.063	0.064	0.092	0.425	0.454	3.116	0.109
55	0.066	0.067	0.094	0.444	0.447	3.717	0.118
60	0.073	0.074	0.101	0.493	0.457	4.647	0.135
65	0.085	0.086	0.115	0.571	0.484	6.087	0.163

```
     Pollutant Name: Carbon Monoxide           Temperature:  50F  Relative Humidity:  40%
```

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	3.997	4.923	6.011	15.391	15.177	31.218	5.254
15	3.512	4.312	4.988	10.908	10.412	27.148	4.469
20	3.136	3.838	4.277	8.158	7.569	24.732	3.907
25	2.838	3.464	3.767	6.611	5.830	23.599	3.499
30	2.598	3.166	3.394	5.548	4.757	23.596	3.193
35	2.406	2.928	3.123	4.828	4.111	24.751	2.967
40	2.254	2.741	2.932	4.372	3.762	27.276	2.811
45	2.139	2.601	2.815	4.140	3.646	31.631	2.724
50	2.061	2.508	2.770	4.122	3.742	38.659	2.712
55	2.026	2.465	2.807	4.327	4.066	49.847	2.796
60	2.042	2.485	2.951	4.796	4.678	67.851	3.011
65	2.131	2.589	3.247	5.605	5.699	97.513	3.429

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.423	0.668	1.168	16.483	24.415	1.314	1.250
15	0.377	0.589	1.039	12.670	19.761	1.324	1.033
20	0.343	0.530	0.948	10.991	16.815	1.342	0.918
25	0.317	0.487	0.887	10.391	15.033	1.369	0.858
30	0.299	0.457	0.850	9.975	14.110	1.401	0.817
35	0.287	0.437	0.832	9.730	13.894	1.440	0.794
40	0.280	0.427	0.833	9.653	14.350	1.484	0.785
45	0.277	0.425	0.851	9.753	15.544	1.534	0.791
50	0.280	0.432	0.890	10.046	17.664	1.589	0.814
55	0.287	0.448	0.953	10.568	21.070	1.650	0.856
60	0.299	0.475	1.045	11.374	26.401	1.718	0.922
65	0.318	0.514	1.179	12.550	34.774	1.794	1.018

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	717.614	891.086	1247.206	2294.145	2492.792	207.025	899.897
15	562.978	699.722	965.246	1941.285	2399.506	178.774	710.661
20	458.410	570.318	779.524	1696.289	2342.706	157.977	583.077
25	387.411	482.456	655.993	1597.005	2307.406	142.862	499.313
30	339.807	423.546	574.487	1521.032	2285.414	132.264	442.961
35	309.333	385.834	522.976	1463.838	2272.181	125.455	406.647
40	292.243	364.685	494.447	1422.940	2265.215	122.045	385.997
45	286.536	357.622	485.237	1397.119	2263.292	121.947	378.691
50	291.561	363.841	494.211	1386.047	2266.084	125.386	383.984
55	307.891	384.049	522.516	1390.201	2274.068	132.959	402.565
60	337.433	420.608	573.842	1410.992	2288.662	145.779	436.691
65	383.805	477.994	655.263	1451.201	2312.656	165.730	490.652

Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.007	0.009	0.012	0.022	0.024	0.003	0.009
15	0.005	0.007	0.009	0.019	0.023	0.002	0.007
20	0.004	0.006	0.008	0.016	0.022	0.002	0.006
25	0.004	0.005	0.006	0.015	0.022	0.002	0.005
30	0.003	0.004	0.006	0.015	0.022	0.002	0.004
35	0.003	0.004	0.005	0.014	0.022	0.002	0.004
40	0.003	0.004	0.005	0.014	0.022	0.002	0.004
45	0.003	0.003	0.005	0.013	0.022	0.002	0.004
50	0.003	0.004	0.005	0.013	0.022	0.002	0.004
55	0.003	0.004	0.005	0.013	0.022	0.002	0.004
60	0.003	0.004	0.006	0.014	0.022	0.003	0.004
65	0.004	0.005	0.006	0.014	0.022	0.003	0.005

Pollutant Name: PM10 Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.038	0.078	0.080	0.889	0.546	0.039	0.089
15	0.026	0.054	0.055	0.623	0.409	0.032	0.062
20	0.019	0.039	0.041	0.463	0.318	0.028	0.046
25	0.014	0.030	0.031	0.392	0.256	0.025	0.036
30	0.012	0.024	0.025	0.341	0.213	0.024	0.030
35	0.010	0.020	0.021	0.308	0.184	0.023	0.026
40	0.009	0.018	0.019	0.291	0.165	0.024	0.024
45	0.008	0.017	0.018	0.290	0.152	0.026	0.023
50	0.008	0.017	0.017	0.303	0.146	0.030	0.024
55	0.009	0.017	0.018	0.332	0.145	0.035	0.025
60	0.009	0.019	0.019	0.376	0.149	0.044	0.028
65	0.011	0.022	0.022	0.434	0.159	0.057	0.033

EMFAC 2007 EMISSION FACTOR TABULATIONS – SCENARIO YEAR 2030

```
Title    : San Diego Air Basin Avg Winter CYrs 2011 and 2030 Default Title
Version  : Emfac2007 V2.3 Nov 1 2006
Run Date : 2011/03/01 14:01:54
Scen Year: 2030 -- All model years in the range 1986 to 2030 selected
Season   : Winter
Area     : San Diego
*******************************************************************************
     Year: 2030 -- Model Years 1986 to 2030 Inclusive -- Winter
     Emfac2007 Emission Factors: V2.3 Nov 1 2006

          San Diego                      Basin Average                 Basin Average

                          Table   1:  Running Exhaust Emissions (grams/mile)

     Pollutant Name: Reactive Org Gases        Temperature:  50F  Relative Humidity:  40%

     Speed
      MPH       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       10      0.104    0.055    0.088    0.999    1.138    3.750    0.154
       15      0.070    0.037    0.060    0.519    0.837    2.975    0.102
       20      0.050    0.027    0.044    0.327    0.639    2.484    0.075
       25      0.038    0.020    0.033    0.280    0.506    2.182    0.060
       30      0.030    0.016    0.027    0.241    0.416    2.018    0.051
       35      0.025    0.013    0.022    0.210    0.355    1.965    0.046
       40      0.022    0.012    0.020    0.185    0.315    2.014    0.043
       45      0.021    0.011    0.018    0.165    0.289    2.172    0.042
       50      0.020    0.011    0.018    0.151    0.276    2.464    0.044
       55      0.021    0.011    0.018    0.141    0.272    2.939    0.049
       60      0.024    0.012    0.019    0.137    0.279    3.681    0.057
       65      0.028    0.014    0.022    0.137    0.296    4.840    0.071


     Pollutant Name: Carbon Monoxide           Temperature:  50F  Relative Humidity:  40%

     Speed
      MPH       LDA      LDT      MDT      HDT      UBUS     MCY      ALL

       10      1.313    1.532    1.989    4.007    7.512   21.986    1.765
       15      1.199    1.394    1.763    2.610    5.134   19.368    1.556
       20      1.098    1.274    1.582    1.901    3.719   17.696    1.400
       25      1.008    1.168    1.435    1.617    2.856   16.764    1.282
       30      0.929    1.075    1.312    1.434    2.324   16.483    1.187
       35      0.858    0.993    1.207    1.322    2.004   16.863    1.110
       40      0.796    0.920    1.118    1.265    1.830   18.019    1.052
       45      0.740    0.856    1.042    1.253    1.771   20.198    1.013
       50      0.690    0.799    0.978    1.282    1.816   23.859    0.996
       55      0.645    0.749    0.925    1.354    1.971   29.812    1.008
       60      0.605    0.705    0.883    1.473    2.267   39.508    1.062
       65      0.569    0.665    0.852    1.652    2.761   55.593    1.182
```

Pollutant Name: Oxides of Nitrogen Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.174	0.166	0.307	6.002	14.150	1.360	0.432
15	0.155	0.147	0.273	4.676	11.522	1.319	0.359
20	0.140	0.132	0.248	3.894	9.865	1.294	0.312
25	0.128	0.121	0.231	3.532	8.867	1.284	0.286
30	0.120	0.113	0.220	3.244	8.358	1.287	0.267
35	0.114	0.107	0.215	3.030	8.250	1.301	0.253
40	0.110	0.104	0.214	2.887	8.522	1.326	0.245
45	0.108	0.102	0.217	2.818	9.214	1.362	0.243
50	0.107	0.102	0.226	2.826	10.431	1.409	0.246
55	0.109	0.105	0.241	2.921	12.379	1.469	0.256
60	0.112	0.109	0.263	3.115	15.418	1.543	0.274
65	0.117	0.116	0.295	3.430	20.184	1.633	0.302

Pollutant Name: Carbon Dioxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	698.759	894.008	1257.167	2281.613	2239.353	221.949	887.464
15	548.038	701.244	970.586	1933.108	2089.108	190.641	700.065
20	446.119	570.895	782.014	1691.262	1997.626	168.677	573.763
25	376.917	482.389	656.690	1593.062	1940.771	153.744	490.772
30	330.519	423.049	574.056	1517.997	1905.351	144.413	434.970
35	300.817	385.061	521.859	1461.538	1884.037	139.888	399.040
40	284.160	363.757	492.965	1421.206	1872.818	139.874	378.642
45	278.597	356.643	483.651	1395.781	1869.721	144.543	371.476
50	283.495	362.907	492.765	1384.936	1874.217	154.579	376.808
55	299.411	383.263	521.477	1389.146	1887.076	171.331	395.328
60	328.205	420.089	573.544	1409.825	1910.581	197.096	429.286
65	373.403	477.895	656.177	1449.747	1949.226	235.648	482.960

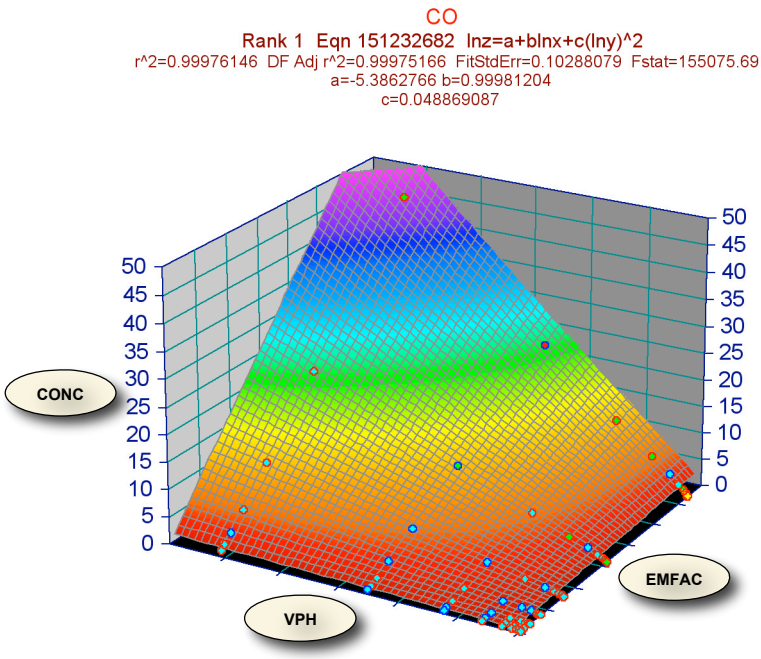
Pollutant Name: Sulfur Dioxide Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.007	0.009	0.012	0.022	0.021	0.003	0.009
15	0.005	0.007	0.009	0.018	0.020	0.002	0.007
20	0.004	0.005	0.008	0.016	0.019	0.002	0.006
25	0.004	0.005	0.006	0.015	0.019	0.002	0.005
30	0.003	0.004	0.006	0.015	0.018	0.002	0.004
35	0.003	0.004	0.005	0.014	0.018	0.002	0.004
40	0.003	0.004	0.005	0.014	0.018	0.002	0.004
45	0.003	0.003	0.005	0.013	0.018	0.002	0.004
50	0.003	0.003	0.005	0.013	0.018	0.002	0.004
55	0.003	0.004	0.005	0.013	0.018	0.002	0.004
60	0.003	0.004	0.006	0.013	0.018	0.003	0.004
65	0.004	0.005	0.006	0.014	0.019	0.003	0.005

Pollutant Name: PM10 Temperature: 50F Relative Humidity: 40%

Speed MPH	LDA	LDT	MDT	HDT	UBUS	MCY	ALL
10	0.039	0.085	0.093	0.229	0.358	0.024	0.068
15	0.026	0.058	0.064	0.193	0.268	0.019	0.048
20	0.019	0.042	0.046	0.166	0.208	0.017	0.035
25	0.014	0.032	0.035	0.150	0.167	0.015	0.028
30	0.012	0.025	0.028	0.141	0.139	0.014	0.023
35	0.010	0.021	0.024	0.138	0.120	0.014	0.020
40	0.009	0.019	0.021	0.141	0.107	0.014	0.019
45	0.008	0.018	0.020	0.148	0.099	0.016	0.018
50	0.008	0.018	0.019	0.160	0.095	0.018	0.018
55	0.008	0.019	0.020	0.176	0.094	0.021	0.020
60	0.009	0.020	0.022	0.197	0.097	0.026	0.022
65	0.011	0.024	0.025	0.222	0.103	0.034	0.025

CALINE4 SOLUTION SPACE RESULTS – SCENARIO CO

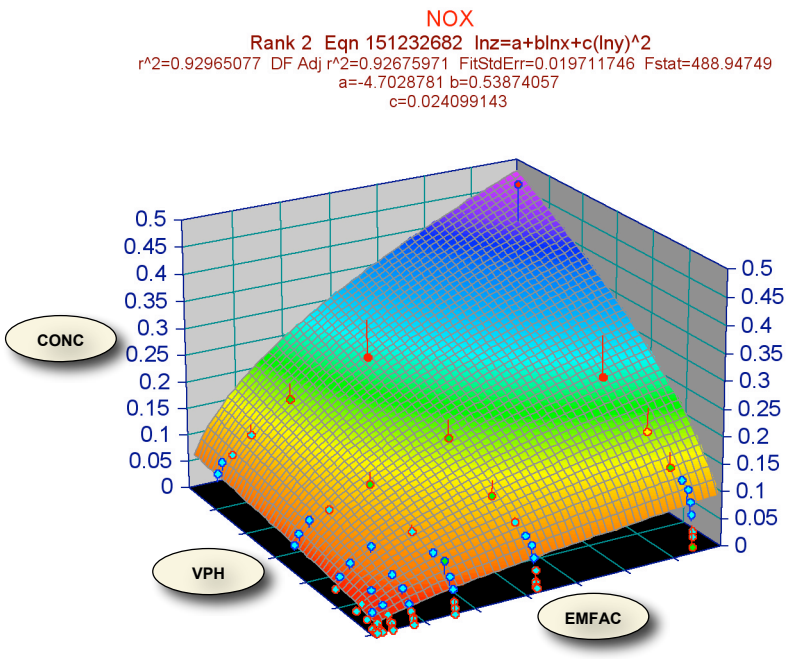


Rank 1 Eqn 151232682 $lnz=a+blnx+c(lny)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9997614637	0.9997516609	0.102880788	155075.68815

Parm	Value	Std Error	t-value	95.00% Confidence Limits		P>|t|
a	-5.38627658	0.022750405	-236.75519	-5.43160775	-5.34094541	0.00000
b	0.999812043	0.003657036	273.3940571	0.992525238	1.007098847	0.00000
c	0.048869087	0.000171868	284.3402911	0.048526632	0.049211542	0.00000

CALINE4 SOLUTION SPACE RESULTS – SCENARIO NO_X

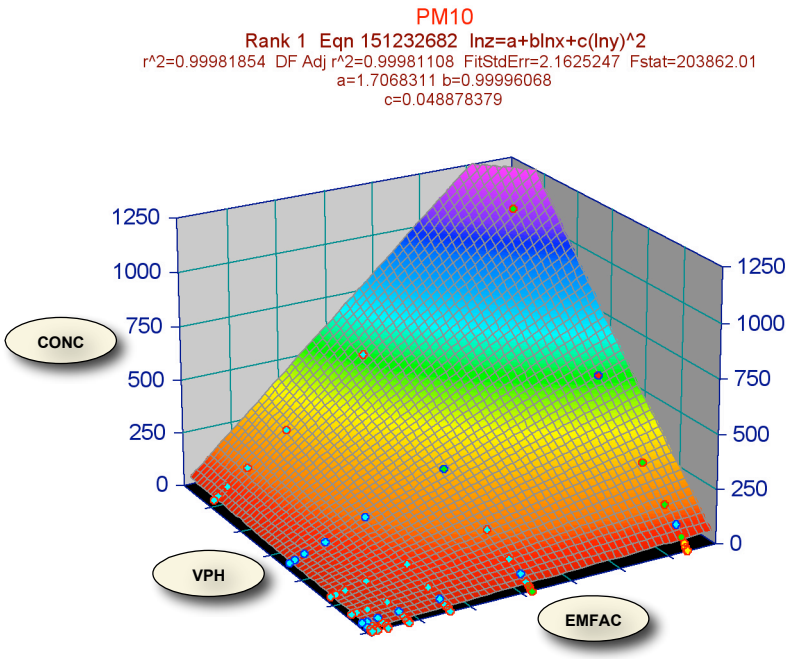


Rank 1 Eqn 151232653 $lnz=a+bx^{0.5}+c(lny)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9311638335	0.9283349499	0.0194986151	500.50814223

Parm	Value	Std Error	t-value	95.00% Confidence Limits		P>|t|
a	-5.48793064	0.131941715	-41.593598	-5.75083025	-5.22503104	0.00000
b	0.756396215	0.037072879	20.40295328	0.682526891	0.830265538	0.00000
c	0.023350423	0.001103789	21.15477893	0.021151074	0.025549771	0.00000

CALINE4 SOLUTION SPACE RESULTS – SCENARIO PM_{10}



Rank 1 Eqn 151232682 $lnz=a+blnx+c(lny)^2$

r^2 Coef Det	DF Adj r^2	Fit Std Err	F-value
0.9998185376	0.9998110803	2.1625247335	203862.00724

Parm	Value	Std Error	t-value	95.00% Confidence Limits		P>|t|
a	1.706831053	0.01706339	100.0288368	1.672831506	1.7408306	0.00000
b	0.999960683	0.003187502	313.7129842	0.993609447	1.006311919	0.00000
c	0.048878379	0.000149717	326.4708691	0.048580061	0.049176698	0.00000

INDEX OF IMPORTANT TERMS