Appendix G

AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

One Paseo

Air Quality and Greenhouse Gas Technical Report

March 2012

Prepared for:

Kilroy Realty Corporation
and City of San Diego
Development Services Department

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard, Suite 200
La Mesa, CA 91942

Air Quality and Greenhouse Gas Technical Report

One Paseo

Project No. 193036

Prepared By:

HELIX Environmental Planning, Inc.
7578 El Cajon Blvd., Suite 200
La Mesa, CA 91942

Prepared for:

Kilroy Realty
and
City of San Diego
Development Services Department

March 2012

AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT FOR THE ONE PASEO PROJECT

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT.)

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACM	asbestos-containing matierals
ADT	average daily traffic
AEP	Association of Environmental Professionals
ASCI	Asbestos Standards for the Construction Industry
BAU	business as usual
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CAFE	Corporate Average Fuel Economy
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFC	chlorofluoricarbons
City	City of San Diego
CIWMB	California Integrated Waste Management Board
CH_4	methane
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
cy	cubic yards
DPM	diesel particulate matter
du	dwelling unit
EPA	U.S. Environmental Protection Agency
EPIC	Energy Policy Initiative Center
F	Fahrenheit
FHWA	Federal Highway Administration
g/L	gallons per liter
GHG	greenhouse gas
gla	gross leasable area
gpm	gallons per minute
GVWR	gross weight vehicle rating
GWP	global warming potential

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

HAP	hazardous air pollutants
HFCs	hydrofluorocarbons
HI	hazard index
hp	horsepower
H_2S	hydrogen sulfide
HVLP	High-Volume, Low-Pressure
ICLEI	International Council on Local Environment Initiatives
IPCC	Intergovernmental Panel on Climate Change
lbs/day	pounds per day
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
LOS	level of service
MCAS	Marine Corp Air Station
MMT	million metric tons
MPOs	Metropolitan Planning Organizations
MSAT	mobile source air toxics
MWh	megawatt-hour
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standard for Hazardous Air Pollutants
NLEV	natural low emission vehicle
NO	nitrogen oxide
NO_2	nitrogen dioxide
NO_x	oxides of nitrogen
NOA	naturally occurring asbestos
NSHP	New Solar Home Partnership
O_3	ozone
OAL	Office of Administrative Law
OEHHA	Office of Environmental Health Hazard Assessment
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
Pb	lead
PFCs	perfluorocarbons
$PM_{2.5}$	particulate matter of less than 2.5 microns in size
PM_{10}	particulate matter of less than 10 microns in size
ppb	parts per billion
ppm	parts per million
Protocol	California Climate Action Registry General Reporting Protocol
PUC	Public Utilities Commission
PVC	polyvinyl chloride

LIST OF ACRONYMS AND ABBREVIATIONS (cont.)

RAQS	Regional Air Quality Strategy
REL	reference exposure level
RFG	reformulated gasoline
ROG	reactive organic compounds
RPS	Renewable Portfolio Standards
RTAC	Regional Targets Advisory Committee
SANDAG	San Diego Association of Governments
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDAB	San Diego Air Basin
SDAPCD	San Diego Air Pollution Control District
SDCGHGI	San Diego County Greenhouse Gas Inventory
sf	square feet
SF_6	hexafluoride
SIP	State Implementation Plan
SO_2	sulfur dioxide
TAC	toxic air contaminants
tpy	tons per year
TRU	transportation refrigeration units
UNFCCC	United Nations Framework Convention on Climate Change
VMT	vehicle miles traveled
VOC	volatile organic compounds

1.0 INTRODUCTION

This report presents an assessment of potential air pollutant and climate change impacts associated with the One Paseo (Proposed Project). The Proposed Project entails the phased construction of a maximum 1,857,440 gross-square foot mixed-use development on a 23.6-acre graded and vacant site located in the suburbanized area of the Carmel Valley community of the City of San Diego (City). The proposed mixed-use Project consists of approximately 220,000 gross square feet (sf) of commercial retail, approximately 50,000 gross sf of cinema, approximately 535,600 gross sf of corporate office, approximately 21,840 gross sf of professional office, approximately 100,000 gross sf consisting of a 150-room hotel, and approximately 930,000 gross sf consisting of 608 multi-family residential units. The potential gross leasable area (gla) of the Project includes approximately 270,000 sf of commercial retail and approximately 536,000 sf of commercial office. The Project also would include public space areas, internal roadways, landscaping, hardscape treatments, and utility improvements to support these uses.

For the purposes of phasing, the Project has been divided into five blocks surrounding a central Main Street. Blocks D and E would be constructed in Phase 1, Block A is anticipated to be constructed in Phase 2, and Blocks B and C are anticipated to be developed in Phase 3. Proposed land uses and Project features in each Block are summarized in Tables 1 and 2.

A horizon year of 2030 is expected to be the Project's full buildout. The air quality and climate change evaluation addresses the potential for air emissions during construction and after full buildout of the Project.

Table 1
DEVELOPMENT SUMMARY

Phase/Block	**Commercial Retail[1] (sf)**		**Commercial Office[3] (sf)**		**Hotel (Rooms)**	**Residential (MF Units)**	**Total[1]**
	Retail	**Cinema[2]**	**Corporate Office**	**Professional Office[4]**			
Phase 1							
Block D	61,190	---	270,000	21,000	---	---	352,190
Block E	39,460	---	245,000	---	---	---	284.460
Phase 1 Total	*100,650*	---	*515,000*	*21,000*	---	---	*636,650*

Table 1 (cont.)
DEVELOPMENT SUMMARY

Phase/Block	**Commercial Retail[1] (sf)**		**Commercial Office[3] (sf)**		**Hotel (Rooms)**	**Residential (MF Units)**	**Total[1]**
	Retail	**Cinema[2]**	**Corporate Office**	**Professional Office[4]**			
Phase 2							
Block A	65,610	---	---	---	---	194	65,610 + 194 MF units
Phase 2 Total	*65,610*	---	---	---		*194*	*65,610 + 194 MF units*
Phase 3							
Block B	38,940	---	---	---	150	181	38,940 + 150 hotel rooms + 181 MF units
Block C	14,800	---	---	---		233	14,800 + 233 MF units
Block D	---	50,000	---	---	---		50,000
Phase 3 Total	*53,740*	*50,000*	---	---	---	*414*	*103,740 + 418 MF units*
Total[1]	**220,000**	**50,000**	**515,000**	**21,000**	**150**	**608**	**806,000 + 150 hotel rooms + 608 MF units**

MF = multi-family

[1] As it relates to retail, all areas are considered gross leasable because all retail space may be leasable.

[2] Cinema consists of up to 10 screens.

[3] Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.

[4] Professional Office (located on Main Street).

Table 2
GROSS FLOOR AREA SUMMARY[1]

Commercial Retail[2] (sf)		Commercial Office (sf)		Hotel (sf)	Residential (sf)	Total
Retail	Cinema[3]	Corporate Office	Professional Office[4]			
220,000	50,000	535,600	21,840	100,000	930,000	1,857,440

[1] Gross Floor Area calculations per Land Development Code.
[2] Gross square feet
[3] Cinema of up to 10 screens.
[4] Professional Office (located on Main Street).

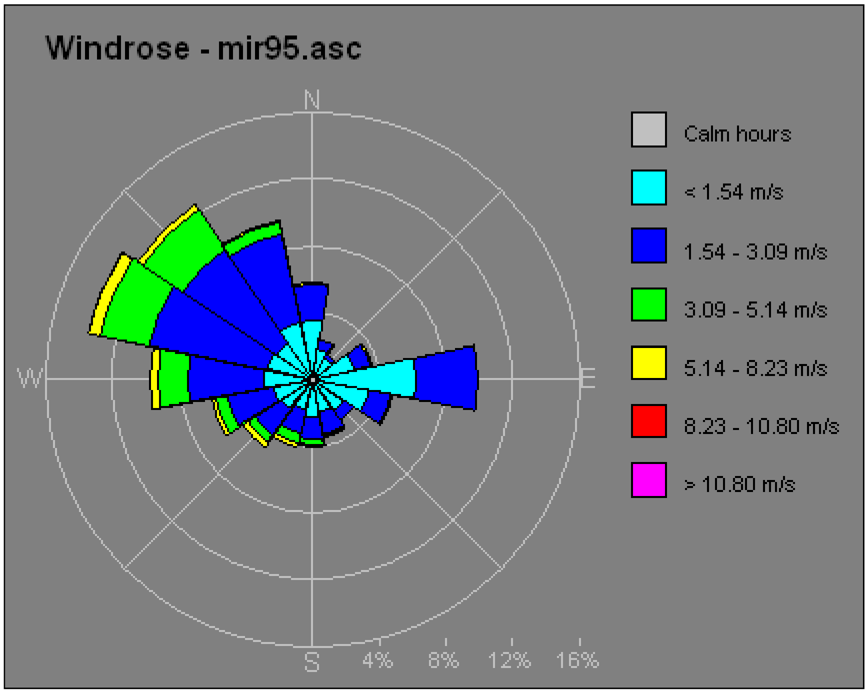
2.0 EXISTING CONDITIONS

2.1 CLIMATE AND METEOROLOGY

The climate in southern California, including the San Diego Air Basin (SDAB), is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity. Precipitation is limited to a few storms during the winter season. The climate of San Diego County is characterized by hot, dry summers and mild, wet winters.

Figure 1 presents a wind rose from the Marine Corp Air Station (MCAS) Miramar meteorological monitoring station that presents general meteorological trends in the Project area. MCAS Miramar is the closest meteorological monitoring station to the Project site. Wind monitoring data recorded at the MCAS Miramar station indicates that the predominant wind direction in the vicinity of Proposed Project is from the west. Average wind speed in the vicinity is approximately 5.8 miles per hour. The annual average temperature in the Project area is approximately 50 degrees Fahrenheit (ºF) during the winter and approximately 75ºF during the summer. Total precipitation in the Project areas averages approximately 13 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center 2010).

Figure 1. Wind Rose – MCAS Miramar Monitoring Station



The atmospheric conditions of the SDAB contribute to the region's air quality problems. Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light, daytime winds, predominately from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions (SDAPCD 2008a).

High air pollution levels in coastal communities of San Diego often occur when polluted air from the South Coast Air Basin, particularly Los Angeles, travels southwest over the ocean at night, and is brought onshore into San Diego by the sea breeze during the day. Smog transported from the Los Angeles area is a key factor on more than 50 percent of the days San Diego exceeds clean air standards. Ozone (O_3) and precursor emissions are transported to San Diego during relatively mild Santa Ana weather conditions. However, during strong Santa Ana weather conditions, pollutants are pushed far out to sea and miss San Diego. When smog is blown in from the South Coast Air Basin at ground level, the highest O_3 concentrations are measured at coastal and near-coastal monitoring stations. When the transported smog is elevated, coastal sites may be passed over, and the transported ozone is measured further inland and on the mountain slopes.

Current Climate Change Effects

Many researchers studying California's climate believe that changes in the earth's climate have already affected California, and will continue to do so in the future. Projected future climate change may affect California in a variety of ways. Public health may suffer due to greater temperature extremes and more frequent extreme weather events, increases in transmission of infectious disease, and increases in air pollution. Agriculture is especially vulnerable to altered temperature and rainfall patterns and related pest problems. Forest ecosystems would face increased fire hazards and would be more susceptible to pests and diseases. The Sierra snowpack that functions as the state's largest reservoir could shrink by a third by the year 2060, and to half its historic size by the year 2090. Runoff that fills reservoirs is expected to start in midwinter, not spring, and rain falling on snow is expected to trigger more flooding. The California coast is likely to face a rise in sea level that could threaten the shorelines. Sea-level rise and storm surges could lead to flooding of low-lying property, loss of coastal wetlands, erosion of cliffs and beaches, saltwater contamination of drinking water, and damage to roads, causeways, and bridges.

2.2 AIR POLLUTANTS OF CONCERN

2.2.1 Criteria Pollutants

Federal and state laws regulate the air pollutants emitted into the ambient air by stationary and mobile sources. These regulated air pollutants are known as "criteria pollutants" and are categorized as primary and secondary pollutants. Primary air pollutants are those that are emitted directly from sources. CO, reactive organic gases (ROG), nitrogen oxides (NO_X), sulfur dioxide (SO_2), and most inhalable particulate matter (P, $PM_{2.5}$) including lead (Pb) and fugitive dust; are primary air pollutants. Of these CO, SO_2, PM_{10}, and $PM_{2.5}$ are criteria pollutants. ROG and NO_X are criteria pollutant precursors and go on to form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone and NO_2 are the principal secondary pollutants.

2.2.2 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant environmental health issue in California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Act (42 USC Sec. 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through the California Air Resources Board (CARB), is authorized to identify a substance as a TAC if it determines the substance is an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

Cancer Risk

One of the primary health risks of concern due to exposure to TACs is the risk of contracting cancer. The carcinogenic potential of TACs is a particular public health concern because it is currently believed by many scientists that there is no “safe” level of exposure to carcinogens, that is, any exposure to a carcinogen poses some risk of causing cancer. Health statistics show that one in four people will contract cancer over their lifetime, or 250,000 in a million, from all causes, including diet, genetic factors, and lifestyle choices.

Noncancer Health Risks

Unlike carcinogens, for most noncarcinogens it is believed that there is a threshold level of exposure to the compound below which it will not pose a health risk. The CalEPA and California Office of Environmental Health Hazard Assessment (OEHHA) have developed reference exposure levels (RELs) for noncarcinogenic TACs that are health-conservative estimates of the levels of exposure at or below which health effects are not expected. The noncancer health risk due to exposure to a TAC is assessed by comparing the estimated level of exposure to the REL. The comparison is expressed as the ratio of the estimated exposure level to the REL, called the hazard index (HI).

2.2.3 Greenhouse Gas

Parts of the Earth’s atmosphere act as an insulating blanket of just the right thickness, trapping sufficient solar energy to keep the global average temperature in a suitable range. The “blanket” is a collection of atmospheric gases called greenhouse gases (GHGs) based on the idea that the gases also “trap” heat like the glass wall of a greenhouse. These gases, mainly water vapor, carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), ozone, and chlorofluorocarbons (CFCs), all act effective global insulators, reflecting back to earth heat and infrared radiation. Human activities such as producing electricity with fossil fuels and driving vehicles have contributed to the elevated concentration of these gases in the atmosphere. This is turn, is causing the Earth’s temperature to rise. A warmer Earth may lead to changes in rainfall patterns, much smaller polar ice caps, a rise in sea level, and a wide range of impacts on plants, wildlife, and humans. Without these natural GHGs, Earth’s temperature would be about 61º Fahrenheit cooler (CalEPA 2006).

2.3 CRITERIA POLLUTANTS

2.3.1 Background

Criteria pollutants are defined by state and federal law as a risk to the health and welfare of the general public. The following specific descriptions of health effects for each of these air pollutants associated with Project construction and operations are based on U.S. Environmental Protection Agency (EPA) (2007) and CARB (2009a).

Ozone

O_3 is considered a photochemical oxidant, which is a chemical that is formed when VOCs and NOx, both by-products of fuel combustion, react in the presence of ultraviolet light. O_3 is considered a respiratory irritant and prolonged exposure can reduce lung function, aggravate asthma and increase susceptibility to respiratory infections. Children and those with existing respiratory diseases are at greatest risk from exposure to O_3.

Carbon Monoxide

CO is a product of fuel combustion, and the main source of CO in the SDAB is from motor vehicle exhaust. CO is an odorless, colorless gas. CO affects red blood cells in the body by binding to hemoglobin and reducing the amount of oxygen that can be carried to the body's organs and tissues. CO can cause health effects to those with cardiovascular disease, and can also affect mental alertness and vision.

Nitrogen Dioxide

NO_2 is also a by-product of fuel combustion, and is formed both directly as a product of combustion and in the atmosphere through the reaction of nitrogen oxide (NO) with oxygen. NO_2 is a respiratory irritant and may affect those with existing respiratory illness, including asthma. NO_2 can also increase the risk of respiratory illness.

Respirable Particulate Matter and Fine Particulate Matter

Respirable particulate matter, or PM_{10}, refers to particulate matter with an aerodynamic diameter of 10 microns or less. Fine particulate matter, or $PM_{2.5}$, refers to particulate matter with an aerodynamic diameter of 2.5 microns or less. Particulate matter in these size ranges have been determined to have the potential to lodge in the lungs and contribute to respiratory problems. PM_{10} and $PM_{2.5}$ arise from a variety of sources, including road dust, diesel exhaust, fuel combustion, tire and brake wear, construction operations and windblown dust. PM_{10} and $PM_{2.5}$ can increase susceptibility to respiratory infections and can aggravate existing respiratory diseases such as asthma and chronic bronchitis. $PM_{2.5}$ is considered to have the potential to lodge deeper in the lungs.

Sulfur Dioxide

SO_2 is a colorless, reactive gas that is produced from the burning of sulfur-containing fuels such as coal and oil, and by other industrial processes. Generally, the highest concentrations of SO_2 are found near large industrial sources. SO_2 is a respiratory irritant that can cause narrowing of the airways leading to wheezing and shortness of breath. Long-term exposure to SO_2 can cause respiratory illness and aggravate existing cardiovascular disease.

Lead

Pb in the atmosphere occurs as particulate matter. Pb has historically been emitted from vehicles combusting leaded gasoline, as well as from industrial sources. With the phase-out of leaded gasoline, large manufacturing facilities are the sources of the largest amounts of lead emissions. Pb has the potential to cause gastrointestinal, central nervous system, kidney and blood diseases upon prolonged exposure. Pb is also classified as a probable human carcinogen.

Sulfates

Sulfates are the fully oxidized ionic form of sulfur. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO_2 during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The CARB's sulfates standard is designed to prevent aggravation of respiratory symptoms. Effects of sulfate exposure at levels above the standard include a decrease in ventilatory function, aggravation of asthmatic symptoms and an increased risk of cardio-pulmonary disease. Sulfates are particularly effective in degrading visibility, and due to fact that they are usually acidic, can harm ecosystems and damage materials and property.

Hydrogen Sulfide

Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation. Breathing H_2S at levels above the standard would result in exposure to a very disagreeable odor. In 1984, a CARB committee concluded that the ambient standard for H_2S is adequate to protect public health and to significantly reduce odor annoyance.

Vinyl Chloride

Vinyl chloride, a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants and hazardous waste sites, due to microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air causes central nervous system effects, such as dizziness, drowsiness and headaches. Long-term exposure to vinyl chloride through inhalation and oral exposure causes liver damage. Cancer is a major concern from exposure to vinyl chloride via inhalation. Vinyl chloride exposure has been shown to increase the risk of angiosarcoma, a rare form of liver cancer, in humans.

2.3.2 Air Quality Regulations (Criteria Pollutants)

Air quality is defined by ambient air concentrations of specific pollutants identified by the EPA to be of concern with respect to health and welfare of the general public. The EPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments.

The CAA required the EPA to establish National Ambient Air Quality Standards (NAAQS), which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the EPA established both primary and secondary standards for several pollutants (called "criteria" pollutants). Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere. Areas that do not meet the NAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

The EPA established NAAQS for the protection of human health and the public welfare for six criteria pollutants: CO, SO_2, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Pb. Ozone is not emitted directly, but is formed from a complex set of reactions involving O_3 precursors such as NO_x and ROC. Regulations relating to O_3, therefore, address emissions of NO_x and ROC.

The federal CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. The CARB has established the more stringent California Ambient Air Quality Standards (CAAQS) for the six criteria pollutants through the California CAA of 1988, and also has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant.

On April 15, 2004, the San Diego Air Basin was classified as a basic nonattainment area for the 8-hour NAAQS for O_3. The SDAB is an attainment area for the NAAQS for all other criteria pollutants. The SDAB currently falls under a national "maintenance plan" for CO, following a 1998 redesignation as a CO attainment area (SDAPCD 2008b). The SDAB is currently classified as a nonattainment area under the CAAQS for O_3 (serious nonattainment), PM_{10}, and $PM_{2.5}$ (CARB 2008b).

The CARB is the state regulatory agency with authority to enforce regulations to achieve and maintain the NAAQS and CAAQS. The CARB is responsible for the development, adoption and enforcement of the state's motor vehicle emissions program, as well as the adoption of the CAAQS. The CARB also reviews operations and programs of the local air districts, and requires each air district that is considered a nonattainment area to develop its own strategy for achieving the NAAQS and CAAQS. Each local air district has the primary responsibility for the development and implementation of rules and regulations that reflect the strategy to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement of air pollution regulations. In San Diego County, the attainment planning process is embodied in a regional air quality management plan developed jointly by the San Diego Air Pollution Control District (SDAPCD) and the San Diego Association of Governments (SANDAG).

Table 3, Ambient Air Quality Standards, presents a summary of the ambient air quality standards adopted by the federal and California CAAs.

Table 3
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	-	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		-		
Fine Particulate Matter ($PM_{2.5}$)	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/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/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (470 µg/m^3)		0.100 ppm (see footnote 8)	None	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	-	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	-	Spectro-photometry (Pararo-saniline Method
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	-	
	3-Hour	-		-	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		-	-	-
Lead	30-Day Average	1.5 µg/m^3	Atomic Absorption	-	-	-
	Calendar Quarter	-		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
	Rolling 3-Month Average	-		0.15 µg/m^3		

Table 3 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Visibility Reducing Particles	8-Hour	Extinction coefficient of 0.23 kilometers – visibility of ten miles or more (0.7 – 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		
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m3 is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

[8] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

[9] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[10] National lead standard, rolling 3-month average: final rule signed October 15, 2008.

ppm = parts per million; µg/m^3 = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter
Source: CARB 2/16/2010

San Diego County Regional Air Quality Strategy

In San Diego, the SDAPCD is responsible for attainment planning required by the California Clean Air Act. The SDAPCD develops the Regional Air Quality Strategy (RAQS) to address strategies within the SDAB to attain and maintain air quality standards. The RAQS was initially adopted by the San Diego County Air Pollution Control Board on June 30, 1992, and amended on March 2, 1993, in response to CARB comments. SADAPCD further updated the RAQS revisions on December 12, 1995; June 17, 1998; August 8, 2001; July 28, 2004, and April 22, 2009. The local RAQS, in combination with those from all other California nonattainment areas with serious (or worse) air quality problems, is submitted to the CARB, which develops the California State Implementation Plan (SIP). The SIP was adopted by the CARB in 1994, and forwarded to the EPA for their approval. After considerable analysis and debate, particularly regarding airsheds with the worst smog problems, the EPA approved the SIP in mid-1996. Since that date, SIP revisions have been developed and approved for nonattainment areas throughout the state; however, the SIP for the SDAB was not required to be updated, as it has achieved its attainment goals in a timely manner.

On April 15, 2004, EPA issued the initial designations for the 8-hour ozone standard, and the SDAB is classified as “basic” nonattainment. Basic is the least severe of the six degrees of ozone nonattainment. SDAPCD submitted an air quality attainment plan to EPA in May 2007; the plan demonstrated how the 8-hour ozone standard will be attained by 2009. However, the federal 8-hour ozone standard was exceeded in 2009. In addition, on January 6, 2010, the EPA proposed to strengthen the 8-hour ozone standard to a level within the range of 0.060-0.070 parts per million (ppm) (EPA 2010a). Final EPA approval of its nonattainment designation is not expected until 2012 for the San Diego Air Basin that the SDAPCD will be required to develop an updated *Eight-Hour Ozone Attainment Plan for San Diego County*, which calls for the SDAB to attain the new federal 8-hour O_3 NAAQS. On January 25, 2010, the EPA set a new 1-hour NO_2 standard at the level of 100 parts per billion (ppb). The EPA will designate areas as attaining or not attaining the new NO_2 standard by January 2012 (EPA 2010b).

2.3.3 Existing Criteria Pollutant Levels

The SDAPCD operates a network of ambient air monitoring stations throughout San Diego County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the CAAQS and the NAAQS. The nearest ambient monitoring stations to the Proposed Project site are the Del Mar-Mira Costa College station, which is located approximately two miles north of the Project site (O_3 only), the Kearny Mesa station, which is located approximately seven miles to the east-southeast of the Project site (PM_{10}, NO_2, and CO), and the downtown San Diego station, which is located approximately 17 miles south of the site (the closest monitoring station that measures CO and SO_2). Because of its coastal location similar to the Project site, the Del Mar monitoring station ozone levels are considered most representative of the site. Also, because of its proximity to the site and location in an area that is less congested than downtown San Diego, the Kearny Mesa monitoring station concentrations for all other pollutants except SO_2 are considered most representative of the Project site. The downtown San Diego monitoring station is the nearest location to the Project site where SO_2 concentrations are monitored. Ambient concentrations of pollutants from these stations between 2007 and 2010 are presented in Table 4, Ambient Background Concentrations.

The 1-hour state O_3 standard was exceeded one time in 2007, two times in 2008, two times in 2009, and none in 2010 at the Del Mar-Mira Costa College monitoring station during the time period from 2007 through 2010. The 8-hour state O_3 standard was exceeded four times in 2007, eleven times in 2008, three times in 2009, and two times in 2010. The 8-hour federal O_3 standard was exceeded three times in 2007 and 2008, one time in 2009, and none in 2010. The data from the monitoring stations indicate that air quality is in attainment of all other federal standards. The Kearny Mesa monitoring station measured at least one exceedance of the annual federal PM_{10} standard during the period from 2007 to 2010; however, one exceedance per year is exempted under NAAQS. The Kearny Mesa monitoring station measured one exceedance of the daily California PM_{10} standard in 2007, during the period of the October 2007 wildfire season. The data from the monitoring stations indicate that air quality is in attainment of all other state standards. Because of the location of the monitoring station in downtown San Diego, where traffic congestion is prevalent, the station has higher concentrations of CO than are measured elsewhere in San Diego County and the background data are not likely to be representative of background ambient CO concentrations in the Project vicinity. Use of downtown San Diego background data therefore provides a conservative estimate of background CO concentrations.

Table 4
AMBIENT BACKGROUND CONCENTRATIONS
SAN DIEGO MONITORING STATIONS

Air Pollutant	2007	2008	2009	2010
Ozone – Del Mar/Mira Costa College				
Max 1 Hour (ppm)	0.110	0.117	0.097	0.085
Days > CAAQS (0.09 ppm)	1	2	2	0
Max 8 Hour (ppm)	0.079	0.078	0.084	0.072
Days > NAAQS (0.075 ppm)	3	3	1	0
Days > CAAQS (0.070 ppm)	4	11	3	2
Particulate Matter (PM$_{10}$) – Kearny Mesa Overland Avenue				
Max Daily (µg/m^3)	65.0	41.0	50.0	33.0
Days > NAAQS (150 µg/m^3)	0	0	0	0
Days > CAAQS (50 µg/m^3)	1	0	0	0
Annual Max (µg/m^3)	22	24	25	25
Days > NAAQS (20 µg/m^3)	1	1	1	1
Particulate Matter (PM$_{2.5}$) – Kearny Mesa Overland Avenue				
Max Daily (µg/m^3)	30.6	27.2	25.1	18.7
Days > NAAQS (35 µg/m^3)	0	0	0	0
Annual Max (µg/m^3)	10.44	11.75	10.5	8.7
Days > NAAQS (12 µg/m^3)	0	0	0	0
Days > CAAQS (15 µg/m^3)	0	0	0	0
Nitrogen Dioxide (NO$_2$) – Kearny Mesa Overland Avenue				
Max 1 Hour (ppm)	0.087	0.077	0.060	0.073
Days > CAAQS (0.18 ppm)	0	0	0	0
Annual Max (ppm)	0.016	0.011	0.014	0.013
Days > NAAQS (0.053 ppm)	0	0	0	0
Days > CAAQS (0.030 ppm)	0	0	0	0

Table 4 (cont.)
AMBIENT BACKGROUND CONCENTRATIONS
SAN DIEGO MONITORING STATIONS

Air Pollutant	2007	2008	2009	2010
Carbon Monoxide (CO) – Downtown San Diego				
Max 8 Hour (ppm) Days > NAAQS (9 ppm) Days > CAAQS (9.0 ppm)	5.18 0 0	2.24 0 0	2.77 0 0	2.17 0 0
Max 1 Hour (ppm) Days > NAAQS (35 ppm) Days > CAAQS (20 ppm)	8.7 0 0	2.4 0 0	2.5 0 0	2.3 0 0
Sulfur Dioxide (SO_2) – Downtown San Diego				
Max Daily Measurement (ppm) Days > NAAQS (0.14 ppm) Days > NAAQS (0.04 ppm)	0.006 0 0	0.007 0 0	0.006 0 0	0.002 0 0

Abbreviations: > = exceed, ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter, CAAQS = California Ambient Air Quality Standard, NAAQS = National Ambient Air Quality, Standard Mean = Annual Arithmetic Mean

* No Data / Insufficient Data

Source: www.arb.ca.gov (all pollutants except 1-hour CO and annual maximum for PM_{10}, $PM_{2.5}$, and NO_2)

www.epa.gov/air/data/monvals.html (1-hour CO, and annual maximums for PM_{10}, $PM_{2.5}$, and NO_2)

2.4 TOXIC AIR CONTAMINANTS

2.4.1 Toxic Air Contaminants Background

In addition to the criteria pollutants for which there are NAAQS and CAAQS, EPA and CARB also regulates a list of air toxics. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics identified by the EPA. MSATs are emitted from vehicle and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as by-products. Metal air toxics result from engine wear or from impurities in oil or gasoline.

The EPA is the lead federal agency for administering the Federal CAA and has certain responsibilities regarding the health effects of MSATs. The EPA issued a Final Rule on Controlling Emissions of Hazardous Air Pollutants from Mobile Sources 66 FR 17229 (March 29, 2001). In the 2001 rulemaking, six of the 21 MSATs were identified by EPA as priority MSATS: *acetaldehyde, benzene, formaldehyde, diesel exhaust, acrolein,* and *1,3-butadiene* (66 FR 17230).

In its rule, EPA also examined the impacts of existing and newly promulgated mobile source control programs, including its reformulated gasoline (RFG) program, its national low emission vehicle (NLEV) standards, its Tier 2 motor vehicle emissions standards and gasoline sulfur control requirements, and its proposed heavy duty engine and vehicle standards and on-highway diesel fuel sulfur control requirements. Between 2000 and 2020, the Federal Highway Administration (FHWA) projects that even with a 64 percent increase in vehicle miles traveled (VMT), these programs will reduce on-highway emissions of benzene, formaldehyde, 1,3-butadiene, and acetaldehyde by 57 to 65 percent, and will reduce on-highway diesel particulate matter (DPM) emissions by 87 percent.

In 1998, California identified DPM as a TAC based on its potential to cause cancer and other adverse health impacts. In addition to DPM, emissions from diesel-fueled engines include over 40 other cancer causing substances. In September 2000, the CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled engines and vehicles. The goal of the Plan is to reduce diesel PM emissions and the associated health risk by 75 percent in 2010 and 85 percent or more by 2020 (from the base year 2000 level).

2.4.2 Toxic Air Contaminants Regulations

California Diesel Regulations

The CARB is responsible for developing statewide programs and strategies to reduce the emission of smog-forming pollutants and toxics by diesel-fueled mobile sources. The identification of DPM as a TAC in 1998 led the CARB to adopt the *Diesel Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-fueled Engines and Vehicles* in 2000 (CARB 2000). Included below are some of the resultant regulations that may be pertinent to this Project.

California Diesel Fuel Regulations

This rule sets sulfur limitations for diesel fuel sold in California for use in on-road and off-road motor vehicles (CARB 2005). Under this rule, diesel fuel used in motor vehicles had been limited to 500 ppm sulfur since 1993. The sulfur limit was reduced to 15 ppm beginning in September 1, 2006. (A federal diesel rule similarly limits sulfur content nationwide for on-road vehicles to 15 ppm, which began on October 15, 2006).

California In-Use Off-Road Diesel Vehicle Regulation

On July 26, 2007, the CARB adopted a regulation to reduce DPM and NO_X emissions from in-use (existing) off-road heavy-duty diesel vehicles in California (CARB 2007c). Any person, business, or government agency that owns or operates diesel-powered off-road vehicles in California (except for agricultural or personal use, or for use at ports or intermodal rail yards) with engines with maximum power of 25 horsepower or greater are subject to the regulation. The regulation applies to vehicles commonly used in construction, mining, rental, airport ground support, and other industries. Out-of-state companies doing business in California are also subject to the regulation.

California On-Road Heavy-Duty Diesel Vehicles (In-Use) Regulation

In 2008, the CARB approved a regulation (CARB 2007c) to reduce emissions from existing trucks and buses operating in California significantly. Affected vehicles include on-road, heavy-duty, diesel-fueled vehicles with a gross vehicle weight rating (GVWR) greater than 14,000 pounds; yard trucks with off-road certified engines; and diesel-fueled shuttle vehicles of any GVWR. Out-of-state trucks and buses that operate in California are also subject to the regulation. Approximately 170,000 businesses in nearly all industry sectors in California, and almost a million vehicles that operate on California roads each year, are affected. Some common industry sectors that operate vehicles subject to the regulation include for-hire transportation; construction, manufacturing, retail, and wholesale trade; vehicle leasing and rental; bus lines; and agriculture.

Naturally Occurring Asbestos

In July 2002, the CARB approved an Air Toxic Control Measure for construction, grading, quarrying and surface mining operations to minimize naturally occurring asbestos emissions (CARB 2007d). The regulation requires application of best management practices to control fugitive dust in areas known to have naturally occurring asbestos (NOA), and it requires notification to the local air district prior to commencement of ground-disturbing activities.

National Emission Standard for Hazardous Air Pollutants 40 CFR 61

The National Emission Standard for Hazardous Air Pollutants (NESHAP) is an asbestos standard that protects the general public from asbestos exposure due to demolition or demolition activities. The NESHAP requires surveys for suspect materials, notification of intent to renovate or demolish or remove regulated asbestos-containing materials (ACMs) before demolition or demolition activities, and proper management of asbestos-containing waste.

Asbestos Standard for the Construction Industry

The Federal Occupational Safety and Health Administration (OSHA) regulates asbestos as a worker health and safety issue through the Asbestos Standards for the Construction Industry (ASCI). EPA regulations concerning the identification, handling, management, and abatement of ACMs is found in the Asbestos Hazard Emergency Response Act (AHERA) and the NESHAP.

The ASCI (29 CFR 1926.1101; 8 California Code of Regulations 1529), administered by OHSA and Cal-OSHA, regulates asbestos exposure in the workplace for abatement workers and contractors. The ASCI:

- Specifies how workers and the public are to be protected during removal;
- Provides medical surveillance requirements for workers;
- Provided detailed requirements for how asbestos is to be removed; and,
- Defines training requirements for abatement personnel.

Building materials containing at least 1% asbestos are considered ACMs and should be managed according to OSHA requirements.

2.4.3 Existing Toxic Air Contaminants Levels

Ambient levels of selected TACs are measured by the CARB at several locations in southern California. The closest TAC monitoring stations to San Diego are in El Cajon and Chula Vista, approximately 30 miles east and 45 miles south of the Proposed Project site, respectively. Both of these stations may potentially contain higher, as well as different, TAC concentrations than those near the Proposed Project because of the distance from the Project site and the myriad of land uses in those areas. Because DPM is not collected at the two monitoring stations, background concentrations for this TAC were obtained from the 2009 California Almanac of Emissions and Air Quality (CARB 2009). The annual average concentration for DPM in the SDAB is 1.4 micrograms per cubic meters ($\mu g/m^3$) with an estimated cancer risk of 420 chances in one million.

2.5 GREENHOUSE GASES

2.5.1 Greenhouse Gas Background

As previously mentioned in Section 2.2.3, global climate change refers to changes in average climatic conditions on Earth, as a whole, including temperature, wind patterns, precipitation and storms. Global temperatures are moderated by naturally occurring atmospheric gases that include water vapor, CO_2, CH_4 and N_2O. In addition to the naturally occurring gases, man-made compounds also act as GHGs; common examples include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6). These compounds are the result of a number of activities including vehicular use, energy consumption/production, manufacturing and cattle farming. These man-made compounds increase the natural concentration of GHGs in the atmosphere and are commonly believed to result in a phenomenon referred to as “global warming.” A summary of the types of GHGs is provided below.

Types of Greenhouse Gases

Water vapor is the most abundant and variable GHG in the atmosphere. It is not considered a pollutant; it maintains a climate necessary for life. The main source of water vapor is evaporation from the oceans (approximately 85 percent). Other sources include evaporation from other water bodies, sublimation (change from solid to gas) from ice and snow, and transpiration from plant leaves (Association of Environmental Professionals [AEP] 2007).

CO_2 is an odorless, colorless GHG. Natural sources include decomposition of dead organic matter; respiration of bacteria, plants, animals, and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human-caused) sources of carbon dioxide include burning fuels, such as coal, oil, natural gas, and wood. CO_2 concentrations are currently around 379 ppm of the total earth’s atmosphere; some scientists say that concentrations may increase to 1,130 CO_2 equivalent (CO_2e) ppm by 2100 as a direct result of anthropogenic sources

(IPCC 2007). Some predict that this will result in an average global temperature rise of at least 7.2^{o}Fahrenheit (United Nations Intergovernmental Panel on Climate Change [IPCC] 2007).

GHGs have varying global warming potential (GWP). The GWP is the potential of a gas or aerosol to trap heat in the atmosphere, and is defined as the "cumulative radiative forcing effect of a gas over a specified time horizon resulting from the emission of a unit mass of gas relative to a reference gas" (EPA 2006). The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 21, and N_2O, which has a GWP of 310.

CH_4 is a gas and is the main component of natural gas used in homes. A natural source of methane is from the decay of organic matter. Geological deposits known as natural gas fields contain methane, which is extracted for fuel. Other sources are from decay of organic material in landfills, fermentation of manure, and cattle digestion.

N_2O, also known as laughing gas, is a colorless gas. N_2O is produced by microbial processes in soil and water, including reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (nylon production, nitric acid production) also emit N_2O. It is used in rocket engines, as an aerosol spray propellant, and in race cars. During combustion, NO_x (NO_x is a generic term for mono-nitrogen oxides, NO and NO_2) is produced as a criteria pollutant and is not the same as N_2O. Very small quantities of N_2O may be formed during fuel combustion by nitrogen and oxygen (American Petroleum Institute [API] 2004).

HFCs are gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. CFCs are nontoxic, nonflammable, insoluble, and chemically nonreactive in the troposphere (the level of air at Earth's surface). CFCs were first synthesized in 1928 for use as refrigerants, aerosol propellants and cleaning solvents. They destroy stratospheric ozone; therefore, their production was stopped as required by the Montreal Protocol. Today, HFCs replaces the CFCs. HFC compounds have a GWP of between 140 and 11,700, with the lower end being for HFC-152a and the higher end being for HFC-23.

SF_6 is an inorganic, odorless, colorless, nontoxic, nonflammable gas. It has the highest GWP of any gas – 23,900. SF_6 is used for insulation in electric power transmission and distribution equipment, in the magnesium industry, in semiconductor manufacturing, and as a tracer gas for leak detection.

Ozone is a GHG; however, unlike the other GHGs, ozone in the troposphere (i.e., the lowest portion of the earth's atmosphere, up to 12 miles from the surface of the earth) is relatively short-lived and therefore is not global in nature. According to the CARB, it is difficult to make an accurate determination of the contribution of ozone precursors (NO_x and Volatile Organic Compounds, also called VOCs) to global warming (CARB 2007a).

2.5.2 Greenhouse Gas Regulations

International Greenhouse Gas Treaties

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC) (signed on March 21, 1994). The Kyoto Protocol is a treaty made under the UNFCCC, and was the first international agreement to regulate GHG emissions. It has been estimated that if the commitments outlined in the Kyoto Protocol are met, global GHG emissions could be reduced by an estimated 5 percent from 1990 levels during the first commitment period of 2008-2012. Notably, while the United States is a signatory to the Kyoto Protocol, Congress has not ratified the Protocol and the United States is not bound by the Protocol's commitments.

In December 2009, the United Nations representatives met in Copenhagen to attempt to develop a framework for addressing global climate change issues in the future. The Copenhagen Accord was not, however, ratified with a binding accord, and no further measures were adopted at that meeting.

Federal Greenhouse Gas Regulations

In the past, the EPA has not regulated GHGs under the Clean Air Act. However, the U.S. Supreme Court ruled on April 2, 2007, in *Massachusetts v. U.S. Environmental Protection Agency* that CO_2 is an air pollutant, as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. After a thorough examination of the scientific evidence and careful consideration of public comments, the EPA announced on December 7, 2009 that GHGs threaten the public health and welfare of the American people.

> *Endangerment Finding*: The EPA Administrator finds that the current and projected concentrations of the six key well-mixed GHG – CO_2, CH_4, N_2O, HFC, PFC, and SF_6 – in the atmosphere threaten the public health and welfare of current and future generations.
>
> *Cause or Contribute Finding*: The EPA Administrator finds that the combined emissions of these well-mixed GHG from motor vehicles and motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's proposed GHG emissions standards for light duty vehicles, which were jointly proposed by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

Mandatory Reporting Rule of Greenhouse Gases

On January 1, 2010, the EPA started, for the first time, requiring large emitters of heat-trapping emissions to begin collecting GHG data under a new reporting system. This new program will cover approximately 85 percent of the nation's GHG emissions and apply to roughly 10,000 facilities. Fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons or more of CO_2e per year will be required to report GHG emissions data to EPA annually. This reporting threshold is equivalent to about the annual GHG emissions from 4,600 passenger vehicles. Vehicle and engine manufacturers outside of the light-duty sector have begun phasing in GHG reporting with vehicle/engine model year 2011.

Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, Present Obama announced plans to increase CAFE standards to require light duty vehicles to meet an average fuel economy of 35.5 miles per gallons by 2016.

California Greenhouse Gas Regulations

California Code of Regulations, Title 24, Part 6

Although not originally intended to reduce GHG emissions, California Code of Regulations Title 24 Part 6: California's Energy Efficiency Standards for Residential and Nonresidential Buildings were first established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The GHG emission inventory was based on Title 24 standards as of October 2005; however, Title 24 has been updated as of 2008 and standards were phased in as of January 2010. The latest Title 24 standards are anticipated to increase energy efficiency by 15%, thereby reducing GHG emissions from energy use by 15%. Energy efficient buildings require less electricity, natural gas, and other fuels. Electricity production from fossil fuels and on-site fuel combustion (typically for water heating) results in GHG emissions. Therefore, increased energy efficiency results in decreased GHG emissions.

Assembly Bill 75

AB 75 was passed in 1999, and mandates state agencies to develop and implement an integrated waste management plan to reduce GHG emissions related to solid waste disposal. In addition, the bill mandates that community service districts providing solid waste services report the disposal and diversion information to the appropriate city, county, or regional jurisdiction. Since 2004, the bill requires diversion of at least 50 percent of the solid waste from landfills and transformation facilities, and submission to the California Integrated Waste Management Board (CIWMB) of an annual report describing the diversion rates.

Executive Order D-16-00

This executive order (EO) signed by Governor Gray Davis on August 2, 2000, established a state sustainable building goal. The sustainable building goal is to site, design, deconstruct, construct, renovate, operate, and maintain state buildings that are models of energy, water, and materials efficiency; while providing healthy, productive and comfortable indoor environments and long term benefits to Californians." As with the California Energy Code, reductions in energy usage provided by sustainable building design would result in reduced GHG emissions.

Senate Bill (SB) 1771

SB 1771 (Sher) enacted on September 30, 2000 requires the Secretary of the Resources Agency to establish a nonprofit public benefit corporation, to be known as the "California Climate Action Registry," for the purpose of administering a voluntary GHG emission registry. The State Energy Resources Conservation and Development Commission (commonly called the California Energy Commission [CEC]) was required to develop metrics for use by the Registry and to compile the State's inventory of GHG emissions by January 1, 2002, and to update the inventory every five years thereafter.

Assembly Bill 1493 – Vehicular Emissions of Greenhouse Gases

In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles, light duty trucks (and other vehicles determined to be vehicles whose primary use is noncommercial personal transportation) in the state, manufactured in year 2009 and all subsequent model years. In setting these standards, the CARB considered cost effectiveness, technological feasibility, and economic impacts. The CARB adopted the standards in September 2004. When fully phased in, the near-term (years 2009 to 2012) standards would result in a reduction of approximately 22 percent in GHG emissions compared to the emissions from the year 2002 fleet, while the midterm (years 2013 to 2016) standards would result in a reduction of approximately 30 percent. Some currently used technologies that achieve GHG reductions include small engines with superchargers, continuously variable transmissions, and hybrid electric drives. To set its own GHG emissions limits on motor vehicles, California needed to receive a waiver from the EPA. The EPA approved the waiver in June 2009.

Executive Order S-7-04

The EO signed by Governor Schwarzenegger on April 20, 2004, designated California's 21 interstate freeways as the California Hydrogen Highway Network" and direct the CalEPA and all other relevant state agencies to:

> …plan and build a network of hydrogen fueling stations along these roadways and in urban centers that they connect, so that by 2010, every Californian will have access to hydrogen fuel, with a significant and increasing percentage from clean, renewable sources.

The EO also directs the CalEPA, in concert with State Legislature, and in consultation with the CEC and other relevant state and local agencies to develop California Hydrogen Economy Blueprint Plan “for the rapid transition to a hydrogen economy in California” by January 1, 2005. The Plan is to be updated biannually. Recommendations to the Governor and State Legislature are to include among others:

> Promoting environmental benefits (including global climate change) and economic development opportunities resulting from increased utilization of hydrogen for stationary and mobile applications; policy strategies to ensure hydrogen generation results in the lowest possible emissions of GHG and other air pollutants.

Executive Order S-3-05

EO S-3-05, signed by Governor Schwarzenegger on June 1, 2005, calls for a reduction in GHG emissions to year 1990 levels by year 2020, and for an 80 percent reduction in GHG emissions by year 2050. EO S-3-05 also calls for the CalEPA to prepare biennial science reports on the potential impact of continued global warming on certain sectors of the California economy. The first of these reports, “Scenarios of Climate Change in California: An Overview,” was published in February 2006.

The report uses a range of emissions scenarios developed by the IPCC to project a series of potential warming ranges (i.e., temperature increases) that may occur in California during the 21st century: lower warming range (3.0-5.5°F); medium warming range (5.5-8.0°F); and higher warming range (8.0-10.5°F). The report then presents analysis of future climate in California under each warming range.

As shown above, each emissions scenario would result in substantial temperature increases for California. According to the report, substantial temperature increases would result in a variety of impacts to the people, economy and environment of California associated with a projected increase in extreme conditions; the severity of the impacts would depend upon actual future emissions of GHGs and associated warming. Under the report’s emissions scenarios, the impacts of global warming in California are anticipated to include, but are not limited to, public health, biology, rising sea levels, hydrology and water quality, and water supply.

Senate Bill 1505

Largely in response to EO S-7-04, SB 1505 (Lowenthal), passed by the legislature and signed by the governor on September 30, 2006, requires the CARB to adopt regulations by July 1, 2008 that ensure the production and use of hydrogen for transportation purposes contributes to the reduction of GHG emissions, criteria pollutants, and TACs.

Assembly Bill 32 – Global Warming Solution Act of 2006

In the fall of 2006, Governor Schwarzenegger signed California Assembly Bill (AB) 32, the global warming bill, into law. AB 32 required that by January 1, 2008, the CARB determine what the statewide GHG emissions level was in 1990, and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020. Key AB 32 milestones are as follows:

- June 20, 2007 – Identification of “discrete early action GHG emission reduction measures.”
- January 1, 2008 – Identification of the year 1990 baseline GHG emission levels and approval of a statewide limit equivalent to that level. Adoption of reporting and verification requirements concerning GHG emissions.
- January 1, 2009 – Adoption of a scoping plan for achieving GHG emission reductions.
- January 1, 2010 – Adoption and enforcement of regulations to implement the “discrete” actions.
- January 1, 2011 – Adoption of GHG emission limits and reduction measures by regulations.
- January 1, 2012 – GHG emission limits and reduction measures adopted in 2011 become enforceable.

Since the passage of AB 32, ARB published Proposed *Early Actions to Mitigate Climate Change in California*. There are no early action measures specific to new land use development projects included in the list of 36 measures identified for ARB to pursue during previous calendar years 2007, 2008, 2009, and 2010. Also, this publication indicated that the issue of GHG emissions in CEQA and General Plans was being deferred for later action, so the publication did not discuss any early action measures generally related to CEQA or to land use decisions. The ARB adopted its Scoping Plan in December 2008, which provided estimates of the year 1990 GHG emissions level, and identified sectors for the reduction of GHG emissions.

The CARB has established the year 1990 level of GHG emissions at 427 million metric tons (MMT) of CO_2e emissions (CARB 2007a). The CARB estimates that a reduction of 173 MMT net CO_2e emissions below business as usual (BAU) would be required by year 2020 to meet the year 1990 levels. This amounts to a 15 percent reduction from today’s levels, and a 28.3 percent reduction from projected BAU levels in year 2020.

According to the CEC, transportation accounts for approximately 41 percent of California’s year 2004 GHG emissions (CEC 2006). Growth in California has resulted in VMT by California residents increasing three-fold during the period from 1975 to 2004. To reduce the use of carbon-based fuels, the Governor of California signed EO S-01-07, calling for a 10 percent reduction in carbon intensity in fuels by year 2020. In addition, President Bush signed new fuel efficiency standards (CAFE standards) that would increase vehicle mileage to 35 miles per gallon by year 2020. All of these measures are designed to reduce emissions of GHGs.

Senate Bill 1368

In 2006, the California Legislature passed SB 1368, which requires the Public Utilities Commission (PUC) to develop and adopt a “GHGs emission performance standard” by February 1, 2007, for the private electric utilities under its regulation. The PUC adopted an interim standard on January 25, 2007, but has formally requested a delay for the local publicly owned electric utilities under its regulation. These standards apply to all long-term financial commitments entered into by electric utilities (California PUC 2006). The CEC was required to adopt a consistent standard by June 30, 2007. However, this date was missed, and the CEC will address the concerns of the Office of Administrative Law (OAL) and resubmit the rulemaking as soon as possible. The rulemaking then must be approved by the OAL before it can take effect.

In the meantime, the PUC and CEC adopted a preferred loading order to meet goals for satisfying the state's growing demand for electricity while reducing GHG emissions. The preferred loading order places top priority on first increasing energy efficiency and demand response, then providing new generation from renewable and distributed generation resources, and, lastly, providing clean fossil-fueled generation and infrastructure improvements.

Executive Order S-01-07

This EO signed by Governor Schwarzenegger on January 18, 2007, directs that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. It orders that a Low Carbon Fuel Standard (LCFS) for transportation fuels be established for California and direct CARB to determine if a LCFS can be adopted as a discrete early action measure pursuant to AB 32. The CARB approved the LCFS as a discrete early action item with a regulation adopted and implemented in 2010. EO S-01-07 also instruct sthe CalEPA to coordinate activities between the University of California, the CEC, and other state agencies to develop and propose a draft compliance schedule to meet the 2020 target.

Senate Bill 97 – CEQA: Greenhouse Gas Emissions

In August 2007, Governor Schwarzenegger signed into law SB 97 – CEQA: Greenhouse Gas Emissions, stating, "This bill advances a coordinated policy for reducing GHG emissions by directing the Office of Planning and Research (OPR) and the Resources Agency to develop CEQA guidelines on how state and local agencies should analyze, and when necessary, mitigate GHG emissions." Specifically, SB 97 requires OPR to prepare, develop, and transmit to the Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA, including but not limited to, effects associated with transportation or energy consumption. The Natural Resources Agency certified and adopted the guidelines on December 31, 2009. The Office of Administrative Law has adopted the guidelines and it became effective on March 18, 2010. The new CEQA guidelines provide the lead agency with broad discretion in determining significance thresholds and the methodology used in assessing the impacts of GHG emissions in the context of a particular project. This guidance is provided because the methodology for assessing GHG emission is expected to evolve over time. The OPR guidance also states that the lead agency can rely on qualitative or other performance based standards for estimating the significance of GHG emissions.

Senate Bill 375

Senate Bill (SB) 375 provides for a new planning process to coordinate land use planning and regional transportation plans and funding priorities in order to help California meet the GHG reduction goals established in AB 32. SB 375 requires regional transportation plans, developed by Metropolitan Planning Organizations (MPOs) relevant to the Proposed Project area to incorporate a Sustainable Communities Strategy (SCS) in their regional transportation plans that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined California Environmental Quality Act (CEQA) review for some infill projects such as transit oriented development. SB 375 will be implemented over the next several years.

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transportation, which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by Metropolitan Planning Organizations working in cooperation with Council of Governments. The scoping plan adopted by CARB in December of 2008 relies on the requirements of SB 375 to implement the carbon emissions reductions anticipated from land use decisions.

The San Diego Association of Governments (SANDAG) developed its first Regional Transportation Plan (RTP) subject to the provisions of SB 375, which requires that MPOs prepare a SCS as part of the RTP. The SCS must demonstrate how development patterns and the transportation network, policies, and programs can work together to achieve the GHG emission reduction targets for cars and light trucks that will be established by CARB, if there is a feasible way to do so. The SANDAG Board of Directors released the Draft 2050 RTP and its SCS for public review and comment at its April 22, 2011 meeting. The release of the Draft 2050 RTP began the public comment period which extended through June 30, 2011. The Draft 2050 RTP and its SCS were developed following more than two years of planning, technical development, outreach, and public input. The 2050 RTP was approved by the SANDAG Board of Directors on October 28, 2011.

Executive Order S-13-08

EO S-13-08, signed by Governor Schwarzenegger on November 14, 2008, enhance the state's management of climate impacts from sea level rise, increased temperatures, shifting precipitation and extreme weather events. One key benefit that the EO S-13-08 have facilitated California's first comprehensive climate adaptation strategy. This strategy will improve coordination within state government and adapt the way work so that better planning can more effectively address climate impacts to human health, the environment, the state's water supply and the economy. Another benefit from the EO S-13-08 includes providing consistency and clarity to state agencies on how to address sea level rise in current planning efforts, reducing time and resources unnecessarily spent on developing different policies using different scientific information.

Executive Order S-14-08.

On November 17, 2008, Governor Schwarzenegger issued EO S-14-08. This EO focuses on the contribution of renewable energy sources to meet the electrical needs of California while reducing the GHG emissions from the electrical sector. The governor’s order requires that all retail suppliers of electricity in California serve 33% of their load with renewable energy by 2020. Furthermore, the order directs state agencies to take appropriate actions to facilitate reaching this target. The Resources Agency, through collaboration with the CEC and Department of Fish and Game, is directed to lead this effort. Pursuant to a Memorandum of Understanding between the CEC and Department of Fish and Game creating the Renewable

Energy Action Team, these agencies will create a "one-stop" process for permitting renewable energy power plants.

Executive Order S-21-09.

EO S-21-09 was issued by the Governor on September 15, 2009. EO S-21-09 requires that the CARB, under its AB 32 authority, adopt a regulation by July 31, 2010 that sets a 33 percent renewable energy target as established in EO S-14-08. Under EO S-21-09, the CARB will work with the PUC and CEC to encourage the creation and use of renewable energy sources, and will regulate all California utilities. The CARB will also consult with the Independent System Operator and other load balancing authorities on the impacts on reliability, renewable integration requirements, and interactions with wholesale power markets in carrying out the provisions of the EO. The order requires the CARB to establish highest priority for those resources that provide the greatest environmental benefits with the least environmental costs and impacts on public health. On September 23, 2010, CARB adopted regulations to implement a "Renewable Electricity Standard," which would achieve the goal of the EO with the following intermediate and final goals: 20% for 2012–2014; 24% for 2015–2017; 28% for 2018–2019; 33% for 2020 and beyond. Under the regulation, wind; solar; geothermal; small hydroelectric; biomass; ocean wave, thermal, and tidal; landfill and digester gas; and biodiesel would be considered sources of renewable energy. The regulation would apply to investor-owned utilities and public (municipal) utilities.

California Greenhouse Gas Programs and Plans

California Energy Commission: New Solar Homes Partnership

The New Solar Homes Partnership (NSHP) is a component of the California Solar Initiative and has a goal to produce 400 megawatts of solar electricity on approximately 160,000 homes by year 2017. To qualify for the program, a new home must achieve energy efficiency levels greater than the requirements of the year 2005 Building Title 24 Standards. The builder can choose to comply with either of two tiers of energy efficiency measures: Tier I requires a 15 percent reduction from Title 24 Standards; or Tier II, which requires a 35 percent reduction overall and 40 percent in the building's space cooling (air conditioning) energy compared to Title 24 (CEC 2007). In addition, all appliances must have an Energy Star rating, which indicates that the appliance is consistent with the international standard for energy efficient consumer products.

California Air Resources Board: Interim Significance Thresholds

In October 2008, the CARB released interim guidance on significance thresholds for industrial, commercial and residential projects (CARB 2008d). The draft proposal for residential and commercial projects states that a project would not be significant if it complies with a previously approved plan that addresses GHG emissions, or meets an energy use performance standard defined as CEC's Tier II Energy Efficiency goal (specified as 35 percent above Title 24 requirements) along with "as yet to be defined" performance standards for water, waste and transportation or is below an "as yet to be developed" threshold for GHG emissions tons per year (tpy). As such, CARB did not establish a threshold of significance.

California Air Resources Board: Scoping Plan

On December 11, 2008, the CARB adopted the Scoping Plan (CARB 2008c) as directed by AB 32. The Scoping Plan proposes a set of actions designed to reduce overall GHG emissions in California to the levels required by AB 32. The measures in the Scoping Plan approved by the Board will be in place by year 2012, with further implementation details and regulations to be developed, followed by the rulemaking process to meet the 2012 deadline. Measures applicable to development projects include the following:

- Maximum energy efficiency building and appliance standards, including more stringent building codes and appliance efficiency standards, and solar water heating;
- Use of renewable sources for electricity generation, such as photovoltaic solar associated with the Million Solar Roofs program;
- Regional transportation targets, including integration of development patterns and the transportation network to reduce vehicle travel, as identified in SB 375; and
- Green Building strategy, including siting near transit or mixed use areas; zero-net-energy buildings; "beyond-code" building efficiency requirements; and the use of the CEC's Tier II Energy Efficiency goal.

Relative to transportation, the Scoping Plan includes nine measures or recommended actions. One of these is measure T-3, Regional Transportation-Related Greenhouse Gas Targets, which relies on SB 375 implementation to reduce GHG emissions from passenger vehicles through reducing vehicle miles traveled. The other measures are related to vehicle GHG, fuel and efficiency measures and would be implemented statewide rather than on a project-by-project basis.

California Natural Resources Agency: CEQA Guidelines

The Natural Resources Agency adopted CEQA Guidelines Amendments on December 30, 2009, and transmitted them to the Office of Administrative Law on December 31, 2009. On February 16, 2010, the Office of Administrative law completed its review and filed the amendments with the secretary of state. The amendments became effective on March 18, 2010. The amended guidelines establish several new CEQA requirements concerning the analysis of GHGs, including the following:

- Requiring a lead agency to "make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project" (Section 15064(a)).
- Providing a lead agency with the discretion to determine whether to use quantitative or qualitative analysis or performance standards to determine the significance of greenhouse gas emissions resulting from a particular project (Section 15064.4(a)).
- Requiring a lead agency to consider the following factors when assessing the significant impacts from greenhouse gas emissions on the environment.

- The extent to which the project may increase or reduce greenhouse gas emissions as compared to the existing environmental setting.
- Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
- The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of greenhouse gas emissions. (Section 15064.4(b))
- Allowing lead agencies to consider feasible means of mitigating the significant effects of greenhouse gas emissions, including reductions in emissions through the implementation of project features or off-site measures, including offsets that are not otherwise required (Section 15126.4(c)).

The amended guidelines also establish two new guidance questions regarding GHG emissions in the Environmental Checklist set forth in CEQA Guidelines Appendix G:

- Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
- Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The adopted amendments do not establish a GHG emission threshold, and instead allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions

Local Policies and Regulations: San Diego Association of Governments

San Diego Association of Governments: Climate Action Strategy

The SANDAG Climate Action Strategy serves as a guide to help policymakers address climate change as they make decisions to meet the needs of our growing population, maintain and enhance our quality of life, and promote economic stability (SANDAG 2010). The purpose of the strategy is to identify land use, transportation, and other related policy measures that could reduce GHG emissions from passenger cars and light-duty trucks as part of the development of the Sustainable Communities Strategy for the 2050 Regional Transportation Plan in compliance with SB 375. Other policy measures are also identified for buildings and energy use, protecting transportation and energy infrastructures from climate impacts, and to help SANDAG and other local agencies reduce GHG from their operations.

Local Policies and Regulations: City of San Diego

United States Mayors Climate Protection Agreement

The City of San Diego participates in the Cool Cities Program. The Cool Cities Program, in partnership with the International Council on Local Environment Initiatives (ICLEI), adopted a voluntary program that strives to meet sustainable goals by reducing GHGs and increasing energy efficiency. The participating cities make commitments to stop global warming by signing the United States Mayors Climate Protection Agreement, and also strive to meet the 2030 Challenge (refer to next section for a detailed description of this program). The Cool Cities Program also encourages its members to gradually achieve and complete five milestones: (1) establish a Cool Cities campaign, (2) engage the community to participate, (3) sign the United States Mayors Climate Protection Agreement, (4) take initial solution steps (initiation of early implementation actions), and (5) ultimately perform a global warming audit by adopting milestone, "Advanced Smart Energy Solutions." The City of San Diego is currently at Milestone 3 of the possible five milestones by being a signatory to United States Mayors Climate Protection Agreement.

The United States Mayors Climate Protection Agreement attempts to enact policies and programs that would reduce global warming pollution levels to 7 percent below year 1990 levels by year 2012, including efforts for conservation, CH_4 recovery for energy generation, waste to energy, wind and solar energy, fuel cells, efficient motor vehicles, and biofuels. The Agreement also aims to meet or exceed Kyoto Protocol targets for reducing global warming pollution by taking the following 12 actions in participating communities:

1. Inventory global warming emissions in City operations and in the community, set reduction targets, and create an action plan.
2. Adopt and enforce land use policies that reduce sprawl; preserve open space; and create compact, walkable urban communities.
3. Promote transportation options such as bicycle trails, commute-trip reduction programs, incentives for carpooling, and public transit.
4. Increase the use of clean, alternative energy by, for example, investing in "green tags," advocating for the development of renewable energy resources, recovering landfill methane for energy production, and supporting the use of waste-to-energy technology.
5. Make energy efficiency a priority through building code improvements, retrofitting city facilities with energy efficient lighting, and urging employees to conserve energy and save money.
6. Purchase only Energy Star rated equipment and appliances for City use.
7. Practice and promote sustainable building practices using the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program or a similar system.
8. Increase the average fuel efficiency of municipal fleet vehicles; reduce the number of vehicles; launch an employee education program including anti-idling messages; convert diesel vehicles to bio-diesel.
9. Evaluate opportunities to increase pump efficiency in water and wastewater systems; recover wastewater treatment methane for energy production.
10. Increase recycling rates in city operations and in the community.
11. Maintain healthy urban forests; promote tree planting to increase shading and to absorb CO_2.
12. Help educate the public, schools, other jurisdictions, professional associations, business, and industry about reducing global warming pollution.

City of San Diego Sustainable Development Programs and Policies

The City of San Diego has taken a leadership position in fighting against climate change since 2002. The first action taken by the City was the establishment of the Sustainable Community Programs and indicators followed by adoption of a comprehensive strategy regarding energy efficiency and GHG reduction.

City of San Diego Adopted Sustainable Community Program Indicators

The City of San Diego adopted a Sustainable Communities Program in year 2002 and, in year 2004, published and adopted numerous sustainable indicators that would measure and, ultimately, improve the following areas of concern: traffic congestion, beach and bay clean up, sustainable and safe communities, adoption of "living wages," pursuit of energy independence, adoption of water conservation measures, energy efficiency, and adoption of species conservation plans. These indicators are being implemented by the Climate Protection Action Plan 2005.

City of San Diego: The Climate Protection Action Plan 2005

In 2005, the City of San Diego adopted its cornerstone document for climate change, the Climate Protection Action Plan 2005. The plan is loosely based on the criteria set by the Cities for Climate Protection Campaign prepared by the ICLEI. The City, a partner of ICLEI, prepared and implemented the program that aims to achieve sustainable development goals. The Plan addresses both GHG from emissions from communities (commercial, industrial, residential, and other) and from operation of the City as a government. The Plan consists of five major elements and depicts their relationship to climate change: Transportation, Energy, Waste, Urban Heat Island Effect, and Environmentally Preferable Purchasing. The Plan discusses local impacts of climate change, actions adopted by the City to achieve sustainable development goals, emissions baselines and forecasts, emissions reduction strategies, and mitigation measures. The City initiated implementation of the GHG reduction strategies by conducting a baseline GHG emissions inventory and setting up a baseline year of 1990 (per the Kyoto Protocol). A 15 percent reduction target relative to the year 1990 baseline was set to be achieved by year 2010.

City of San Diego: 2010 Memo on Addressing Greenhouse Gas for CEQA Projects

The City of San Diego has established an interim screening threshold for GHG emission analysis. The City is using an annual generation rate of 900 metric tons of GHGs to determine when further GHG analysis is required, based on the guidance in the California Air Pollution Control Officers Association (CAPCOA) report "CEQA & Climate Change" (CAPCOA 2008).

2.5.3 Existing Greenhouse Gas Levels

Global, National, State and Local Levels

The IPCC constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. The Panel concluded that a stabilization of GHGs at 400 to 450 ppm CO_2e concentration is required to keep global mean warming below 3.6º F (2º Celsius), which is assumed to be necessary to avoid dangerous climate change (AEP 2007).

In year 2004, total GHG emissions worldwide were estimated at 20,135 MMT of CO_2e emissions (United Nations Framework Convention on Climate Change 2006). The United States contributed the largest portion of GHG emissions at 35 percent of global emissions. In California, according to the CEC (2006), CO_2 accounts for approximately 84 percent of statewide GHG emissions, with CH_4 accounting for approximately 5.7 percent, and N_2O accounting for 6.8 percent. Other pollutants account for approximately 2.9 percent of GHG emissions in California. The transportation sector is the single largest category of California's GHG emissions, accounting for 41 percent of emissions statewide. CARB estimates that the year 1990 statewide CO_2e emissions level was 427 MMT (CARB 2007a). In year 2004, California produced 492 MMT of total CO_2 equivalent emissions. The total GHG emissions of the entire U.S. were 7,260 MMT of CO_2e emissions in 2005, of which 84 percent was CO_2 emission (EPA 2006). On a national level, approximately 33 percent of GHG emissions were associated with transportation and about 41 percent were associated with electricity generation.

According to the San Diego County GHG Inventory (SDCGHGI) that was prepared by the University of San Diego School of Law Energy Policy Initiative Center (EPIC) in 2008, San Diego County emitted 34 MMT of CO_2e emissions in 2006. The largest contributor of GHG in San Diego County was the on-road transportation category, which comprised 46 percent (16 MMT CO_2e) of the total amount. The second highest contributor was the electricity category, which contributed 9 MMT CO_2e, or 25 percent of the total. Together the on-road transportation and electricity categories comprised 71 percent of the total GHG emissions for the County. The remaining amount was contributed by natural gas consumption, civil aviation, industrial processes, off-road equipment, waste, agriculture, rail, water-borne navigation, and other fuels. By 2020, under the BAU scenario, regional GHG emissions are expected to be 43 MMT of CO_2e emissions.

Proposed Project Site

In its vacant state, the Project site is not a source of GHG emissions. Natural vegetation and soils temporarily store carbon as part of the terrestrial carbon cycle. Carbon is assimilated into plants as they grow, and then dispersed back into the environment when they die. Soil carbon accumulates from inputs of plants, roots, and other living components of the soil ecosystem (i.e., bacteria, worms, etc.). Soil carbon is lost through biological respiration, erosion, and other forms of disturbance.

2.5.4 Calculation Methodology

The Proposed Project could result in air quality and GHG emissions resulting from both construction and operational impacts. Construction impacts include short-term emissions associated with the construction of the Project. Operational impacts include long-term emissions associated with the traffic generated by the Project, as well as solid waste generation, water and energy consumption.

The equation below provides the basic calculation required to determine CO_2e from the total mass of a given GHG using the GWPs published by the IPCC.

Metric Tons of CO_2e = Metric Tons of GHG X GWP.

This method was used to evaluate GHG emissions during construction and operation of the Proposed Project. For this analysis, only CO_2, CH_4, and N_2O are considered due to the relatively large contribution of these gases in comparison to other GHGs produced during the Project construction and operation phase.

The air quality and GHG emission estimates were calculated using URBEMIS 2007. URBEMIS is a computer program that can be used to estimate emissions associated with land development projects in California such as residential neighborhoods, shopping centers, and office buildings; area sources such as gas appliances, wood stoves, fireplaces, and landscape maintenance equipment; and construction projects. URBEMIS, which stands for “Urban Emissions” is an air quality modeling program that estimates air pollution emissions in pounds per day (lbs/day) or tpy for various land uses, area sources, construction projects, and project operations. Several mitigation measures can also be specified to analyze the effects of mitigation on project emissions. It should be noted that the URBEMIS model is not able to quantify the GHG emission reduction effects of all mitigation measures. The URBEMIS 2007 model uses the CARB EMFAC2007 model for on-road vehicle emissions and the OFFROAD2007 model for off-road vehicle emissions. URBEMIS 2007 includes ROG, NOx, CO, SOx, PM_{10}, $PM_{2.5}$, and CO_2 emissions factors.

Emissions are classified as direct and indirect. Direct emissions are associated with the production of emissions at the site. These would include the combustion of natural gas in heaters or stoves, the combustion of fuel in engines or construction vehicles, and fugitive emissions from valves and connections, which include methane as a component. Indirect emissions include the emissions from vehicles (both gasoline and diesel) delivering materials and equipment to the Project site or the use of electricity. Electricity produces emissions because of the common use of fossil fuels for the generation of electricity, especially in Southern California. It should be noted that URBEMIS 2007 was developed with the Title 24 standards as of October 2005.

Indirect GHG emissions are also associated with water use, as electricity is required to pump and treat water that would be used at the Proposed Project. Case studies documented by the U.S. EPA demonstrate that water treatment plants, in combination with the California electricity usage and GHG emission rate, generate up to 1.2 tons of CO_2 per million gallons of water used, due to electricity use.

Indirect GHG emission associated with trash services, and other services that might visit the Proposed Project are accounted for in the URBEMIS calculations, which incorporate the vehicle travel of diesel trucks that would visit and service the Proposed Project.

CAPCOA acknowledged that there is currently not one model that is capable of estimating all of a project's direct and indirect GHG emissions (CAPCOA 2008). However, CAPCOA has determined that the URBEMIS model is the best available model designed to model emissions associated with development of urban land uses. URBEMIS attempts to summarize criteria air pollutants and CO_2 emissions that would occur during construction and operation of new development. URBEMIS is publicly available and already widely used by CEQA practitioners and air districts to evaluate criteria air pollutants emissions against air district-adopted significance thresholds.

CAPCOA noted that one of the shortfalls of URBEMIS is that the model does not contain emission factors for GHGs other than CO_2, except for CH_4 from mobile sources, which is converted to CO_2e. This is not a major problem since CO_2 is the most important GHG from land development projects. Although the other GHGs have a higher global warming potential, a metric used to normalize other GHGs to CO_2e, they are emitted in far fewer quantities. URBEMIS does not calculate other GHG emissions associated with off-site waste disposal, wastewater treatment, emissions associated with goods and services consumed by the residents and workers supported by a project. Nor does URBEMIS calculate GHGs associated with consumption of energy produced off-site. (For that matter, URBEMIS does not report criteria air pollutant emissions from these sources either).

CAPCOA also points out that URBEMIS does not fully account for interaction between land uses in its estimation of mobile source operational emissions. Vehicle trip rates defaults are derived from the Institute of Transportation Engineers trip generation manuals. However, URBEMIS does allow the user to overwrite the default trip rates and characteristics with more project-specific data from a traffic study prepared for a project. For this Project, the traffic study used the trip generation rates from the City of San Diego's Traffic Generation Manual. All trip rates data are widely used and are generally considered worst-case or conservative. URBEMIS does not reflect "internalization" of trips between land uses, or in other words, the concept that a residential trip and a commercial trip are quite possibly the same trip, and, thus, URBEMIS counts the trips separately. There are some internal correction settings that the modeler can select in URBEMIS to correct for "double counting"; however, a project-specific "double-counting correction" is often not available. As such, the report represents a conservative worst-case scenario for the Project's GHG emissions.

3.0 THRESHOLDS OF SIGNIFICANCE

3.1 CRITERIA POLLUTANTS

A potentially significant impact to air quality would occur if the Project causes one or more of the following:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors (i.e., day care centers, schools, retirement homes, and hospitals or medical patients in residential homes which could be impacted by air pollutants) to substantial pollutant concentrations, including air toxins such as diesel particulates;
- Create objectionable odors affecting a substantial number of people;

The City of San Diego's emission-specific thresholds were derived from the SDAPCD's Regulation II, Rule 20.2, Table 20.2, Air Quality Impact Analysis (AQIA) Trigger Levels (SDCAPCD 1998). These thresholds are applicable as a screening criterion for potential significance. The threshold for ROG is based on significance criteria from the City of San Diego (2007). The threshold for $PM_{2.5}$ is based on significance criteria from the South Coast Air Quality Management District (SCAQMD 2009). The emission thresholds are shown in Table 5.

Table 5
AIR QUALITY EMISSIONS THRESHOLDS

Pollutant	Pounds/hour	Pounds/day	Tons/year
Carbon Monoxide (CO)	100	550	100
Oxides of Nitrogen (NO_x)	25	250	40
Particulate Matter (PM_{10})	-	100	15
Oxides of Sulfur (SO_x)	25	250	40
Lead and Lead Compounds	-	3.2	0.6
Reactive Organic Gases (ROG)	-	137	15
Fine Particulate Matter ($PM_{2.5}$)	-	55	10

Sources: County of San Diego APCD 1998.
City of San Diego 2011a.
SCAQMD 2009.

In the event that emissions exceed these thresholds, mitigation measures will be required to reduce the Project impacts to less than significant.

3.2 TOXIC AIR CONTAMINANTS EMISSIONS

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as TACs or Hazardous Air Pollutants (HAPs). In San Diego County, APCD Regulation XII establishes acceptable risk levels and emission control requirements for new and modified facilities that may emit additional TACs. Under Rule 1210, emissions of TACs that result in a cancer risk of more than ten in one million, or a health hazard index of more than one are considered to have a significant impact.

With regard to evaluating whether a project would have a significant impact on sensitive receptors, air quality regulators typically define sensitive receptors as schools (preschool through 12th grade), hospitals, resident care facilities, day-care centers, or other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. Any project that has the potential to directly impact a sensitive receptor located within one mile and results in a health risk greater than ten in one million would cause a potentially significant impact.

The health risk assessment conducted for carcinogens is typically for a period of 70 years; however, due to the temporary construction duration of the Proposed Project, it is not meaningful to estimate quantitative carcinogenic health risks for this Project. In addition, no regulatory thresholds for adverse health risk effects due to acute (short-term) exposure to diesel particulate have been established.

3.3 OBJECTIONABLE ODORS

SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health or safety of any person. A project that proposes a use which would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of offsite receptors.

3.4 GREENHOUSE GASES

To date, there is no local, regional, state, or federal regulation establishing a threshold of significance to determine project-specific impacts of GHG emissions on global warming. The recently amended CEQA Guidelines now allow lead agencies to develop significance thresholds for GHG impacts. However, given the small levels of emissions generated by typical development in relationship to the total amount of GHG emissions discussed in Section 2.5.3, emissions from typical development projects would not constitute a direct, significant impact. On the other hand, given the magnitude of the impact of GHG emissions on the global climate, GHG emissions from new development could result in significant, cumulative impacts with respect to climate change.

In order to serve as a guide for determining when a project triggers the need for a GHG significance determination, the City of San Diego has established an interim screening threshold for GHG emission analysis. Based on guidance in the CAPCOA report "CEQA & Climate Change," dated January 2008, the City is using an annual generation rate of 900 metric tons of GHGs to determine when further GHG analysis is required.

The CAPCOA report references the 900 metric ton guideline as a conservative screening threshold for requiring further GHG analysis and mitigation. This emission level is based on the amount of vehicle trips, the typical energy and water use, and other factors associated with projects. Table 6 identifies project typical types and sizes that are expected to emit approximately 900 metric tons or more of GHGs.

Table 6
PROJECT TYPES THAT REQUIRE A GHG ANALYSIS AND MITIGATION

Project Type	Project Size that Generates Approximately 900 Metric Tons of GHGs per Year
Single-Family Residential	50 units
Apartments/Condominiums	70 units
General Commercial Office Space	35,000 square feet
Retail Space	11,000 square feet
Supermarket/Grocery Space	6,300 square feet

Note: For project types that do not fit the categories in this table, a determination on the need for a GHG analysis will be made on a case-by-case basis, based on whether the project could generate 900 metric tons or more of GHGs.

According to the CARB's Scoping Plan, AB 32's goal of reducing GHGs to year 1990 levels by year 2020 would amount to a 28.3-percent reduction in emissions below BAU levels, accounting for growth in the state of California. BAU condition is defined as the emissions that would have occurred in the absence of reductions mandated under AB 32 (based on 2005 Building Code standards)[1].

Based on this guidance from CEQA Guidelines, the City and CAPCOA, and CARB, if the Project would generate GHG emissions in excess of 900 MT per year, additional GHG analysis and mitigation/emissions reduction measures are required. A reduction of the Project's GHG emissions by at least 28.3 percent over that which would have been expected to occur in the BAU condition will result in a conclusion of no significant impact. Absent a reduction of GHG emissions of at least 28.3 percent, the impact is considered significant.

---

[1] 2005 Building Code standards are used because they were the adopted standards at the time AB 32 was adopted.

4.0 IMPACTS

This section evaluates potential impacts of the Proposed Project related to the generation of criteria pollutants; including CO, SO_2, NO_2, O_3, PM_{10}, $PM_{2.5}$, and Pb; TACs, including DPM; and GHGs including CO_2, CH_4, and N_2O. The Proposed Project could result in both construction and operational air quality impacts. Construction impacts include short-term emissions associated with the construction of the Project. Typical operational impacts include long-term emissions associated with the traffic generated by the Project as well as area sources such as water and energy consumptions, landscaping, consumer products use, and architectural coatings.

4.1 CONSTRUCTION EMISSIONS

4.1.1 Construction Criteria Pollutant Impacts

Construction activities, including soil disturbance dust emissions and combustion pollutants from on-site construction equipment and from off-site trucks hauling dirt, cement, or building materials, would create a temporary addition of pollutants to the local airshed. The Project applicant has developed a construction schedule that provides the estimated timeline construction stages for all three Phases of the Proposed Project. Three different construction phasing scenarios were analyzed. Scenario 1 assumes that Phase 1, Phase 2, and Phase 3 would be constructed in a sequential order and it would take approximately 28 months for Phase 1, 22 months for Phase 2, and 31 months for Phase 3 completion. Scenario 2 assumes that Phase 1 and Phase 2 would occur simultaneously, and Phase 3 would occur after the completion of Phases 1 and 2. Phases 1 and 2 would be completed in 28 months, and Phase 3 in 31 months. Scenario 3 assumes that all three Phases would occur simultaneously and would be completed in 40 months. The phasing schedule is an estimate only subject to change based upon market conditions.

Each Phase of the Proposed Project involves grading and/or excavating and the construction of buildings. For the purpose of the air quality analysis, with some exceptions, it was assumed that most of the grading and excavation would occur during the first Phase, so that building construction activities and functions could be moved forward. For conservative purposes, each construction phase was analyzed under heavy construction activities periods to facilitate conservative evaluation of a maximum emission scenario.

Construction emissions were estimated using the URBEMIS model, Version 9.2.4 (Rimpo and Associates 2007) and construction equipment estimates based on default values in the model. It was assumed that dust control measures (watering two times daily) would be employed to reduce emissions of fugitive dust during site grading and cut and fill operations. The assumptions used in this analysis are discussed below.

Each construction phase will occur in four stages. The first stage is Site Grading. During this stage, the Project Site will be graded and excavated for paving and pouring of the foundation pads. For this phase, the following assumptions were made:

- A total of up to 23 acres will be graded and excavated.
- Site excavation would require export of approximately 503,970 cubic yards (cy).

- At any given time, the maximum acreage disturbed per day will be 1 ½ acre.
- Construction equipment required will consist of one tracked loader, one wheeled loader, one motor grader, and one water truck. This assumption was based on the default equipment usage in the Users Manual for the URBEMIS model.
- Mass grading will be completed during a 12- to 20-week time period at the beginning of each construction phasing scenario.

The other construction stages will consist of the following: 1) Building Construction, 2) Architectural Coating Application, and 3) Asphalt Paving. The following assumptions are applicable to the Building Construction:

- Building construction will be completed during a 6- to 18-month period beginning after completion of site grading.
- The construction equipment required will consist of one crane, three forklifts, one other equipment, and one water truck. This assumption was based on experience with previous projects.

The major assumptions regarding architectural coating applications include the following:

- The maximum ROG content of coatings will be 100 grams/liter (g/L). This is the current limit for "flats coatings" in Rule 67. A limited amount of other types of coatings may be used. A project design measure must be adopted to include this requirement.
- High-Volume, Low-Pressure (HVLP) spray guns will be used. HVLP guns provide a better transfer efficiency that reduces the amount of paint required. This assumption must also be included as a project design measure.
- Architectural coating is conducted over a 1-month period after building construction has been completed.

Emission estimates for asphalt paving were based on the following assumptions:

- Paving will occur over a 2-month period after most of the site grading and building foundations have been applied.
- A total of up to 22.14 acres will be paved.
- The construction used will include one grader, one paver, one paving equipment, one roller, and one off-highway truck that will be used primarily for watering.

During Project construction, all construction equipment operating on the Project site should meet EPA-Certified Tier 3 emissions standards, or higher according to the following:

January 1, 2012, to December 31, 2014: All offroad diesel-powered construction equipment greater than 50 horsepower (hp) shall meet Tier 3 offroad emissions standards at minimum. In addition, all construction equipment shall be outfitted with best available control technology (BACT) devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

Post-January 1, 2015: All off-road diesel-powered construction equipment greater than 50 hp shall meet the Tier 4 emission standards at a minimum, where available. In addition, all construction equipment shall be outfitted with BACT devices certified by CARB. Any emissions control device used by the contractor shall achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by CARB regulations.

A copy of each unit's certified tier specification, BACT documentation, and CARB or SDAPCD operating permit shall be provided at the time of mobilization of each applicable unit of equipment.

The emission calculations were based on the assumption that equipment would comply with the applicable SDAPCD Regulations (including required mitigation), and be operating on site between the hours of 6:00 a.m. and 5:00 p.m. for an average of eight hours per day, five days per week. A copy of the URBEMIS model run is included in Appendix A.

Tables 7 through 9 summarize the estimated maximum daily construction emissions for each Phase of the three analyzed construction phasing scenarios per calendar year of Project construction. To evaluate the maximum daily and total construction emissions for the Project, the construction schedule, which provides week-by-week estimates of Project construction and equipment requirements, was used to develop calculations of total emissions from the individual components of the Project that would be undergoing construction simultaneously. Emission estimates have been prepared for the individual construction projects to evaluate the maximum daily emissions based on the Project construction schedule for each calendar year.

Table 7
CONSTRUCTION SCENARIO 1
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (lbs/day)

Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 1 Construction Totals						
Phase 1	7.88	87.73	38.25	0.12	25.13	7.86
Phase 2	0	0	0	0	0	0
Phase 3	0	0	0	0	0	0
Sub-total	**7.88**	**87.73**	**38.25**	**0.12**	**25.13**	**7.86**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 2 Construction Totals						
Phase 1	9.50	86.16	59.18	0.12	25.57	8.26
Phase 2	0	0	0	0	0	0
Phase 3	0	0	0	0	0	0
Sub-total	**9.50**	**86.16**	**59.18**	**0.12**	**25.57**	**8.26**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 3 Construction Totals						
Phase 1	79.77	20.40	56.90	0.05	1.90	1.59
Phase 2	0	0	0	0	0	0
Phase 3	0	0	0	0	0	0
Sub-total	**79.77**	**20.40**	**56.90**	**0.05**	**1.90**	**1.59**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Table 7 (cont.)
CONSTRUCTION SCENARIO 1
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (lbs/day)

Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 4 Construction Totals						
Phase 1	3.59	11.73	43.14	0.05	1.04	0.81
Phase 2	11.62	55.62	39.92	0.10	19.86	5.73
Phase 3	0	0	0	0	0	0
Sub-total	**15.21**	**67.35**	**83.06**	**0.15**	**20.90**	**6.54**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 5 Construction Totals						
Phase 1	0	0	0	0	0	0
Phase 2	9.62	10.40	29.62	0.03	0.84	0.67
Phase 3	5.98	61.19	28.67	0.13	23.25	6.57
Sub-total	**15.60**	**71.59**	**58.29**	**0.16**	**24.09**	**7.24**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 6 Construction Totals						
Phase 1	0	0	0	0	0	0
Phase 2	0	0	0	0	0	0
Phase 3	7.38	60.71	44.39	0.13	23.61	6.89
Sub-total	**7.38**	**60.71**	**44.39**	**0.13**	**23.61**	**6.89**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 7 Construction Totals						
Phase 1	0	0	0	0	0	0
Phase 2	0	0	0	0	0	0
Phase 3	15.89	10.95	33.51	0.05	0.91	0.68
Sub-total	**15.89**	**10.95**	**33.51**	**0.05**	**0.91**	**0.68**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 8 Construction Totals						
Phase 1	0	0	0	0	0	0
Phase 2	0	0	0	0	0	0
Phase 3	8.38	10.03	31.59	0.05	0.84	0.62
Sub-total	**8.38**	**10.03**	**31.59**	**0.05**	**0.84**	**0.62**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Table 8
CONSTRUCTION SCENARIO 2
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (lbs/day)

Source	ROG	NO$_X$	CO	SO$_X$	PM$_{10}$	PM$_{2.5}$
Year 1 Construction Totals						
Phases 1 and 2	8.58	76.21	41.54	0.09	24.87	7.70
Phase 3	0	0	0	0	0	0
Sub-total	**8.58**	**76.21**	**41.54**	**0.09**	**24.87**	**7.70**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 2 Construction Totals						
Phases 1 and 2	16.36	105.68	114.69	0.09	29.29	10.27
Phase 3	0	0	0	0	0	0
Sub-total	**16.36**	**105.68**	**114.69**	**0.09**	**29.29**	**10.27**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 3 Construction Totals						
Phases 1 and 2	116.16	35.02	83.62	0.08	2.87	2.41
Phase 3	0	0	0	0	0	0
Sub-total	**116.16**	**35.02**	**83.62**	**0.08**	**2.87**	**2.41**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 4 Construction Totals						
Phases 1 and 2	6.10	23.95	67.38	0.08	1.85	1.48
Phase 3	0	0	0	0	0	0
Sub-total	**6.10**	**23.95**	**67.38**	**0.08**	**1.85**	**1.48**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 5 Construction Totals						
Phases 1 and 2	0	0	0	0	0	0
Phase 3	5.98	61.19	28.67	0.13	23.25	6.57
Sub-total	**5.98**	**61.19**	**28.67**	**0.13**	**23.25**	**6.57**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 6 Construction Totals						
Phases 1 and 2	0	0	0	0	0	0
Phase 3	7.38	60.71	44.39	0.13	23.61	6.89
Sub-total	**7.38**	**60.71**	**44.39**	**0.13**	**23.61**	**6.89**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 7 Construction Totals						
Phases 1 and 2	0	0	0	0	0	0
Phase 3	15.89	10.95	33.51	0.05	0.91	0.68
Sub-total	**15.89**	**10.95**	**33.51**	**0.05**	**0.91**	**0.68**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 8 Construction Totals						
Phases 1 and 2	0	0	0	0	0	0
Phase 3	8.38	10.03	31.59	0.05	0.84	0.62
Sub-total	**8.38**	**10.03**	**31.59**	**0.05**	**0.84**	**0.62**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Table 9
CONSTRUCTION SCENARIO 3
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS (lbs/day)

Source	ROG	NO_X	CO	SO_X	PM_{10}	$PM_{2.5}$
Year 1Construction Totals						
Phases 1, 2, and 3	12.01	105.92	57.56	0.12	23.20	8.31
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 2 Construction Totals						
Phases 1, 2, and 3	28.48	172.39	208.73	0.25	29.01	11.77
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 3 Construction Totals						
Phases 1, 2, and 3	33.52	44.76	120.08	0.13	2.86	2.24
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 4 Construction Totals						
Phases 1, 2, and 3	37.47	40.70	112.56	0.13	2.72	2.10
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

As shown in Tables 7 through 9, the emissions associated with all three analyzed construction phasing scenarios would be below the daily thresholds for all Phases. Consequently, construction-related air quality impacts would be less than significant.

Project construction would employ dust control measures (i.e., watering twice daily) and would therefore be in compliance with strategies in the RAQS (SDAPCD 2009) for attaining and maintaining the air quality standards. Construction of the Proposed Project would therefore not conflict with or obstruct the implementation of the RAQS or applicable portions of the SIP. Emissions would be below the significance thresholds set forth by the SDAPCD. Furthermore, due to the fact that the construction phases of the Project are temporary in nature, Proposed Project construction would not result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, nor result in a cumulatively considerable net increase of ozone precursors (ROG and NOx), PM_{10} or $PM_{2.5}$. A less than significant impact would occur.

4.1.2 Construction Diesel Particulate Matter

DPM is not included as a criteria pollutant. However, it recognized by the state of California as containing carcinogenic compounds. The risks associated with exposure to substances with carcinogenic effects are typically evaluated based on a lifetime of chronic exposure, which is defined in the CAPCOA Air Toxics "Hot Spots" Program Risk Assessment Guidelines (CAPCOA 1993) as 24 hours per day, seven days per week, 365 days per year, for 70 years. DPM would be emitted from heavy equipment used in the construction process. The construction period of each Phase of the Project under any of three analyzed construction phasing scenarios would be much less than the 70 year period used for health risk determination.

Because of the temporary nature of Project construction and the fact that heavy equipment exhaust emissions are below the criteria pollutant significance threshold limits, exposure to diesel exhaust emissions during construction would not be significant.

4.1.3 Construction Naturally Occurring Asbestos

Chrysotile and amphibole asbestos (such as tremolite) occur naturally in certain geologic settings in California, most commonly in association with ultramafic rocks and along associated faults. Asbestos is a known carcinogen, and inhalation of asbestos may result in the development of lung cancer or mesothelioma. Exposing or disturbing rock and soil that contains naturally occurring asbestos can result in the release of fibers to the air and, consequently, public exposure. Asbestos most commonly occurs in ultramafic rock that has undergone partial or complete alteration to serpentine rock (serpentinite) and often contains chrysotile asbestos.

A review of the *General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos* (California Division of Mines and Geology 2000) was made. The guide shows that the Project site is not located in an area of potential naturally occurring asbestos. Also, the Geotech Report (Geotechnical Exploration, Inc. 2008) indicated that no findings of potential naturally occurring asbestos at the Project site. No further action is required. As such, Project construction NOA impacts would be less than significant.

4.1.4 Construction Odors

The only source of odor anticipated from Project construction will be exhaust emissions from the diesel equipment and haul trucks. Project construction could result in minor amounts of odor compounds associated with diesel heavy equipment exhaust. During construction, diesel equipment operating at various locations on the site may generate some nuisance odors; however, due to the temporary nature of construction, odors associated with Project construction would cease at the completion of construction period. Additionally, the odors would be temporary and would cease at the completion of construction activity. As such, Project construction would not cause an odor nuisance, and odor impacts would be less than significant.

4.2 OPERATIONAL EMISSIONS

4.2.1 Operational Criteria Pollutant Impacts

The operational impacts associated with the Proposed Project would include impacts associated with vehicular traffic, as well as area sources such as energy use, landscaping, consumer products use, and architectural coatings use. The Project evaluated in this study uses the trip generation rate information for each land uses from the Traffic Impact Analysis (TIA; Urban Systems Associates 2012). The Proposed Project has been evaluated for three scenarios, Phase 1, Phase 1 and 2, and Project Buildout (i.e., Phase 1, 2, and 3). According to the TIA, Phase 1 would generate a total of 9,888 average daily trips (ADT); Phase 1 and 2 would generate 17,812 ADT; and Project Buildout would generate 26,961 ADT.

The development is proposed for an area that has substantial existing developments in the surrounding area and the Proposed Project would therefore constitute “infill” development. This means that the Proposed Project would utilize existing transportation infrastructure and existing development in the Project area to reduce vehicle trips and therefore vehicle emissions. These infill development emission reductions are incorporated into the URBEMIS model by designating surrounding housing density, retail availability and employment centers.

Infill development, such as the Proposed Project, would also reduce emissions due to the location of homes closer to areas of employment and in an urban area, rather than located in more rural areas with homes farther from employment. URBEMIS indicates that, if the development were in a rural area, daily trip lengths would be greater by about 50% or about 5 miles per trip.

To reduce vehicle emissions from transportation sources and as a condition of the occupancy permit, the City shall require the Project applicant to provide bicycle racks and temporary storage lockers at the new facilities, to offer preferential parking for electric and hybrid vehicles, and to post signage that on-road delivery trucks and other vehicles greater than 10,000 pounds shall be shut off when not in use and shall not idle for more than 5 minutes.

Project Design Feature Air-1: Prior to approval of building permits, the following Project design features shall be included in the notes of the building permit and implemented prior to issuance of a certificate of occupancy:

- The Applicant shall use materials that exceed Title 24 standards to reduce thermal loss and energy demand, as feasible;
- The Applicant shall place signs in the loading docks area to inform truck drivers from idling for longer than five minutes, in compliance with state law;
- The Applicant shall provide informational packets locating nearby public transportation options to patrons and employees; and
- The Applicant shall provide electric vehicle charging stations, to encourage the use of zero emission vehicles.

The Project design features listed above would reduce criteria pollutants and GHG emissions to the extent feasible. Certain project design features can be accounted for within the URBEMIS model as mitigation measures (“URBEMIS Mitigation Measures”). Some of the measures are available in URBEMIS to analyze the emission reductions. These include the following:

- Increasing home energy efficiency beyond Title 24 standards;
- Infill development, including the development of housing units within an area that has existing development (within a ½ mile radius) (design feature);
- Infill development with retail use within a ½ mile radius (design feature);
- Bike and pedestrian measures including 100% of streets with bike paths and sidewalks on or adjacent to the streets (design feature).

The total operational emissions associated with vehicle sources and area sources including energy use, landscaping, consumer products use, hearth emissions, and architectural coatings use for maintenance purposes were estimated using the URBEMIS model, Version 9.2.4. Motor vehicle trips generated by the Project would be the predominate source of long-term Project emissions. It should be noted that the URBEMIS model does not contain San Diego-specific emission factors; therefore, emissions are based on California statewide averages. For the entrained road PM_{10} dust, the CARB methodology assumes that roadway silt loading for arterial roads is 0.035 grams per square meter. As shown in Tables 10 through 12, daily operational emissions would not exceed the regional thresholds for criteria pollutants. As such, the Project would result in a less than significant impact. No mitigation is required.

Table 10
SUMMARY OF ESTIMATED PHASE 1 OPERATIONAL EMISSIONS

Emission Source	**Maximum Daily Emissions (lbs/day)**					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	2.80	3.69	6.77	0	0.02	0.02
Vehicular Sources	21.94	26.93	209.31	0.25	26.71	5.92
Total	25	31	216	<1	27	6
Daily Threshold (lbs/day)	137	250	550	250	100	55
Exceed Thresholds?	No	No	No	No	No	No

Table 11
SUMMARY OF ESTIMATED PHASES 1 AND 2 OPERATIONAL EMISSIONS

Emission Source	**Maximum Daily Emissions (lbs/day)**					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	13.52	5.38	8.92	0	0.03	0.03
Vehicular Sources	37.80	48.20	371.61	0.43	44.13	12.85
Total	51	54	381	<1	44	13
Daily Threshold (lbs/day)	137	250	550	250	100	55
Exceed Thresholds?	No	No	No	No	No	No

Table 12
SUMMARY OF ESTIMATED PROJECT BUILDOUT OPERATIONAL EMISSIONS

Emission Source	**Maximum Daily Emissions (lbs/day)**					
	ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area Sources	36.48	9.44	13.75	0	0.05	0.05
Vehicular Sources	49.97	54.51	462.16	0.72	73.93	14.67
Total	86	64	476	<1	74	15
Daily Threshold (lbs/day)	137	250	550	250	100	55
Exceed Thresholds?	No	No	No	No	No	No

4.2.2 Operational Combined with Construction Impacts

Because the Project would be constructed in three phases, it is likely that operational activities would overlap with construction activities. Therefore, the total Proposed Project emissions were estimated during a year when construction and operational activities substantially overlap. Under Scenario 1 construction phasing plan, the Phase 2 construction and Phase 1 operation activities would overlap, and Phase 3 construction would overlap Phase 1 and 2 operations, respectively. Tables 13 and 14 presents the combined total of peak daily construction and operational emissions. The combined (construction plus operational) emissions are compared with the thresholds.

Table 13
COMBINED PHASE 2 CONSTRUCTION AND PHASE 1 OPERATIONAL EMISSIONS

	-ROG	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Lbs/day[a]						
Phase 2 Construction						
Mass Grading Off-Road Diesel	2.26	10.50	10.40	0	0.61	0.56
Mass Grading On-Road Diesel	3.23	45.07	15.37	0.01	1.92	1.55
Mass Grading Worker Trips	0.02	0.04	0.65	0	0.01	0
Building Off-Road Diesel	2.40	12.04	9.62	0	0.76	0.70
Building On-Road Diesel	0.26	3.09	2.68	0.01	0.15	0.12
Building Worker Trips	0.53	1.02	16.09	0.02	0.19	0.10
Architectural Coatings Off-Gas	21.25	0	0.00	0	0	0
Architectural Coatings Worker Trips	0.01	0.01	0.16	0	0	0
Asphalt Off-Gas	0.11	0	0	0	0	0
Asphalt Off-Road Diesel	2.20	13.65	9.82	0	1.11	1.02
Asphalt On-Road Diesel	0.01	0.21	0.07	0	0.01	0.01
Asphalt Worker Trips	0.05	0.09	1.47	0	0.02	0.01
Construction Sub-total	32.33	85.72	66.33	0.04	4.78	4.07
Phase 1 Operations						
Area Sources[b]	2.80	3.69	6.77	0	0.02	0.02
Vehicular Emissions[b]	21.94	26.93	209.31	0.25	26.71	5.92
Operation Sub-total	25	31	216	<1	27	6
Combined Total	**57**	**116**	**282**	**0**	**32**	**10**
Screening-Level Thresholds	137	250	550	250	100	55
Above Screening-Level Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

[a] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[b] Maximum pounds per day for summer or winter from URBEMIS model.

Table 14
COMBINED PHASE 3 CONSTRUCTION AND PHASES 1 AND 2 OPERATIONAL EMISSIONS

	ROG	NO$_X$	CO	SO$_X$	PM$_{10}$	PM$_{2.5}$
Lbs/day[a]						
Phase 3 Construction						
Off-Road Diesel	2.13	9.64	10.09	0	0.57	0.52
Mass Grading On-Road Diesel	3.83	51.51	17.97	0.13	2.24	1.78
Mass Grading Worker Trips	0.02	0.04	0.61	0	0	0
Building Off-Road Diesel	1.98	6.24	9.21	0	0.45	0.41
Building On-Road Diesel	0.40	4.36	4.15	0.02	0.23	0.17
Building Worker Trips	0.71	1.38	22.06	0.03	0.30	0.16
Architectural Coatings Off-Gas	1.15	0	0	0	0	0
Architectural Coatings Worker Trips	0.01	0.01	0.22	0	0	0
Asphalt Off-Gas	0.12					
Asphalt Off-Road Diesel	1.66	6.11	7.79	0	0.61	0.56
Asphalt On-Road Diesel	0.01	0.18	0.06	0	0.01	0.01
Asphalt Worker Trips	0.04	0.07	1.12	0	0.02	0.01
Sub-total Construction Sub-total	12.06	79.54	73.28	0.18	4.44	3.62
Phases 1 and 2 Operations						
Area Sources[b]	13.52	5.38	8.92	0	0.03	0.03
Vehicular Emissions[b]	37.80	48.20	371.61	0.43	44.13	12.85
Operation Sub-total	51	54	381	<1	44	13
Combined Total	**63**	**133**	**454**	**1**	**49**	**17**
Screening-Level Thresholds	137	250	550	250	100	55
Above Screening-Level Thresholds?	*No*	*No*	*No*	*No*	*No*	*No*

[a] Fugitive dust measures were applied to control PM$_{10}$ and PM$_{2.5}$ dust emissions in the URBEMIS model.

[b] Maximum pounds per day for summer or winter from URBEMIS model.

The combined construction and operational emissions would be below the daily threshold and would therefore be less than significant under CEQA for all pollutants.

4.2.3 Operational Carbon Monoxide Hot Spots Impacts

CARB also recommends evaluation of the potential for the formation of locally high concentrations of CO, known as CO “hot spots.” To verify that the Project would not cause or contribute to a violation of the 1-hour and 8-hour CO standards, a screening evaluation of the potential for CO “hot spots” was conducted. The TIA (Urban Systems Associates 2012) evaluated whether or not there would be a decrease in the level of service (LOS) at the roadways and/or intersections affected by the Proposed Project. The potential for CO “hot spots” was evaluated based on the results of the TIA. The Transportation Project-Level Carbon Monoxide Protocol (Caltrans 1998) was followed to determine whether a CO “hot spot” is likely to form due to Project-generated traffic. In accordance with the Protocol, CO “hot spots” are typically evaluated when (a) the level of service (LOS) of an intersection or roadway decreases to a LOS E or worse; (b) signalization and/or channelization is added to an intersection; and (c) sensitive receptors such as residences, commercial developments, schools, hospitals, etc. are located in the vicinity of the affected intersection or roadway segment.

The TIA evaluated 36 intersections (with and without the project) in the Project vicinity to evaluate the Existing Plus Project (Phase 1), Existing Plus Project (Phases 1 and 2), Existing Plus Project Buildout, Near-term With Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project (Phases 1, 2, and 3), and Long-term Cumulative (Year 2030) With Project conditions. The TIA evaluated LOS for each intersection for each condition. Based on the TIA, there are a total of five intersections under the analyzed scenarios where Project-related traffic will cause a significant degradation to LOS E or worse. Table 15 presents a summary of the LOS for each of the intersections evaluated by scenario.

Table 15
INTERSECTION LEVEL OF SERVICE SUMMARY

Intersection	**Existing + Project (Phase 1)**		**Existing + Project (Phases 1 and 2)**		**Existing + Project Buildout**		**Near-term With Project (Phase 1)**		**Near-term With Project (Phases 1 and 2)**		**Near-term With Project Buildout**		**Long-term (Year 2030) With Project**	
	AM	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**	**AM**	**PM**
Del Mar Heights Rd / I-5 NB Ramps	D	D	D	D	D	D	D	F	F	D	D	E	F	F
Del Mar Heights Rd / High Bluff Drive	C	C	C	D	C	D	C	E	E	E	C	E	E	F
Del Mar Heights Rd/El Camino Real	C	C	C	D	C	D	C	D	D	E	D	E	D	F
El Camino Real/ SR-56 EB On Ramp	B	C	B	C	B	C	B	C	C	D	B	D	C	F
Carmel Creek Road / Del Mar Trail	E	C	E	C	E	C	E	E	E	C	F	D	E	C

Source: Urban Systems Associates, Inc. 2012.

To evaluate the potential for CO "hot spots," the procedures in the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol (Caltrans 1998) were used. As recommended in the Protocol, CALINE4 modeling was conducted for the intersections identified above for the scenario without Project traffic, and with the Project scenarios. Modeling was conducted based on the guidance in Appendix A of the Protocol to calculate maximum predicted 1-hour CO concentrations. Predicted 1-hour CO concentrations were then scaled to evaluate maximum predicted 8-hour CO concentrations using the recommended scaling factor of 0.7 for urban locations.

Inputs to the CALINE4 model were obtained from the TIA (Urban Systems Associates 2012). As recommended in the Protocol, receptors were located at locations that were approximately three meters from the mixing zone, and at a height of 1.8 meters. Emission factors from the EMFAC2007 model were used in the CALINE4 model.

In accordance with the Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol, it is also necessary to estimate future background CO concentrations in the Project vicinity to determine the potential impact plus background and evaluate the potential for CO "hot spots" due to the Project. The existing maximum 1-hour and 8-hour background concentrations of CO that was measured at the downtown San Diego monitoring station for the period 2007 – 2009 of 8.7 and 5.2 ppm were used to represent existing plus Project and future maximum background 1-hour and 8-hour CO concentrations.

The CALINE4 model outputs are provided in Attachment A of this report. Tables 16a and 16b present a summary of the predicted CO concentrations (impact plus background) for the affected intersections evaluated under Existing Plus Project (Phase 1), Existing Plus Project (Phases 1 and 2), Existing Plus Project Buildout, Near-term With Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project Buildout, and Long-term Cumulative (Year 2030) Conditions. As shown in Tables16a and 16b, the predicted CO concentrations would be substantially below the 1-hour and 8-hour CAAQS for CO shown in Table 1 of this report. Therefore, no exceedances (hot spots) of the CO standard are predicted, and the Project would not cause or contribute to a violation of this air quality standard under Existing Plus Project (Phase 1), Existing Plus Project (Phases 1 and 2), Existing Plus Project Buildout, Near-term With Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project Buildout, and Long-term Cumulative (Year 2030) conditions.

Table 16a
CO "HOT SPOTS" MODELING RESULTS – EXISTING PLUS PROJECT CONDITIONS

Intersection	Maximum 1-hour CO Concentration plus Background (ppm)		Maximum 8-hour CO Concentration plus Background (ppm)
	am	pm	
Existing Plus Project (Phase 1)			
Del Mar Heights Road/I-5 NB Ramps	10.7	10.6	6.6
Del Mar Heights Road/High Bluff Drive	10.3	10.5	6.5
Del Mar Heights Road/El Camino Real	9.9	10.1	6.2
El Camino Real/SR-56 EB On Ramp	10.0	10.3	6.3
Carmel Creek Road/Del Mar Trail	9.3	9.3	5.6
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No
Existing Plus Project (Phases 1 and 2)			
Del Mar Heights Road/I-5 NB Ramps	10.7	10.7	6.6
Del Mar Heights Road/High Bluff Drive	10.4	10.6	6.5
Del Mar Heights Road/El Camino Real	10.0	10.3	6.3
El Camino Real/SR-56 EB On Ramp	10.0	10.3	6.3
Carmel Creek Road/Del Mar Trail	9.3	9.3	5.6
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No
Existing Plus Project (Buildout)			
Del Mar Heights Road/I-5 NB Ramps	10.7	10.8	6.7
Del Mar Heights Road/High Bluff Drive	10.4	10.8	6.7
Del Mar Heights Road/El Camino Real	10.0	10.4	6.4
El Camino Real/SR-56 EB On Ramp	10.0	10.3	6.3
Carmel Creek Road/Del Mar Trail	9.3	9.3	5.6
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No

Table 16b
CO "HOT SPOTS" MODELING RESULTS – NEAR-TERM WITH PROJECT AND LONG-TERM CUMULATIVE (YEAR 2030) CONDITIONS

Intersection	Maximum 1-hour CO Concentration plus Background (ppm)		Maximum 8-hour CO Concentration plus Background (ppm)
	am	pm	
Near-term With Project (Phase 1)			
Del Mar Heights Road/I-5 NB Ramps	10.7	10.7	6.6
Del Mar Heights Road/High Bluff Drive	10.4	10.6	6.5
Del Mar Heights Road/El Camino Real	10.0	10.2	6.3
El Camino Real/SR-56 EB On Ramp	10.4	10.6	6.5
Carmel Creek Road/Del Mar Trail	9.3	9.3	5.6
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No
Near-term With Project (Phases 1 and 2)			
Del Mar Heights Road/I-5 NB Ramps	10.8	10.8	6.7
Del Mar Heights Road/High Bluff Drive	10.5	10.8	6.6
Del Mar Heights Road/El Camino Real	10.0	10.4	6.4
El Camino Real/SR-56 EB On Ramp	10.4	10.6	6.5
Carmel Creek Road/Del Mar Trail	9.3	9.4	5.7
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No
Near-term With Project Buildout			
Del Mar Heights Road/I-5 NB Ramps	10.8	10.9	6.7
Del Mar Heights Road/High Bluff Drive	10.5	10.5	6.5
Del Mar Heights Road/El Camino Real	10.0	10.6	6.5
El Camino Real/SR-56 EB On Ramp	10.4	10.6	6.5
Carmel Creek Road/Del Mar Trail	9.3	9.4	5.7
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No
Long-term Cumulative (Year 2030) With Project			
Del Mar Heights Road/I-5 NB Ramps	9.9	9.9	6.0
Del Mar Heights Road/High Bluff Drive	9.7	9.8	6.0
Del Mar Heights Road/El Camino Real	9.4	9.7	5.9
El Camino Real/SR-56 EB On Ramp	9.6	9.9	6.0
Carmel Creek Road/Del Mar Trail	9.0	9.0	5.4
CAAQS for CO	20.0	20.0	9.0
Exceed CAAQS Standard?	No	No	No

4.2.4 Operational Toxic Air Contaminants Impacts

Mobile sources of TACs could include proposed land uses that involve the long-term use of heavy-duty diesel trucks. Implementation of the Proposed Project would include development of commercial land uses, which may include facilities that require the long-term use of heavy duty diesel trucks (e.g., loading docks). The operation of such a source could result in the exposure of sensitive receptors, especially those within close proximity, to toxic air emissions that exceed the significance threshold.

Sources of TAC emissions include diesel-fueled engine and possible food-service facility operations. Delivery truck travel, truck idling, and operation of the emergency back-up power generator are emission sources of particulate matter from diesel-fueled engines. Trucks entering and leaving the Proposed Project would include deliveries associated with the retail stores and possible food service establishments. Trucks idling would occur in the shipping and receiving delivery dock areas. Trucks would be limited to an idle time not to exceed 5 minutes for entering or exiting the truck delivery well, in accordance with California state law. The loading delivery docks are the only locations where routine truck idling associated with operation of the project would be expected.

It is unknown at the time of writing, the types of tenants that would occupy retail space at the project site. It is possible that restaurants serving the residential uses could be included as tenants. Restaurants emit minor amount of TACs from the cooking of animal fats and oils. TAC emissions would be controlled through an exhaust hood to a roof-top vent. It is possible that operation of the restaurant would require use of trucks equipped with transportation refrigeration storage units (TRUs) to deliver cold-stored food items. Trucks equipped with TRUs typically result in higher TAC emissions, because they are equipped with diesel generator sets to keep perishable food cold, in addition to diesel engine exhaust from the truck. However, it is not anticipated that the retail establishments would experience high truck volumes (i.e., warehouses with distribution centers that have greater than 100 commercial trucks per day or 40 TRU-equipped trucks per day as defined by CARB as the screening level) delivering materials on a frequent basis.

Therefore, onsite or offsite sensitive receptors would not be exposed to substantial TAC concentrations from these sources.

4.2.5 Operational Odor Impacts

Land uses and industrial operations that are associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies and fiberglass molding. The Project site would be developed with commercial and residential land uses, and not land uses that are typically associated with odor complaints. On-site trash receptacles would have the potential to create adverse odors. As trash receptacles would be located and maintained in a manner that promotes odor control, such as keeping the receptacles closed and secured, and scheduling the timely garbage collections before the receptacles reaches unsanitary conditions, no adverse odor impacts are anticipated from the proposed commercial land uses. Therefore, Project operations would result in a less-than significant odor impact.

4.3 PROJECT GREENHOUSE GAS EMISSIONS

4.3.1 Construction Greenhouse Gas Emissions

GHG emissions would be associated with the construction phase of the Project through use of heavy equipment and vehicle trips. Emissions of GHGs would be temporary. Emissions of CO_2 during construction of the Proposed Project were calculated using the URBEMIS 2007 computer program. The URBEMIS model does not provide estimates of emissions of other GHGs from construction (such as N_2O and CH_4); however, these emissions would be minor in comparison with emissions of CO_2. URBEMIS 2007 output are contained in Attachment A.

The Project applicant has developed a construction schedule that provides the estimated timeline construction stages for all three Phases of the Proposed Project. Three different construction phasing scenarios were analyzed. Scenario 1 assumes that Phase 1, Phase 2, and Phase 3 would be constructed in a sequential order and it would take approximately 28 months for Phase 1, 22 months for Phase 2, and 31 months for Phase 3 completion. Scenario 2 assumes that Phase 1 and Phase 2 would occur simultaneously, and Phase 3 would occur after the completion of Phases 1 and 2. Phases 1 and 2 would be completed in 28 months, and Phase 3 in 31 months. Scenario 3 assumes that all three Phases would occur simultaneously and would be completed in 40 months. The phasing schedule is an estimate only subject to change based upon market conditions.

Tables 17 through 19 present a summary of total construction GHG emissions for each of the three analyzed construction phasing scenarios per calendar year of Project construction. GHG emission estimates were prepared to evaluate the total annual emissions per Phase based on the Project construction schedule for each calendar year of Project construction.

Table 17
CONSTRUCTION SCENARIO 1 - TOTAL CONSTRUCTION GHG EMISSIONS

Construction Year	Phase 1	Phase 2	Phase 3
Year 1 Construction Totals	83.45	--	--
Year 2 Construction Totals	1,198.58	--	--
Year 3 Construction Totals	1,069.97	--	--
Year 4 Construction Totals	17.05	944.05	--
Year 5 Construction Totals	--	335.47	274.56
Year 6 Construction Totals	--	--	515.06
Year 7 Construction Totals	--	--	917.44
Year 8 Construction Totals	--	--	407.74
TOTAL per Phase (tons)	**2,369.05**	**1,279.52**	**2,114.80**
TOTAL per Phase (metric tons)	**2,149.16**	**1,160.76**	**1,918.51**
TOTAL for entire Construction (metric tons)			**5,228.43**

Table 18
CONSTRUCTION SCENARIO 2 - TOTAL ANNUAL CONSTRUCTION GHG EMISSIONS

Construction Year	Phases 1 and 2	Phase 3
Year 1 Construction Totals	72.35	--
Year 2 Construction Totals	1,788.07	--
Year 3 Construction Totals	1,718.29	--
Year 4 Construction Totals	29.22	--
Year 5 Construction Totals	--	274.56
Year 6 Construction Totals	--	515.06
Year 7 Construction Totals	--	917.44
Year 8 Construction Totals	--	407.74
TOTAL per Phase (tons)	**3,607.93**	**2,114.80**
TOTAL per Phase (metric tons)	**3,273.06**	**1,918.51**
TOTAL for entire Construction (metric tons)		**5,191.57**

Table 19
CONSTRUCTION SCENARIO 3 - TOTAL ANNUAL CONSTRUCTION GHG EMISSIONS

Construction Year	Phases 1, 2, and 3
Year 1 Construction Totals	100.74
Year 2 Construction Totals	3,215.27
Year 3 Construction Totals	2,480.21
Year 4 Construction Totals	2,200.97
TOTAL entire Construction (tons)	**7,997.19**
TOTAL for entire Construction (metric tons)	**7,254.92**

Construction of the Proposed Project would emit approximately 5,228 MT per year of GHG emissions under construction Scenario 1, approximately 5,192 MT for construction Scenario 2, and approximately 7,255 MT for construction Scenario 3. For the construction emissions, the interim City guidance recommends that the emissions be amortized over 30 years and added to operational emissions. Amortized over 30 years, the proposed construction activities for construction Scenarios 1, 2, and 3 would contribute a total of approximately 174 MT, approximately 173 MT, and approximately 242 MT per year, respectively. The total with operational emissions is presented below in section 4.3.3.

4.3.2 Operational Greenhouse Gas Emissions

Operation of the Proposed Project would result in GHG emissions from vehicular traffic generated by residents and patrons, area sources (natural gas appliances, hearth combustion, and landscape maintenance), electrical generation (based on 2005 Title 24 energy code), solid waste generation, and water supply. Emissions associated with vehicular traffic, electrical generation, and water supply would be reduced by implementing GHG reduction measures, as indicated in Section 5.0 below.

Energy Use

Emissions associated with energy use would arise from the combustion of fossil fuels to provide energy for the Proposed Project. The Proposed Project is assumed to use purchased electricity for cooling, appliances and plug-loads, and natural gas for cooking and water heating. Emissions of GHGs from the proposed One Paseo development were projected based on estimated annual energy use of 13.55 kilowatt hours (kWh) per sf for commercial and 5,627 kWh per du for residential units (SCAQMD 1993). Emissions were estimated based on emission factors from the California Climate Action Registry General Reporting Protocol (Protocol; CCAR 2009), which assumes that energy use (electricity) would have emissions of 804.54 lbs/megawatt hours (MWh) of CO_2, 0.0067 lbs/MWh of CH_4, and 0.0037 lbs/MWh of N_2O. As shown in Table 20, the resultant GHG emissions would be approximately 5,576 metric ton per year of CO_2e emissions from electricity usage associated with the Proposed Project.

Emissions associated with natural gas usage were calculated based on the SCAQMD's estimated natural gas usage of 2.9 cubic feet of natural gas per square foot per month for commercial, 2.0 cubic feet of natural gas per square foot (cf/sf) per month for retail, and 4,012 cf per dwelling unit (du) for residential units (SCAQMD 1993). The Protocol assumes that natural gas combustion would have emissions of 53.05 kg/MMBTU of CO_2, 0.0059 kg/MMBTU of CH_4, and 0.0001 kg/million British thermal units (MMBTU) of N_2O. As shown in Table 20, the resultant GHG emissions would be approximately 2,887 metric tons per year of CO_2e emissions from natural gas usage associated with the Proposed Project.

Water Consumption

Water use and energy use are often closely linked. The provision of potable water to commercial and residential consumers requires large amounts of energy associated with five stages: (1) source and conveyance, (2) treatment, (3) distribution, (4) end use and (5) wastewater treatment. According to the *Water Supply Assessment Report for the San Diego Corporate Center* (City of San Diego 2011b), the potable water demand for the Proposed Project will be approximately 0.64 acre-feet[2] (208,138 gallons) per day. Based on this, it is anticipated that the Proposed Project would require approximately 233 acre-feet (75,970,370 gallons) per year.

The California Energy Commission (2005) estimates that in southern California, water usage will have an embodied energy of 12,700 kWh per million gallons. CO_2 emissions were calculated on the maximum basis of an additional 75.97 million gallons annually times 12,700 kWh per million gallons. Thus, the Proposed Project would indirectly produce a net increase of approximately 964.8 megawatt hours (MWh) of electricity requirements for water supply and distribution. Emissions of GHGs were calculated based on the California Climate Action Registry General Reporting Protocol (CCAR 2009), which assumes that energy use (electricity) would have emissions of 804.54 lbs/MWh of CO_2, 0.0067 lbs/MWh of CH_4, and 0.0037 lbs/MWh of N_2O. As shown in Table 20, the resultant GHG emissions would be approximately 353 metric tons per year of CO_2e emissions from water consumption associated with the Proposed Project.

---

[2] One acre foot of water is 325,851 gallons (enough water to cover a one-acre area one foot deep in water).

Solid Waste Generation

The Proposed Project would also generate solid waste during the operation of the Project. The solid waste emissions in some disposal methods are released slowly over a period of years. Different types of organic matter have different methane generation potentials based on carbon content of the wastes. Waste generated is generally the gross amount of waste produced by the Proposed Project. Solid waste disposed is the net amount of waste following the effects of any diversion efforts (e.g., recycling or reuse), and must be the quantity used for GHG calculations.

Solid waste generation rates were estimated from the CIWMB *Solid Waste Characterization: Guidelines for Preparation of Environmental Assessment for Solid Waste Management* (CIWMB 2010). Based on data from the CIWMB, the residential/commercial mixed uses were assumed to generate 0.0108 tons/square foot/year. Waste collection trucks are accounted for in the URBEMIS 2007 model, which incorporates diesel trucks that would visit and service the Proposed Project site. As shown in Table 20, it is estimated that approximately 90 metric ton per year of GHG emissions would be generated from the waste collection activities at the Project site.

Vehicle Use

Mobile-source GHG emissions were estimated based on the projected ADTs from the TIA (Urban Systems and Associates 2012). Emissions of CO_2 and CH_4 were obtained from the EMFAC2007 model. Emissions of N_2O were estimated based on California Climate Action Registry General Reporting Protocol (CCAR 2009), which is based on current CARB vehicle emission standards. Based on the maximum of approximately 26,961 ADT projected for the Proposed Project, emissions of CO_2-equivalent vehicle GHGs were estimated at 13,894 tons per year (or 12,604 metric tons per year).

As shown in Table 20, the total estimated Project-related operational GHG emissions under BAU conditions are 22,849 metric tons of CO_2e emissions per year. As also indicated in Table 20, Project vehicular traffic is the primary source of GHG emissions.

Table 20
SUMMARY OF TOTAL ESTIMATED OPERATIONAL GHG EMISSIONS UNDER BAU CONDITIONS

Emission Source	Annual Net Emissions (metric tons/year)			
	CO_2	CH_4	N_2O	CO_2 Equivalents
Electricity Use Emissions	5,567	0.0475	0.0263	5,576
Natural Gas Use Emissions	2,878	0.3203	0.0054	2,887
Water Consumption Emissions	352	0.0029	0.0016	353
Solid Waste Emissions	90	0.0003	0.0002	90
Vehicular Use Emissions	12,604	3.5657	3.6674	13,816
Global Warming Potential Factor	1	21	310	-
TOTAL CO_2 Equivalent Emissions				**22,722**

4.3.3 Total Project Greenhouse Gas Emissions

The total GHG emissions that would be generated by the Project are the sum of amortized construction GHG emissions plus the total operational emissions. As discussed above, construction GHG emissions were calculated for three construction phasing scenarios. The total Project GHG emissions accounting for each of the analyzed construction phasing scenarios are summarized in Table 21.

Table 21
TOTAL PROJECT GHG EMISSIONS
(MT/year)

Emissions Source	Construction Scenario 1	Construction Scenario 2	Construction Scenario 3
Amortized Construction	174	173	242
Operations	22.722	22.722	22.722
TOTAL	**22,896**	**22,895**	**22,964**

As stated in Section 3.0, a reduction of 28.3 percent below BAU levels is consistent with the goals of AB 32. Specific Project design features and GHG reduction measures have been incorporated into the Project design. These Project design features and GHG reduction measures, which will reduce emissions of GHG by implementing energy efficiency measures, water conservation measures, and programs to reduce VMT, are discussed in Section 5.0.

5.0 SUMMARY OF PROJECT DESIGN FEATURES

The following GHG reduction measures and Project design features would reduce GHG impacts.

5.1 GREENHOUSE GAS EMISSIONS

Project design features and potential GHG reduction measures proposed by the Project applicant are listed in Sections 5.1.1 and 5.1.2 below. As shown below, a wide range of Project design features and GHG reduction measures would be incorporated into the Project, ranging from the water use efficiency to building energy efficiency and landscaping, and solid waste diversion.

As discussed in Section 4.0, an emission reduction target of 28.3 percent below BAU levels is considered to demonstrate that a project would be consistent with the goals of AB 32.

5.1.1 Summary of Existing State Measures – Greenhouse Gas Emissions

As shown in Table 18, and as discussed in the CARB's *Staff Report, California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit* (CARB 2007b), vehicular emissions are the greatest contributor to GHG emissions. Because the applicant does not have direct control over the types of vehicles or emission/fuel standards, the effect of California programs to reduce GHG emissions from vehicles was evaluated. In addition, the difference between cumulative trips and driveway trips was considered in the analysis to account for the placement of mixed office and retail in the vicinity of residential and commercial uses, which would allow for internal trips.

Based on the SDCGHGI, the percent reductions in GHG emissions anticipated through implementation of the Federal CAFE standards, LCFS, and Pavley fuel efficiency standard (analogous to the Federal CAFE standard), as well as the effect of light/heavy vehicle efficiency/hybridization programs can be estimated. Based on that study, emissions from vehicles would be reduced by 14.06 percent through implementation of the Federal CAFE standard/Pavley standard, 6.6 percent through LCFS, and 0.62 percent by the light/heavy vehicle aerodynamic efficiency/hybridization standard. Emissions from vehicles would therefore be reduced by as much as 33 percent from state and federal programs by the year 2020.

In addition to the Pavley fuel efficiency standards and the LCFS, included in the CARB's Scoping Plan (CARB 2008) are strategies to reduce emissions by increasing efficiency, optimizing aerodynamics, and converting combustion-only vehicles to hybrids. According to the SDCGHGI, although these on-road emissions reduction measures are intended for implementation at the state level, several on-road transportation strategies were scaled down to San Diego County using data related to CO2e emissions, vehicle population, and vehicle type.

According to the SDCGHGI, implementation of the 20% Renewable Portfolio Standard (RPS) goal by 2010 would reduce GHG emissions by a further 14% from 2006 levels (e.g., URBEMIS 2007 model used pre-2007 data); the inventory estimated that San Diego Gas and Electric was providing 11.9% of its electricity from renewable resources in 2010. To account for the implementation of the 20% RPS, a 8.1% reduction in GHG emissions was assumed. While implementation of EO S-21-09 (i.e., the 33% RPS) will result in additional GHG reductions of 13% below 2010 levels, additional credit was taken for these reductions because the PUC is currently developing the procurement plans for the 33% RPS implementation starting in December 10, 2011 (California PUC 2011). Table 22 presents the Proposed Project's GHG emissions reduction due to existing state measures.

Table 22
EXISTING STATE MEASURES FOR GHG EMISSIONS REDUCTIONS
(Metric Tons Per Year)

Measure	**Sector**	**Percent Reduction from BAU[1] (Sector Specific)**	**BAU CO_2e/Sector**	**CO_2e Reduced**
Renewable Portfolio Standard (20% by 2020)	Energy Use	8.10%	5,576	451.66
Electricity Energy Efficiency (AB32)	Energy Use	11.67%	5,576	650.72
Renewable Portfolio Standard (33% by 2020)	Energy Use	13.00%	5,576	724.88
2008 Title 24 Energy Code Requirements	Natural Gas/Energy Use	15.00%	7,863	1,179.45
Assembly Bill 1493: Pavley I & II	Transportation	14.06%	13,816	1,942.53
Executive Order S-1-07 (Low Carbon Fuel Standard)	Transportation	6.6%	13,816	911.86
Medium/Heavy Duty Vehicles (Aerodynamic Efficiency and Vehicle Hybridization)	Transportation	0.62%	13,816	85.66
Subtotal – Metric Tons of CO_2e Reduced				**5,946.76**

1. Percent Reduction from BAU calculated based on the CARB Scoping Plan reductions for sector-specific activity (e.g., LCFS Reductions Counted Towards 2020 Target is 15 MMT CO_2e and Projected 2020 BAU Transportation emissions are 225.4 MMT CO_2e, therefore 15 MMT CO_2e ÷ 225.4 MMT CO_2e = 6.6%). *CARB Scoping Plan, December 2008*
2. Emissions available from Table 10, by sector: Total Greenhouse Gas Emissions (Annual) BAU without Consideration of Project Design Features and/or State and Federal Mandates.

3. CO_2e Reduced is quantified by multiplying the Percent Reduction from BAU (Sector Specific) by the BAU CO_2e/Sector value.

5.1.2 Summary of Project Design Features – Greenhouse Gas Emissions

The Proposed Project would incorporate design features intended to reduce estimated GHG emissions generated by a mixed-used development. These Project design features and the respective GHG emissions reductions are discussed below and summarized in Table 23. As identified in the table, proposed design features would result in GHG emissions reductions of approximately 2,556 metric tons per year. The assumptions for the Project design features were obtained from CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures*, (CAPCOA 2010). The Project design features correspond to the CAPCOA measure numbers listed in the referenced CAPCOA report.

Building Energy Use. The Project would incorporate energy efficiency features that would exceed 2008 California Title 24 Energy Efficiency Standards by 20 percent. Pursuant to Measure BE-1 in the 2010 CAPCOA report, GHG are emitted as a result of activities in residential and commercial buildings when electricity and natural gas are used as energy sources. New buildings must be designed to meet the building efficiency energy standards of Title 24. Part 6 of Title 24 regulates energy uses, including space heating and cooling, hot water heating, and ventilation. By committing to a percent improvement over Title 24 requirements, a project reduces its energy use and resulting GHG emissions. As shown in Table 20, a 20-percent commitment to exceed Title 24 standards would result in a 23 percent reduction from BAU (sector specific) and an annual reduction in GHG emissions by 1,572.6 metric tons CO_2e.

Water Use. Water use indirectly contributes to generation of GHG emissions from the production of the electricity that is used to pump, treat, and distribute water. Pursuant to Measure WUW-1 in the 2010 CAPCOA report, installation of low-flow or high-efficiency water fixtures in buildings reduces water demand, energy demand, and associated indirect GHG emissions. The Project would implement water conservation features to increase water use efficiency and decrease water use demand, including EPA Certified WaterSense® labeled or equivalent faucets, high-efficiency toilets, and water-conserving showerheads. As shown in Table 23, implementation of these water conservation features would result in a 30-percent reduction from BAU (sector specific) and an annual reduction in GHG emissions by 106 metric tons CO_2e.

Solid Waste Generation. The transport of solid waste from the site of generation to the landfill produces GHG emissions from the combustion of the fuel used to power the transport vehicle. As identified in Measure SW-1 in the 2010 CAPCOA report, implementation of waste management practices which reduce the amount of waste sent to landfills will reduce GHG emissions. Strategies to reduce solid waste include increasing recycling, reuse, and composting, and encouraging lifestyle choices and office practices which reduce waste generation.

Measure SW-2 in the 2010 CAPCOA report addresses recycling of construction materials. Recycling construction materials can contribute to GHG reductions. Recycling construction materials avoids sending construction waste to landfills. Wood-based materials decompose at landfills and contribute to methane emissions. Additionally, using local recycled construction materials reduces the emissions associated with transport of new construction materials that are typically manufactured further away from the Project site.

The Project would provide areas for recyclable materials collection, would recycle and/or salvage 50 percent of nonhazardous construction waste, and use building products that have at least a 10-percent recycle content. As shown in Table 23, implementation of waste management practices would result in a 5-percent reduction from BAU (sector specific) and an annual reduction in GHG emissions by 4.5 metric tons CO_2e.

Mixed-use Developments. As stated in Measure LU-3 in the 2010 CAPCOA report, placing different types of land uses near one another can decrease VMT since trips between land use types are shorter and may be accommodated by non-automobile modes of transport. A reduction in VMT would result in a reduction in GHG emissions. The Project would provide an integrated mix of land uses within the Project site, including residential, retail, and office uses and therefore, a reduction of VMT is expected to occur. Additionally, the project would include features to promote the use of alternative transportation modes, such as bicycle routes and paseos that would connect to existing off-site bicycle routes and sidewalks, a shuttle stop to encourage ridesharing, and a future transit stop that would accommodate a future planned rapid bus route in the project area (Route 473 as identified in the 2050 RTP). As shown in Table 23, the Proposed Project would result in a 6-percent reduction from BAU (sector specific) and an annual reduction in GHG emissions by 828.96 MT CO_2e.

Table 23
PROJECT DESIGN FEATURES FOR GHG EMISSIONS REDUCTIONS
(Metric Tons Per Year)

Category - Feature	Sector	2010 CAPCOA Report Measure	Percent Reduction from BAU (Sector Specific)	BAU CO_2e/ Sector	CO_2e Reduced
Building Energy Use – Energy efficient features	Natural Gas/Energy Use	BE-1	20%	7,863	1,572.60
Water Use – Water conservation features	Water Use Related Emissions	WUW-1	30%	480	105.90
Solid Waste Generation – Waste management practices	Municipal Solid Waste Generation	SW-1 and SW-2	5%	90	4.50
Mixed-use Developments – Reduced VMT	Transportation	LUT-3	6%	13,816	828.96
Subtotal – metric tons of CO_2e Reduced					**2,511.96**

Percent Reduction from BAU calculated based on the data from the CAPCOA's *Quantifying Greenhouse Gas Mitigation Measures.*

Summary of Greenhouse Gas Emissions Reduction

Accounting for the state reduction measures and Proposed Project design features, a total reduction of approximately 8,459 MT per year of CO_2e emissions would occur. As shown in Table 24, this equates to a 36.9-percent reduction in emissions below BAU levels for construction Scenarios 1 and 2, and 36.8 percent for construction Scenario 3.

Table 24
SUMMARY OF ESTIMATED TOTAL PROJECT GREENHOUSE GAS EMISSIONS WITH GHG REDUCTIONS

	Construction Scenario 1	Construction Scenario 2	Construction Scenario 3
BAU Total Project Emissions	22,896	22,895	22,964
State Measures Emissions Reductions	-5,947	-5,947	-5,947
Project Design Features Emissions Reductions	-2,55	-2,5110	-2,511
Total Reduced Emissions	14,526	14,437	14,506
Percent Reduction	36.9	36.9	36.8

Emissions of GHGs were quantified for both construction and operation of the Proposed Project. Operational emissions were calculated for existing conditions, and for both BAU conditions and conditions with considering GHG emission reduction strategies. Through consideration of pass-by trips, the mobile source emission regulatory framework, and RPS, emissions will be reduced for the Proposed Project to a level that is consistent with the goals of AB 32 (by at least 28.3 percent). Therefore, no significant GHG emissions impacts would occur as a result of the Project.

6.0 CUMULATIVE IMPACTS

In analyzing cumulative impacts from a Proposed Project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is listed as "non-attainment" for the State AAQS. A project that has a significant impact on air quality with regard to emissions of PM_{10}, NO_x and/or ROCs, as determined by the screening criteria outlined above, would have a significant cumulative effect. In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of screening levels identified above, and the project's contribution accounts for more than an insignificant proportion of the cumulative total emissions.

With regard to past and present development, the background ambient air quality, as measured at the monitoring stations maintained and operated by the SDAPCD, measures the concentrations of pollutants from existing sources. Past and present development impacts are therefore included in the background ambient air quality data.

With regard to cumulative impacts associated with ozone precursors, in general, provided a project is consistent with the governing General Plans, it has been accounted for in the RAQS, and would not cause a cumulatively significant impact on the ambient air quality for ozone.

The Project site is located in the SDAB, and as such, is located in an area where a regional air quality plan is being implemented. The Project site is designated Employment Center in the City of San Diego General Plan. The Proposed Project would alter the land use designations and would add mixed-use development encompassing a maximum of 1,857,440 gross sf consisting of 270,000 gross sf of commercial retail (all 270,000 sf comprises the gla), 535,600 gross sf of corporate office (515,000 sf of gla), approximately 21,840 gross sf of professional office (21,000 sf of gla), 100,000 gross sf consisting of a 150-room hotel, and 930,000 gross sf consisting of a maximum of 608 residential units. This change would increase the permitted number of building square footage and dwelling units from 510,000 sf under the existing General Plan to 1,857,440 gross sf of mixed use and residential development under the Proposed Project. This results in an increase of 26,961 ADT in comparison to the existing General Plan and Carmel Valley Community Plan. However, the provision of residential housing, office, professional office, and retail uses within the Project site would contribute to a greater balance of uses both on site and within the community as a whole, as it would provide additional choices for commercial and retail services, as well as provide employment opportunities in the retail and professional sectors.

SDAPCD relies to a certain degree on land use designations contained in general plan documents applicable to its jurisdiction. SDAPCD refers to the contents of approved general plans in order to forecast, inventory, and allocate regional emissions from land use and development-related sources. These emissions budgets are used in statewide air quality attainment planning efforts. As such, the Project is consistent with the regional air quality plan. Additionally, the Project involves the provision of additional employment generating uses within the North San Diego area that could reduce vehicle miles traveled in the region through the provision of employment generating uses closer to residential land uses. City approval of the proposed Community Plan Amendment to change the Project site's land use designation would eliminate the Project's potential conflicts with applicable air quality goals, objectives, and guidelines of the RAQS, and the impact is less than significant.

The TIA took into account traffic associated with future growth in the area in the near term and future evaluations. Based on the TIA, the LOS would not change at most affected intersections; thus, the cumulative traffic would not cause a CO "hot spot" to form due to cumulative traffic impacts.

As shown in the operational emissions evaluation above in Section 4.2, the emissions of PM_{10} would not exceed the daily threshold levels. Because of the regional nature of PM_{10} impacts, and because all of the past, present, and reasonably foreseeable future projects would not be undergoing construction at the same time as the Proposed Project, the PM_{10} impacts associated with operations would not be cumulatively significant.

It is difficult to estimate GHG impacts of other projects to assess the potential for cumulative impacts. Emissions for reasonably foreseeable future projects with related impacts are dependent on the individual projects and project design, and cannot be determined at this time. As discussed in Section 5.1.2, the Project applicant would be committed to incorporate feasible measures in the Scoping Plan that would be consistent with the goals of AB 32. Therefore, the Proposed Project would not result in a cumulatively considerable global climate change impact

7.0 CONCLUSIONS AND RECOMMENDATIONS

7.1 CRITERIA POLLUTANTS

In summary, the Proposed Project would result in emissions of criteria pollutants for both the construction and operational phases of the Project. The air quality impact analysis evaluated the potential for adverse impacts to the ambient air quality due to construction and operational emissions. Construction emissions would include emissions associated with fugitive dust, heavy construction equipment and construction worker commuting to and from the site. The emissions associated with construction would be below the significance thresholds for all criteria pollutants during construction. Construction air quality impacts would be temporary and less than significant.

Operational emissions would include those associated with area sources such as energy use, and with vehicles accessing the Project. Operational emissions would be below the daily threshold for all pollutants. As such, the operational emissions would result in a less than significant impact.

7.2 GREENHOUSE GASES

The main source of operational GHG emissions associated with the Proposed Project would be vehicular emissions. As discussed in Section 2.5.2, both the state of California and the federal government have adopted GHG emission reduction measures that are designed to reduce the amount of GHGs emitted from vehicles. The U.S. Congress has recently adopted legislation to require CAFE standards to reach 35 mpg by the year 2020; the default EMFAC2007 average miles per gallon for vehicles traveling at 45 miles per hour is 27 miles per gallon; other speeds are less efficient and miles per gallon decreases. Thus the new CAFE standards would lead to approximately 23 percent greater fuel efficiency, which would lower GHG emissions. These measures would contribute to reductions in emissions of GHG from vehicle travel. Also, the Proposed Project incorporates a number of design features, which have the effect of reducing energy consumption through energy and water efficient design, it would meet the projected growth and increased energy demand with greater energy conservation. Through consideration of pass-by trips, the mobile source emission regulatory framework, and RPS, emissions will be reduced for the Proposed Project to a level that is consistent with the goals of

AB 32 (by at least 28.3 percent). As a result, no significant GHG emissions impacts would occur as a result of the Project..

8.0 REFERENCES

American Petroleum Institute (API). 2004. *Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Natural Gas Industry*. February.

Association of Environmental Professionals. 2007. *Recommendations by the Association of Environmental Professionals (AEP) on How to Analyze Greenhouse Gas Emissions and Global Climate Change in CEQA Documents.* June.

California Air Resources Board (CARB). 2010. *Top 4 Measurements and Days Above the Standard* Available: <http:// http://www.arb.ca.gov/adam/welcome.html>. Accessed May 2010.

2009a. C*ARB Fact Sheet: Air Pollution and Health*. December 2. http://www.arb.ca.gov/research/health/fs/fs1/fs1.htm

2009b. Almanac Emissions Projection Data (published in 2009). California Air Resources Board. http://www.arb.ca.gov/app/emsinv/. Accessed May 2010.

2009c. California State Implementation Plans. California Air Resources Board. http://www.arb.ca.gov/planning/sip/sip.htm. Accessed May 2010.

2008a. *Ambient Air Quality Standards*. website: http://www.arb.ca.gov/aqs/aaqs2.pdf, November.

2008b. *Area Designations and Maps – 2008*. November.

2008c. *Climate Change Scoping Plan*. October.

2008d. *Preliminary Draft Staff Proposal: Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under California Environmental Quality Act.* October 24. http://www.arb.ca.gov/cc/localgov/ceqa/ceqa.htm. Accessed May 2010.

2007a. *Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit*. November 16.

2007b. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

2007c. Regulation for In-Use Off-Road Diesel-Fueled Fleets. California Air Resources Board. December 8, 2007.

California Air Resources Board (CARB) (cont.)

2007d. Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations, Final Regulation Order. California Air Resources Board. September 12, 2007.

2005. California Diesel Fuel Regulations. California Air Resources Board. October 27, 2005.

2000a. Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles. California Air Resources Board. October 2000.

2000b. Proposed Regulation for In-Use On-Road Diesel Vehicles, Staff Report: Initial Statement of Reasons for Proposed Rulemaking. California Air Resources Board. October 2000.

California Climate Action Registry General Reporting Protocol. 2009. Version 3.1. January.

California Department of Transportation. 1998. Caltrans ITS Transportation Project-Level Carbon Monoxide Protocol.

California Environmental Protection Agency (CalEPA). 2006. *Global Climate Change Background.* September.

California Energy Commission. 2007. *The Role of Land Use in Meeting California's Energy and Climate Change Goals.* CEC-600-2007-008-SD. June.

2006. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004.* December.

California Public Utility Commission (PUC). 2011. 33% Renewables Portfolio Standard. Available: http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/33implementation.htm

City of San Diego, Development Services Department. 2011a. *California Environmental Quality Act Significance Determination Thresholds*. January.

2011b. Water Supply Assessment and Verification Report – San Diego Corporate Center. August.

Dziegielewski, Benedykt; Kiefer, Jack C.; Opitz, Eva M.; Porter Gregory A.; Lantz, Glen L. 2000. *Commercial and Institutional End Uses of Water*. American Water Works Association Research Foundation.

Earth Systems Research Laboratory (ESRL) 2010. *Trends in Atmospheric Carbon Dioxide - Mauna Loa Observatory*. Global Monitoring Division. National Oceanic & Atmospheric Administration. http://www.esrl.noaa.gov/gmd/ccgg/trends/

Geotechnical Exploration Inc. 2008. Report of Geotechnical Investigation and Existing Fill Evaluation. San Diego Corporate Center Development Site. Prepared for Kilroy Realty Corporation. March.

Office of Planning and Research (OPR). 2008. *CEQA and Climate Change: Addressing Climate Change Through California Environmental Quality Act (CEQA) Review – Technical Advisory*. Available: < http://opr.ca.gov/index.php?a=ceqa/index.html>.

Rimpo & Associates 2007 *URBEMIS 2007 Model*, Version 9.2.4.

San Diego County Air Pollution Control District (SDCAPCD). 2009. *Air Quality Planning*. Available:< http://www. sdapcd.org/planning/plan.html>. Accessed in May 2010.

San Diego County Air Pollution Control District (SCAPCD). 2008a. *Five Year Air Quality Summary*. http://www.sdapcd.org/air/reports/smog.pdf Accessed in May 2010.

San Diego County Air Pollution Control District (SCAPCD). 2008b. *Fact Sheet: Attainment Status*. http://www.sdapcd.org/info/facts/attain.pdf. July.

San Diego County Air Pollution Control District (SDCAPCD). 2007. *Eight-Hour Ozone Attainment Plan for San Diego County*. May.

San Diego County Air Pollution Control District (SDCAPCD). 2004. *2004 Triennial Revision of the Regional Air Quality Strategy for San Diego County*. July 28.

San Diego County Air Pollution Control District (SDCAPCD), 2002. Ozone Redesignation Request and Maintenance Plan for San Diego County. December, 2002.

San Diego Association of Governments. 2008. *2030 Regional Growth Forecast Update: Process and Model Documentation*. April. http://www.sandag.org/uploads/publicationid/publicationid_833_3750.pdf.

South Coast Air Quality Management District (SCAQMD). 2009. *Air Quality Significance Thresholds*. Revised March 2009.
1993. *CEQA Air Quality Handbook*. April.

United Nations Framework Convention on Climate Change. 2006. *Greenhouse Gas Emissions Data, Predefined Queries, Annex I Parties – GHG total without LULUCF (land-use, land-use change and forestry).* http://unfccc.int/ghg_emissions_data/predefined_queries/items/3841.php.

United States Environmental Protection Agency (EPA). 2010a. Fact Sheet: Proposal to revise the National Ambient Air Quality Standards for Ozone. January 19. http://www.epa.gov/air/oaqps/eog/course422/ap7a.html#table

2010b. Fact Sheet: Final Revisions to the National Ambient Air Quality Standards for Nitrogen Dioxide. January 22. http://www.epa.gov/air/oaqps/eog/course422/ap7a.html#table

2010c. Monitor Values Report. <www.epa.gov/air/data/monvals.html> Accessed May 2010.

2006. *The U.S. Inventory of Greenhouse Gas Emissions and Sinks: Fast Facts.* www.epa.gov/climatechange/emissions/downloads06/06FastFacts.pdf.

2007. *The Effects of Air Pollutants – Health Effects* http://www.epa.gov/air/oaqps/eog/course422/ap7a.html#table

2004. Control of Emissions of Air Pollution From Nonroad Diesel Engines and Fuel. Environmental Protection Agency. Federal Register, Volume 69, Number 124. June 29, 2004.

University of California Davis (UCD). 1997. *Transportation Project-Level Carbon Monoxide Protocol* (*CO Protocol*). Institute of Transportation Studies. 1997.

University of San Diego School of Law Energy Policy Initiative Center (EPIC) Anders, S., D. De Haan, N. Silva-Send, S. Tanaka, and L. Tyner. *San Diego County Greenhouse Gas Inventory: An Inventory of Regional Emissions and Strategies to Achieve AB32 Targets*. September 2008. Available:<http://www.sandiego.edu/epic/ghginventory>.Accessed: May 2010.

Urban Systems Associates Inc. 2012. *Traffic Impact Analysis for One Paseo*. Prepared for the City of San Diego and Kilroy Realty. March 23.

Wilkinson, R., and Wolfe, G. 2005. *Energy Flow in the Water Cycle: A New Spaghetti Chart*. Presentation before the California Energy Commission, Integrated Energy Policy Report. Water- Energy Relationship Workshop. January 24.

Western Regional Climate Center. 2010. *Western U.S. Climate Historical Summaries*. http://www.wrcc.dri.edu/Climsum.html. Accessed May 2010.

Appendix A

FOR AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

EMISSION CALCULATIONS

10/12/2011 10:56:09 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1Construction.urb924

Project Name: One Paseo Scenario 1 Phase 1 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
2012 TOTALS (lbs/day mitigated)	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
2013 TOTALS (lbs/day unmitigated)	9.50	99.52	59.18	0.12	303.00	4.54	307.54	63.33	4.18	67.51	16,528.99
2013 TOTALS (lbs/day mitigated)	9.50	86.16	59.18	0.12	21.54	4.02	25.57	4.55	3.70	8.26	16,528.99
2014 TOTALS (lbs/day unmitigated)	128.92	30.48	56.90	0.05	0.26	2.10	2.36	0.09	1.92	2.01	8,319.63
2014 TOTALS (lbs/day mitigated)	79.77	20.40	56.90	0.05	0.26	1.64	1.90	0.09	1.50	1.59	8,319.63
2015 TOTALS (lbs/day unmitigated)	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
2015 TOTALS (lbs/day mitigated)	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
Mass Grading 12/17/2012-05/07/2013	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	5.16	74.51	25.79	0.12	0.45	2.79	3.24	0.15	2.57	2.72	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.94	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.23
Time Slice 1/1/2013-3/26/2013 Active Days: 61	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading 12/17/2012-05/07/2013	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 3/27/2013-5/7/2013 Active Days: 30	9.50	**99.52**	44.97	**0.12**	**303.00**	**4.54**	**307.54**	**63.33**	**4.18**	**67.51**	**16,528.99**
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Mass Grading 12/17/2012-05/07/2013	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 5/8/2013-6/18/2013 Active Days: 30	4.78	33.63	21.78	0.00	30.02	2.09	32.10	6.27	1.92	8.19	3,705.23
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Fine Grading 05/08/2013-06/18/2013	2.58	20.61	11.97	0.00	30.00	0.99	30.99	6.27	0.91	7.18	2,349.58
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 6/19/2013-8/14/2013 Active Days: 41	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Time Slice 8/15/2013-12/31/2013 Active Days: 99	6.51	32.60	**59.18**	0.05	0.25	2.29	2.54	0.09	2.09	2.18	8,171.47
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Building 08/15/2013-01/07/2015	4.30	19.58	49.38	0.05	0.24	1.19	1.43	0.09	1.08	1.17	6,815.82
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.33	3.80	3.58	0.01	0.04	0.15	0.19	0.01	0.14	0.15	1,028.00
Building Worker Trips	1.10	1.87	35.59	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,166.62

Time Slice 1/1/2014-4/25/2014 Active Days: 83	6.02	30.42	55.74	0.05	0.25	2.10	2.35	0.09	1.92	2.01	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 4/28/2014-9/29/2014 Active Days: 111	**128.92**	30.48	56.90	0.05	0.26	2.10	2.36	0.09	1.92	2.01	8,319.63
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Coating 04/28/2014-09/29/2014	122.90	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Architectural Coating	122.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68

Time Slice 9/30/2014-12/22/2014 Active Days: 60	6.02	30.42	55.74	0.05	0.25	2.10	2.35	0.09	1.92	2.01	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 12/23/2014-12/31/2014 Active Days: 7	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 1/1/2015-1/7/2015 Active Days: 5	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
Building 08/15/2013-01/07/2015	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.27	2.94	3.08	0.01	0.04	0.12	0.16	0.01	0.11	0.12	1,028.19
Building Worker Trips	0.91	1.57	30.43	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,169.03

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3185.23

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 7.31

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

10/12/2011 10:56:09 AM

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
Mass Grading 12/17/2012-05/07/2013	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.69	13.17	11.51	0.00	0.00	0.80	0.80	0.00	0.74	0.74	2,247.32
Mass Grading On Road Diesel	5.16	74.51	25.79	0.12	0.45	2.79	3.24	0.15	2.57	2.72	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.94	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.23

Time Slice 1/1/2013-3/26/2013 Active Days: 61	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading 12/17/2012-05/07/2013	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 3/27/2013-5/7/2013 Active Days: 30	9.50	86.16	44.97	**0.12**	21.54	4.02	25.57	4.55	3.70	8.26	**16,528.99**
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Mass Grading 12/17/2012-05/07/2013	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 5/8/2013-6/18/2013 Active Days: 30	4.78	20.28	21.78	0.00	2.11	1.57	3.67	0.44	1.44	1.88	3,705.23
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Fine Grading 05/08/2013-06/18/2013	2.58	12.38	11.97	0.00	2.10	0.74	2.84	0.44	0.68	1.12	2,349.58
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 6/19/2013-8/14/2013 Active Days: 41	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52

Time Slice 8/15/2013-12/31/2013 Active Days: 99	6.51	21.91	**59.18**	0.05	0.25	1.79	2.04	0.09	1.63	1.72	8,171.47
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Building 08/15/2013-01/07/2015	4.30	14.01	49.38	0.05	0.24	0.96	1.20	0.09	0.87	0.95	6,815.82
Building Off Road Diesel	2.88	8.34	10.20	0.00	0.00	0.70	0.70	0.00	0.64	0.64	1,621.20
Building Vendor Trips	0.33	3.80	3.58	0.01	0.04	0.15	0.19	0.01	0.14	0.15	1,028.00
Building Worker Trips	1.10	1.87	35.59	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,166.62
Time Slice 1/1/2014-4/25/2014 Active Days: 83	6.02	20.34	55.74	0.05	0.25	1.64	1.89	0.09	1.49	1.58	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95

10/12/2011 10:56:09 AM

Time Slice 4/28/2014-9/29/2014 Active Days: 111	79.77	20.40	56.90	0.05	0.26	1.64	1.90	0.09	1.50	1.59	8,319.63
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Coating 04/28/2014-09/29/2014	73.75	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Architectural Coating	73.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Time Slice 9/30/2014-12/22/2014 Active Days: 60	6.02	20.34	55.74	0.05	0.25	1.64	1.89	0.09	1.49	1.58	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95

Time Slice 12/23/2014-12/31/2014 Active Days: 7	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 1/1/2015-1/7/2015 Active Days: 5	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42
Building 08/15/2013-01/07/2015	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.27	2.94	3.08	0.01	0.04	0.12	0.16	0.01	0.11	0.12	1,028.19
Building Worker Trips	0.91	1.57	30.43	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,169.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1Construction.urb924

Project Name: One Paseo Scenario 1 Phase 1 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
2012 TOTALS (lbs/day mitigated)	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
2013 TOTALS (lbs/day unmitigated)	9.50	99.52	59.18	0.12	303.00	4.54	307.54	63.33	4.18	67.51	16,528.99
2013 TOTALS (lbs/day mitigated)	9.50	86.16	59.18	0.12	21.54	4.02	25.57	4.55	3.70	8.26	16,528.99
2014 TOTALS (lbs/day unmitigated)	128.92	30.48	56.90	0.05	0.26	2.10	2.36	0.09	1.92	2.01	8,319.63
2014 TOTALS (lbs/day mitigated)	79.77	20.40	56.90	0.05	0.26	1.64	1.90	0.09	1.50	1.59	8,319.63
2015 TOTALS (lbs/day unmitigated)	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
2015 TOTALS (lbs/day mitigated)	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
Mass Grading 12/17/2012-05/07/2013	7.88	96.50	38.25	0.12	302.98	3.87	306.85	63.33	3.56	66.89	15,173.30
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	5.16	74.51	25.79	0.12	0.45	2.79	3.24	0.15	2.57	2.72	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.94	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.23
Time Slice 1/1/2013-3/26/2013 Active Days: 61	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading 12/17/2012-05/07/2013	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 3/27/2013-5/7/2013 Active Days: 30	9.50	**99.52**	44.97	**0.12**	**303.00**	**4.54**	**307.54**	**63.33**	**4.18**	**67.51**	**16,528.99**
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Mass Grading 12/17/2012-05/07/2013	7.29	86.50	35.16	0.12	302.98	3.44	306.43	63.33	3.17	66.50	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 5/8/2013-6/18/2013 Active Days: 30	4.78	33.63	21.78	0.00	30.02	2.09	32.10	6.27	1.92	8.19	3,705.23
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Fine Grading 05/08/2013-06/18/2013	2.58	20.61	11.97	0.00	30.00	0.99	30.99	6.27	0.91	7.18	2,349.58
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	2.55	20.56	11.10	0.00	0.00	0.99	0.99	0.00	0.91	0.91	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 6/19/2013-8/14/2013 Active Days: 41	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Time Slice 8/15/2013-12/31/2013 Active Days: 99	6.51	32.60	**59.18**	0.05	0.25	2.29	2.54	0.09	2.09	2.18	8,171.47
Asphalt 03/27/2013-12/22/2014	2.20	13.03	9.81	0.00	0.01	1.10	1.11	0.00	1.01	1.01	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Building 08/15/2013-01/07/2015	4.30	19.58	49.38	0.05	0.24	1.19	1.43	0.09	1.08	1.17	6,815.82
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.33	3.80	3.58	0.01	0.04	0.15	0.19	0.01	0.14	0.15	1,028.00
Building Worker Trips	1.10	1.87	35.59	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,166.62

Time Slice 1/1/2014-4/25/2014 Active Days: 83	6.02	30.42	55.74	0.05	0.25	2.10	2.35	0.09	1.92	2.01	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 4/28/2014-9/29/2014 Active Days: 111	**128.92**	30.48	56.90	0.05	0.26	2.10	2.36	0.09	1.92	2.01	8,319.63
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Coating 04/28/2014-09/29/2014	122.90	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Architectural Coating	122.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68

Time Slice 9/30/2014-12/22/2014 Active Days: 60	6.02	30.42	55.74	0.05	0.25	2.10	2.35	0.09	1.92	2.01	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	12.38	9.61	0.00	0.01	1.03	1.04	0.00	0.95	0.95	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	12.21	7.96	0.00	0.00	1.02	1.02	0.00	0.94	0.94	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 12/23/2014-12/31/2014 Active Days: 7	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building 08/15/2013-01/07/2015	3.93	18.04	46.13	0.05	0.24	1.07	1.31	0.09	0.97	1.06	6,817.24
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 1/1/2015-1/7/2015 Active Days: 5	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
Building 08/15/2013-01/07/2015	3.59	16.54	43.14	0.05	0.24	0.99	1.23	0.09	0.90	0.98	6,818.42
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.27	2.94	3.08	0.01	0.04	0.12	0.16	0.01	0.11	0.12	1,028.19
Building Worker Trips	0.91	1.57	30.43	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,169.03

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3185.23

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 7.31

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
Mass Grading 12/17/2012-05/07/2013	7.88	87.73	38.25	0.12	21.53	3.60	25.13	4.55	3.31	7.86	15,173.30
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.69	13.17	11.51	0.00	0.00	0.80	0.80	0.00	0.74	0.74	2,247.32
Mass Grading On Road Diesel	5.16	74.51	25.79	0.12	0.45	2.79	3.24	0.15	2.57	2.72	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.94	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.23

Time Slice 1/1/2013-3/26/2013 Active Days: 61	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading 12/17/2012-05/07/2013	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 3/27/2013-5/7/2013 Active Days: 30	9.50	86.16	44.97	**0.12**	21.54	4.02	25.57	4.55	3.70	8.26	**16,528.99**
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Mass Grading 12/17/2012-05/07/2013	7.29	78.27	35.16	0.12	21.53	3.20	24.73	4.55	2.94	7.49	15,173.34
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Mass Grading On Road Diesel	4.71	65.89	23.19	0.12	0.45	2.46	2.90	0.15	2.26	2.41	12,823.76
Mass Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26

Time Slice 5/8/2013-6/18/2013 Active Days: 30	4.78	20.28	21.78	0.00	2.11	1.57	3.67	0.44	1.44	1.88	3,705.23
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Fine Grading 05/08/2013-06/18/2013	2.58	12.38	11.97	0.00	2.10	0.74	2.84	0.44	0.68	1.12	2,349.58
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	2.55	12.34	11.10	0.00	0.00	0.74	0.74	0.00	0.68	0.68	2,247.32
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.03	0.05	0.87	0.00	0.00	0.00	0.01	0.00	0.00	0.00	102.26
Time Slice 6/19/2013-8/14/2013 Active Days: 41	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52

Time Slice 8/15/2013-12/31/2013 Active Days: 99	6.51	21.91	**59.18**	0.05	0.25	1.79	2.04	0.09	1.63	1.72	8,171.47
Asphalt 03/27/2013-12/22/2014	2.20	7.89	9.81	0.00	0.01	0.83	0.84	0.00	0.76	0.76	1,355.65
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	7.70	8.03	0.00	0.00	0.82	0.82	0.00	0.75	0.75	1,131.92
Paving On Road Diesel	0.01	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.09	1.75	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.52
Building 08/15/2013-01/07/2015	4.30	14.01	49.38	0.05	0.24	0.96	1.20	0.09	0.87	0.95	6,815.82
Building Off Road Diesel	2.88	8.34	10.20	0.00	0.00	0.70	0.70	0.00	0.64	0.64	1,621.20
Building Vendor Trips	0.33	3.80	3.58	0.01	0.04	0.15	0.19	0.01	0.14	0.15	1,028.00
Building Worker Trips	1.10	1.87	35.59	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,166.62
Time Slice 1/1/2014-4/25/2014 Active Days: 83	6.02	20.34	55.74	0.05	0.25	1.64	1.89	0.09	1.49	1.58	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95

10/12/2011 10:56:45 AM

Time Slice 4/28/2014-9/29/2014 Active Days: 111	79.77	20.40	56.90	0.05	0.26	1.64	1.90	0.09	1.50	1.59	8,319.63
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Coating 04/28/2014-09/29/2014	73.75	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Architectural Coating	73.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.06	1.16	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.68
Time Slice 9/30/2014-12/22/2014 Active Days: 60	6.02	20.34	55.74	0.05	0.25	1.64	1.89	0.09	1.49	1.58	8,172.96
Asphalt 03/27/2013-12/22/2014	2.09	7.50	9.61	0.00	0.01	0.78	0.79	0.00	0.71	0.72	1,355.72
Paving Off-Gas	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.99	7.33	7.96	0.00	0.00	0.77	0.77	0.00	0.71	0.71	1,131.92
Paving On Road Diesel	0.01	0.09	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.22
Paving Worker Trips	0.05	0.08	1.62	0.00	0.01	0.01	0.02	0.00	0.00	0.01	204.58
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95

Time Slice 12/23/2014-12/31/2014 Active Days: 7	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building 08/15/2013-01/07/2015	3.93	12.85	46.13	0.05	0.24	0.86	1.10	0.09	0.78	0.87	6,817.24
Building Off Road Diesel	2.63	7.78	9.89	0.00	0.00	0.62	0.62	0.00	0.57	0.57	1,621.20
Building Vendor Trips	0.30	3.35	3.32	0.01	0.04	0.13	0.17	0.01	0.12	0.13	1,028.09
Building Worker Trips	1.00	1.72	32.92	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,167.95
Time Slice 1/1/2015-1/7/2015 Active Days: 5	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42
Building 08/15/2013-01/07/2015	3.59	11.73	43.14	0.05	0.24	0.80	1.04	0.09	0.72	0.81	6,818.42
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.27	2.94	3.08	0.01	0.04	0.12	0.16	0.01	0.11	0.12	1,028.19
Building Worker Trips	0.91	1.57	30.43	0.04	0.20	0.11	0.31	0.07	0.09	0.16	4,169.03

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:00:05 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase2Construction.urb924

Project Name: One Paseo Scenario 1 Phase 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2015 TOTALS (lbs/day unmitigated)	26.82	62.62	39.92	0.10	249.02	2.36	251.38	52.05	2.17	54.22	12,968.76
2015 TOTALS (lbs/day mitigated)	11.62	55.62	39.92	0.10	17.70	2.16	19.86	3.74	1.98	5.73	12,968.76
2016 TOTALS (lbs/day unmitigated)	24.17	14.87	26.96	0.03	0.16	0.84	1.00	0.06	0.77	0.83	4,885.84
2016 TOTALS (lbs/day mitigated)	9.62	10.40	26.96	0.03	0.16	0.68	0.84	0.06	0.61	0.67	4,885.84

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 1/22/2015-4/15/2015 Active Days: 60	5.50	**62.62**	26.42	**0.10**	**249.02**	**2.36**	**251.38**	**52.05**	**2.17**	**54.22**	**12,968.76**
Mass Grading 01/22/2015-04/15/2015	5.50	62.62	26.42	0.10	249.02	2.36	251.38	52.05	2.17	54.22	12,968.76
Mass Grading Dust	0.00	0.00	0.00	0.00	248.64	0.00	248.64	51.93	0.00	51.93	0.00
Mass Grading Off Road Diesel	2.26	17.50	10.40	0.00	0.00	0.81	0.81	0.00	0.74	0.74	2,247.32
Mass Grading On Road Diesel	3.23	45.07	15.37	0.10	0.37	1.55	1.92	0.12	1.42	1.55	10,628.66
Mass Grading Worker Trips	0.02	0.04	0.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.78
Time Slice 4/16/2015-9/30/2015 Active Days: 120	**26.82**	30.12	**39.92**	0.03	0.17	2.07	2.25	0.06	1.90	1.96	6,562.42
Asphalt 04/16/2015-09/30/2015	2.37	13.95	11.36	0.00	0.01	1.13	1.14	0.00	1.04	1.04	1,676.33
Paving Off-Gas	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.20	13.65	9.82	0.00	0.00	1.11	1.11	0.00	1.02	1.02	1,418.44
Paving On Road Diesel	0.01	0.21	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.13
Paving Worker Trips	0.05	0.09	1.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	208.75
Building 04/16/2015-07/11/2016	3.20	16.15	28.40	0.03	0.16	0.94	1.10	0.06	0.86	0.92	4,863.08
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	21.26	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Time Slice 10/1/2015-12/31/2015 Active Days: 66	24.45	16.16	28.56	0.03	0.16	0.95	1.11	0.06	0.86	0.92	4,886.09
Building 04/16/2015-07/11/2016	3.20	16.15	28.40	0.03	0.16	0.94	1.10	0.06	0.86	0.92	4,863.08
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	21.26	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 1/1/2016-7/11/2016 Active Days: 137	24.17	14.87	26.96	0.03	0.16	0.84	1.00	0.06	0.77	0.83	4,885.84
Building 04/16/2015-07/11/2016	2.91	14.86	26.81	0.03	0.16	0.84	1.00	0.06	0.77	0.82	4,862.83
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.24	2.73	2.49	0.01	0.04	0.10	0.14	0.01	0.09	0.11	958.71
Building Worker Trips	0.48	0.94	14.91	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,282.93
Coating 04/16/2015-10/16/2016	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 7/12/2016-10/14/2016 Active Days: 69	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Coating 04/16/2015-10/16/2016	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Phase Assumptions

Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

Total Acres Disturbed: 19.75

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1980 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2640

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

Acres to be Paved: 4.94

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

10/12/2011 11:00:05 AM

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/22/2015-4/15/2015 Active Days: 60	5.50	55.62	26.42	**0.10**	17.70	2.16	19.86	3.74	1.98	5.73	**12,968.76**
Mass Grading 01/22/2015-04/15/2015	5.50	55.62	26.42	0.10	17.70	2.16	19.86	3.74	1.98	5.73	12,968.76
Mass Grading Dust	0.00	0.00	0.00	0.00	17.32	0.00	17.32	3.62	0.00	3.62	0.00
Mass Grading Off Road Diesel	2.26	10.50	10.40	0.00	0.00	0.61	0.61	0.00	0.56	0.56	2,247.32
Mass Grading On Road Diesel	3.23	45.07	15.37	0.10	0.37	1.55	1.92	0.12	1.42	1.55	10,628.66
Mass Grading Worker Trips	0.02	0.04	0.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.78

Time Slice 4/16/2015-9/30/2015 Active Days: 120	11.62	19.84	**39.92**	0.03	0.17	1.60	1.78	0.06	1.47	1.53	6,562.42
Asphalt 04/16/2015-09/30/2015	2.37	8.49	11.36	0.00	0.01	0.85	0.86	0.00	0.78	0.78	1,676.33
Paving Off-Gas	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.20	8.19	9.82	0.00	0.00	0.84	0.84	0.00	0.77	0.77	1,418.44
Paving On Road Diesel	0.01	0.21	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.13
Paving Worker Trips	0.05	0.09	1.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	208.75
Building 04/16/2015-07/11/2016	3.20	11.34	28.40	0.03	0.16	0.75	0.91	0.06	0.68	0.74	4,863.08
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	6.06	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 10/1/2015-12/31/2015 Active Days: 66	9.25	11.35	28.56	0.03	0.16	0.75	0.91	0.06	0.69	0.74	4,886.09
Building 04/16/2015-07/11/2016	3.20	11.34	28.40	0.03	0.16	0.75	0.91	0.06	0.68	0.74	4,863.08
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	6.06	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Time Slice 1/1/2016-7/11/2016 Active Days: 137	9.62	10.40	26.96	0.03	0.16	0.68	0.84	0.06	0.61	0.67	4,885.84
Building 04/16/2015-07/11/2016	2.91	10.39	26.81	0.03	0.16	0.67	0.83	0.06	0.61	0.67	4,862.83
Building Off Road Diesel	2.19	6.71	9.40	0.00	0.00	0.51	0.51	0.00	0.46	0.46	1,621.20
Building Vendor Trips	0.24	2.73	2.49	0.01	0.04	0.10	0.14	0.01	0.09	0.11	958.71
Building Worker Trips	0.48	0.94	14.91	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,282.93
Coating 04/16/2015-10/16/2016	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 7/12/2016-10/14/2016 Active Days: 69	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Coating 04/16/2015-10/16/2016	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:01:27 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase2Construction.urb924

Project Name: One Paseo Scenario 1 Phase 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2015 TOTALS (lbs/day unmitigated)	26.82	62.62	39.92	0.10	249.02	2.36	251.38	52.05	2.17	54.22	12,968.76
2015 TOTALS (lbs/day mitigated)	11.62	55.62	39.92	0.10	17.70	2.16	19.86	3.74	1.98	5.73	12,968.76
2016 TOTALS (lbs/day unmitigated)	24.17	14.87	26.96	0.03	0.16	0.84	1.00	0.06	0.77	0.83	4,885.84
2016 TOTALS (lbs/day mitigated)	9.62	10.40	26.96	0.03	0.16	0.68	0.84	0.06	0.61	0.67	4,885.84

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 1/22/2015-4/15/2015 Active Days: 60	5.50	**62.62**	26.42	**0.10**	**249.02**	**2.36**	**251.38**	**52.05**	**2.17**	**54.22**	**12,968.76**
Mass Grading 01/22/2015-04/15/2015	5.50	62.62	26.42	0.10	249.02	2.36	251.38	52.05	2.17	54.22	12,968.76
Mass Grading Dust	0.00	0.00	0.00	0.00	248.64	0.00	248.64	51.93	0.00	51.93	0.00
Mass Grading Off Road Diesel	2.26	17.50	10.40	0.00	0.00	0.81	0.81	0.00	0.74	0.74	2,247.32
Mass Grading On Road Diesel	3.23	45.07	15.37	0.10	0.37	1.55	1.92	0.12	1.42	1.55	10,628.66
Mass Grading Worker Trips	0.02	0.04	0.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.78
Time Slice 4/16/2015-9/30/2015 Active Days: 120	**26.82**	30.12	**39.92**	0.03	0.17	2.07	2.25	0.06	1.90	1.96	6,562.42
Asphalt 04/16/2015-09/30/2015	2.37	13.95	11.36	0.00	0.01	1.13	1.14	0.00	1.04	1.04	1,676.33
Paving Off-Gas	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.20	13.65	9.82	0.00	0.00	1.11	1.11	0.00	1.02	1.02	1,418.44
Paving On Road Diesel	0.01	0.21	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.13
Paving Worker Trips	0.05	0.09	1.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	208.75
Building 04/16/2015-07/11/2016	3.20	16.15	28.40	0.03	0.16	0.94	1.10	0.06	0.86	0.92	4,863.08
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	21.26	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Time Slice 10/1/2015-12/31/2015 Active Days: 66	24.45	16.16	28.56	0.03	0.16	0.95	1.11	0.06	0.86	0.92	4,886.09
Building 04/16/2015-07/11/2016	3.20	16.15	28.40	0.03	0.16	0.94	1.10	0.06	0.86	0.92	4,863.08
Building Off Road Diesel	2.40	12.04	9.62	0.00	0.00	0.76	0.76	0.00	0.70	0.70	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	21.26	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 1/1/2016-7/11/2016 Active Days: 137	24.17	14.87	26.96	0.03	0.16	0.84	1.00	0.06	0.77	0.83	4,885.84
Building 04/16/2015-07/11/2016	2.91	14.86	26.81	0.03	0.16	0.84	1.00	0.06	0.77	0.82	4,862.83
Building Off Road Diesel	2.19	11.19	9.40	0.00	0.00	0.67	0.67	0.00	0.62	0.62	1,621.20
Building Vendor Trips	0.24	2.73	2.49	0.01	0.04	0.10	0.14	0.01	0.09	0.11	958.71
Building Worker Trips	0.48	0.94	14.91	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,282.93
Coating 04/16/2015-10/16/2016	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 7/12/2016-10/14/2016 Active Days: 69	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Coating 04/16/2015-10/16/2016	21.26	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	21.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Phase Assumptions

Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

Total Acres Disturbed: 19.75

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1980 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2640

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

Acres to be Paved: 4.94

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/22/2015-4/15/2015 Active Days: 60	5.50	55.62	26.42	**0.10**	17.70	2.16	19.86	3.74	1.98	5.73	**12,968.76**
Mass Grading 01/22/2015-04/15/2015	5.50	55.62	26.42	0.10	17.70	2.16	19.86	3.74	1.98	5.73	12,968.76
Mass Grading Dust	0.00	0.00	0.00	0.00	17.32	0.00	17.32	3.62	0.00	3.62	0.00
Mass Grading Off Road Diesel	2.26	10.50	10.40	0.00	0.00	0.61	0.61	0.00	0.56	0.56	2,247.32
Mass Grading On Road Diesel	3.23	45.07	15.37	0.10	0.37	1.55	1.92	0.12	1.42	1.55	10,628.66
Mass Grading Worker Trips	0.02	0.04	0.65	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.78

Time Slice 4/16/2015-9/30/2015 Active Days: 120	11.62	19.84	**39.92**	0.03	0.17	1.60	1.78	0.06	1.47	1.53	6,562.42
Asphalt 04/16/2015-09/30/2015	2.37	8.49	11.36	0.00	0.01	0.85	0.86	0.00	0.78	0.78	1,676.33
Paving Off-Gas	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.20	8.19	9.82	0.00	0.00	0.84	0.84	0.00	0.77	0.77	1,418.44
Paving On Road Diesel	0.01	0.21	0.07	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.13
Paving Worker Trips	0.05	0.09	1.47	0.00	0.01	0.01	0.02	0.00	0.00	0.01	208.75
Building 04/16/2015-07/11/2016	3.20	11.34	28.40	0.03	0.16	0.75	0.91	0.06	0.68	0.74	4,863.08
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	6.06	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 10/1/2015-12/31/2015 Active Days: 66	9.25	11.35	28.56	0.03	0.16	0.75	0.91	0.06	0.69	0.74	4,886.09
Building 04/16/2015-07/11/2016	3.20	11.34	28.40	0.03	0.16	0.75	0.91	0.06	0.68	0.74	4,863.08
Building Off Road Diesel	2.40	7.22	9.62	0.00	0.00	0.57	0.57	0.00	0.53	0.53	1,621.20
Building Vendor Trips	0.26	3.09	2.68	0.01	0.04	0.11	0.15	0.01	0.10	0.12	958.70
Building Worker Trips	0.53	1.02	16.09	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,283.19
Coating 04/16/2015-10/16/2016	6.06	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Time Slice 1/1/2016-7/11/2016 Active Days: 137	9.62	10.40	26.96	0.03	0.16	0.68	0.84	0.06	0.61	0.67	4,885.84
Building 04/16/2015-07/11/2016	2.91	10.39	26.81	0.03	0.16	0.67	0.83	0.06	0.61	0.67	4,862.83
Building Off Road Diesel	2.19	6.71	9.40	0.00	0.00	0.51	0.51	0.00	0.46	0.46	1,621.20
Building Vendor Trips	0.24	2.73	2.49	0.01	0.04	0.10	0.14	0.01	0.09	0.11	958.71
Building Worker Trips	0.48	0.94	14.91	0.02	0.12	0.07	0.19	0.04	0.05	0.10	2,282.93
Coating 04/16/2015-10/16/2016	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Time Slice 7/12/2016-10/14/2016 Active Days: 69	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Coating 04/16/2015-10/16/2016	6.71	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01
Architectural Coating	6.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	23.01

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:09:01 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase3Construction.urb924

Project Name: One Paseo Scenario 1 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (lbs/day unmitigated)	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
2016 TOTALS (lbs/day mitigated)	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
2017 TOTALS (lbs/day unmitigated)	36.52	70.66	44.39	0.13	293.74	3.05	296.79	61.41	2.80	64.21	17,521.30
2017 TOTALS (lbs/day mitigated)	7.38	60.71	44.39	0.13	20.93	2.68	23.61	4.43	2.46	6.89	17,521.30
2018 TOTALS (lbs/day unmitigated)	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
2018 TOTALS (lbs/day mitigated)	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
2019 TOTALS (lbs/day unmitigated)	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
2019 TOTALS (lbs/day mitigated)	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.13	16.07	10.09	0.00	0.00	0.75	0.75	0.00	0.69	0.69	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	**70.66**	35.57	**0.13**	**293.74**	**3.05**	**296.79**	**61.41**	**2.80**	**64.21**	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	26.59	**44.39**	0.05	0.27	1.69	1.97	0.10	1.54	1.64	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	**36.52**	16.17	35.64	0.05	0.26	0.87	1.14	0.09	0.79	0.88	7,030.50
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	33.43	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
Building 10/04/2017-06/11/2019	2.80	14.80	33.30	0.05	0.26	0.78	1.04	0.09	0.70	0.80	6,994.02
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	33.43	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
Building 10/04/2017-06/11/2019	2.56	13.60	31.40	0.05	0.26	0.69	0.95	0.09	0.62	0.72	6,993.78
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	33.43	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.13	9.64	10.09	0.00	0.00	0.57	0.57	0.00	0.52	0.52	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	60.71	35.57	**0.13**	20.93	2.68	23.61	4.43	2.46	6.89	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	18.35	**44.39**	0.05	0.27	1.34	1.61	0.10	1.22	1.32	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	4.25	12.00	35.64	0.05	0.26	0.72	0.99	0.09	0.65	0.75	7,030.50
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	1.16	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
Building 10/04/2017-06/11/2019	2.80	10.94	33.30	0.05	0.26	0.65	0.91	0.09	0.58	0.68	6,994.02
Building Off Road Diesel	1.78	5.79	9.01	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	13.09	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	13.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96
Building 10/04/2017-06/11/2019	2.56	10.01	31.40	0.05	0.26	0.58	0.84	0.09	0.52	0.61	6,993.78
Building Off Road Diesel	1.62	5.37	8.86	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	5.82	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:09:48 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase3Construction.urb924

Project Name: One Paseo Scenario 1 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (lbs/day unmitigated)	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
2016 TOTALS (lbs/day mitigated)	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
2017 TOTALS (lbs/day unmitigated)	36.52	70.66	44.39	0.13	293.74	3.05	296.79	61.41	2.80	64.21	17,521.30
2017 TOTALS (lbs/day mitigated)	7.38	60.71	44.39	0.13	20.93	2.68	23.61	4.43	2.46	6.89	17,521.30
2018 TOTALS (lbs/day unmitigated)	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
2018 TOTALS (lbs/day mitigated)	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
2019 TOTALS (lbs/day unmitigated)	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
2019 TOTALS (lbs/day mitigated)	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96

10/12/2011 11:09:48 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.13	16.07	10.09	0.00	0.00	0.75	0.75	0.00	0.69	0.69	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	70.66	35.57	0.13	293.74	3.05	296.79	61.41	2.80	64.21	17,521.30
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	26.59	**44.39**	0.05	0.27	1.69	1.97	0.10	1.54	1.64	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	**36.52**	16.17	35.64	0.05	0.26	0.87	1.14	0.09	0.79	0.88	7,030.50
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	33.43	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
Building 10/04/2017-06/11/2019	2.80	14.80	33.30	0.05	0.26	0.78	1.04	0.09	0.70	0.80	6,994.02
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	33.43	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
Building 10/04/2017-06/11/2019	2.56	13.60	31.40	0.05	0.26	0.69	0.95	0.09	0.62	0.72	6,993.78
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	33.43	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

10/12/2011 11:09:48 AM

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.13	9.64	10.09	0.00	0.00	0.57	0.57	0.00	0.52	0.52	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	60.71	35.57	**0.13**	20.93	2.68	23.61	4.43	2.46	6.89	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	18.35	**44.39**	0.05	0.27	1.34	1.61	0.10	1.22	1.32	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	4.25	12.00	35.64	0.05	0.26	0.72	0.99	0.09	0.65	0.75	7,030.50
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	1.16	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
Building 10/04/2017-06/11/2019	2.80	10.94	33.30	0.05	0.26	0.65	0.91	0.09	0.58	0.68	6,994.02
Building Off Road Diesel	1.78	5.79	9.01	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	13.09	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	13.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96
Building 10/04/2017-06/11/2019	2.56	10.01	31.40	0.05	0.26	0.58	0.84	0.09	0.52	0.61	6,993.78
Building Off Road Diesel	1.62	5.37	8.86	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	5.82	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

10/12/2011 11:09:48 AM

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 10:57:04 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1Construction.urb924

Project Name: One Paseo Scenario 1 Phase 1 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/12/2011 10:57:04 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.04	0.53	0.21	0.00	1.67	0.02	1.69	0.35	0.02	0.37	83.45
2012 TOTALS (tons/year mitigated)	0.04	0.48	0.21	0.00	0.12	0.02	0.14	0.03	0.02	0.04	83.45
Percent Reduction	0.00	9.10	0.00	0.00	92.89	6.93	91.81	92.81	6.93	88.25	0.00
2013 TOTALS (tons/year unmitigated)	0.80	6.52	5.20	0.01	14.25	0.34	14.59	2.98	0.31	3.29	1,198.58
2013 TOTALS (tons/year mitigated)	0.80	5.23	5.20	0.01	1.02	0.29	1.31	0.22	0.26	0.48	1,198.58
Percent Reduction	0.00	19.74	0.00	0.00	92.81	15.77	91.01	92.67	15.81	85.38	0.00
2014 TOTALS (tons/year unmitigated)	7.60	3.93	7.30	0.01	0.03	0.27	0.30	0.01	0.25	0.26	1,069.97
2014 TOTALS (tons/year mitigated)	4.87	2.63	7.30	0.01	0.03	0.21	0.24	0.01	0.19	0.20	1,069.97
Percent Reduction	35.89	33.02	0.00	0.00	0.00	21.95	19.54	0.00	22.11	21.09	0.00
2015 TOTALS (tons/year unmitigated)	0.01	0.04	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
2015 TOTALS (tons/year mitigated)	0.01	0.03	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
Percent Reduction	0.00	29.10	0.00	0.00	0.00	19.24	15.47	0.00	19.53	17.82	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2012	0.04	0.53	0.21	0.00	1.67	0.02	1.69	0.35	0.02	0.37	83.45
Mass Grading 12/17/2012-05/07/2013	0.04	0.53	0.21	0.00	1.67	0.02	1.69	0.35	0.02	0.37	83.45
Mass Grading Dust	0.00	0.00	0.00	0.00	1.66	0.00	1.66	0.35	0.00	0.35	0.00
Mass Grading Off Road Diesel	0.01	0.12	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	12.36
Mass Grading On Road Diesel	0.03	0.41	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.53
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56

2013	0.80	6.52	5.20	0.01	14.25	0.34	14.59	2.98	0.31	3.29	1,198.58
Mass Grading 12/17/2012-05/07/2013	0.33	3.94	1.60	0.01	13.79	0.16	13.94	2.88	0.14	3.03	690.39
Mass Grading Dust	0.00	0.00	0.00	0.00	13.77	0.00	13.77	2.87	0.00	2.87	0.00
Mass Grading Off Road Diesel	0.12	0.94	0.51	0.00	0.00	0.04	0.04	0.00	0.04	0.04	102.25
Mass Grading On Road Diesel	0.21	3.00	1.06	0.01	0.02	0.11	0.13	0.01	0.10	0.11	583.48
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.65
Asphalt 03/27/2013-12/22/2014	0.22	1.30	0.98	0.00	0.00	0.11	0.11	0.00	0.10	0.10	135.57
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.21	1.28	0.80	0.00	0.00	0.11	0.11	0.00	0.10	0.10	113.19
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92
Paving Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.45
Fine Grading 05/08/2013-06/18/2013	0.04	0.31	0.18	0.00	0.45	0.01	0.46	0.09	0.01	0.11	35.24
Fine Grading Dust	0.00	0.00	0.00	0.00	0.45	0.00	0.45	0.09	0.00	0.09	0.00
Fine Grading Off Road Diesel	0.04	0.31	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	33.71
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53
Building 08/15/2013-01/07/2015	0.21	0.97	2.44	0.00	0.01	0.06	0.07	0.00	0.05	0.06	337.38
Building Off Road Diesel	0.14	0.69	0.51	0.00	0.00	0.05	0.05	0.00	0.04	0.04	80.25
Building Vendor Trips	0.02	0.19	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.89
Building Worker Trips	0.05	0.09	1.76	0.00	0.01	0.01	0.02	0.00	0.00	0.01	206.25

2014	7.60	3.93	7.30	0.01	0.03	0.27	0.30	0.01	0.25	0.26	1,069.97
Asphalt 03/27/2013-12/22/2014	0.27	1.57	1.22	0.00	0.00	0.13	0.13	0.00	0.12	0.12	172.18
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.25	1.55	1.01	0.00	0.00	0.13	0.13	0.00	0.12	0.12	143.75
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44
Paving Worker Trips	0.01	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.98
Building 08/15/2013-01/07/2015	0.51	2.35	6.02	0.01	0.03	0.14	0.17	0.01	0.13	0.14	889.65
Building Off Road Diesel	0.34	1.69	1.29	0.00	0.00	0.11	0.11	0.00	0.10	0.10	211.57
Building Vendor Trips	0.04	0.44	0.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	134.17
Building Worker Trips	0.13	0.22	4.30	0.01	0.03	0.01	0.04	0.01	0.01	0.02	543.92
Coating 04/28/2014-09/29/2014	6.82	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.14
Architectural Coating	6.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.14
2015	0.01	0.04	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
Building 08/15/2013-01/07/2015	0.01	0.04	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
Building Off Road Diesel	0.01	0.03	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.42

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3185.23

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 7.31

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.04	0.48	0.21	0.00	0.12	0.02	0.14	0.03	0.02	0.04	83.45
Mass Grading 12/17/2012-05/07/2013	0.04	0.48	0.21	0.00	0.12	0.02	0.14	0.03	0.02	0.04	83.45
Mass Grading Dust	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.01	0.07	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.36
Mass Grading On Road Diesel	0.03	0.41	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.53
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.56
2013	0.80	5.23	5.20	0.01	1.02	0.29	1.31	0.22	0.26	0.48	1,198.58

Mass Grading 12/17/2012-05/07/2013	0.33	3.56	1.60	0.01	0.98	0.15	1.13	0.21	0.13	0.34	690.39
Mass Grading Dust	0.00	0.00	0.00	0.00	0.96	0.00	0.96	0.20	0.00	0.20	0.00
Mass Grading Off Road Diesel	0.12	0.56	0.51	0.00	0.00	0.03	0.03	0.00	0.03	0.03	102.25
Mass Grading On Road Diesel	0.21	3.00	1.06	0.01	0.02	0.11	0.13	0.01	0.10	0.11	583.48
Mass Grading Worker Trips	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.65
Asphalt 03/27/2013-12/22/2014	0.22	0.79	0.98	0.00	0.00	0.08	0.08	0.00	0.08	0.08	135.57
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.21	0.77	0.80	0.00	0.00	0.08	0.08	0.00	0.08	0.08	113.19
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.92
Paving Worker Trips	0.01	0.01	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.45
Fine Grading 05/08/2013-06/18/2013	0.04	0.19	0.18	0.00	0.03	0.01	0.04	0.01	0.01	0.02	35.24
Fine Grading Dust	0.00	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.01	0.00
Fine Grading Off Road Diesel	0.04	0.19	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	33.71
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53
Building 08/15/2013-01/07/2015	0.21	0.69	2.44	0.00	0.01	0.05	0.06	0.00	0.04	0.05	337.38
Building Off Road Diesel	0.14	0.41	0.51	0.00	0.00	0.03	0.03	0.00	0.03	0.03	80.25
Building Vendor Trips	0.02	0.19	0.18	0.00	0.00	0.01	0.01	0.00	0.01	0.01	50.89
Building Worker Trips	0.05	0.09	1.76	0.00	0.01	0.01	0.02	0.00	0.00	0.01	206.25

2014	4.87	2.63	7.30	0.01	0.03	0.21	0.24	0.01	0.19	0.20	1,069.97
Asphalt 03/27/2013-12/22/2014	0.27	0.95	1.22	0.00	0.00	0.10	0.10	0.00	0.09	0.09	172.18
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.25	0.93	1.01	0.00	0.00	0.10	0.10	0.00	0.09	0.09	143.75
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.44
Paving Worker Trips	0.01	0.01	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	25.98
Building 08/15/2013-01/07/2015	0.51	1.68	6.02	0.01	0.03	0.11	0.14	0.01	0.10	0.11	889.65
Building Off Road Diesel	0.34	1.02	1.29	0.00	0.00	0.08	0.08	0.00	0.07	0.07	211.57
Building Vendor Trips	0.04	0.44	0.43	0.00	0.00	0.02	0.02	0.00	0.02	0.02	134.17
Building Worker Trips	0.13	0.22	4.30	0.01	0.03	0.01	0.04	0.01	0.01	0.02	543.92
Coating 04/28/2014-09/29/2014	4.09	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.14
Architectural Coating	4.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.14
2015	0.01	0.03	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
Building 08/15/2013-01/07/2015	0.01	0.03	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.05
Building Off Road Diesel	0.01	0.02	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.05
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.57
Building Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.42

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 6/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 5/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

10/12/2011 10:57:04 AM

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:01:43 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase2Construction.urb924

Project Name: One Paseo Scenario 1 Phase 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2015 TOTALS (tons/year unmitigated)	2.58	4.22	4.13	0.01	7.49	0.23	7.71	1.57	0.21	1.77	944.05
2015 TOTALS (tons/year mitigated)	1.17	3.23	4.13	0.01	0.55	0.19	0.73	0.12	0.17	0.29	944.05
Percent Reduction	54.77	23.36	0.00	0.00	92.70	17.90	90.50	92.48	17.98	83.78	0.00
2016 TOTALS (tons/year unmitigated)	2.39	1.02	1.85	0.00	0.01	0.06	0.07	0.00	0.05	0.06	335.47
2016 TOTALS (tons/year mitigated)	0.89	0.71	1.85	0.00	0.01	0.05	0.06	0.00	0.04	0.05	335.47
Percent Reduction	62.74	30.09	0.00	0.00	0.00	19.95	16.76	0.00	20.18	18.77	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2015	2.58	4.22	4.13	0.01	7.49	0.23	7.71	1.57	0.21	1.77	944.05
Mass Grading 01/22/2015-04/15/2015	0.17	1.88	0.79	0.00	7.47	0.07	7.54	1.56	0.07	1.63	389.06
Mass Grading Dust	0.00	0.00	0.00	0.00	7.46	0.00	7.46	1.56	0.00	1.56	0.00
Mass Grading Off Road Diesel	0.07	0.53	0.31	0.00	0.00	0.02	0.02	0.00	0.02	0.02	67.42
Mass Grading On Road Diesel	0.10	1.35	0.46	0.00	0.01	0.05	0.06	0.00	0.04	0.05	318.86
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Asphalt 04/16/2015-09/30/2015	0.14	0.84	0.68	0.00	0.00	0.07	0.07	0.00	0.06	0.06	100.58
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.13	0.82	0.59	0.00	0.00	0.07	0.07	0.00	0.06	0.06	85.11
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Paving Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.53
Building 04/16/2015-07/11/2016	0.30	1.50	2.64	0.00	0.01	0.09	0.10	0.01	0.08	0.09	452.27
Building Off Road Diesel	0.22	1.12	0.89	0.00	0.00	0.07	0.07	0.00	0.07	0.07	150.77
Building Vendor Trips	0.02	0.29	0.25	0.00	0.00	0.01	0.01	0.00	0.01	0.01	89.16
Building Worker Trips	0.05	0.10	1.50	0.00	0.01	0.01	0.02	0.00	0.01	0.01	212.34
Coating 04/16/2015-10/16/2016	1.98	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Architectural Coating	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14

2016	2.39	1.02	1.85	0.00	0.01	0.06	0.07	0.00	0.05	0.06	335.47
Building 04/16/2015-07/11/2016	0.20	1.02	1.84	0.00	0.01	0.06	0.07	0.00	0.05	0.06	333.10
Building Off Road Diesel	0.15	0.77	0.64	0.00	0.00	0.05	0.05	0.00	0.04	0.04	111.05
Building Vendor Trips	0.02	0.19	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	65.67
Building Worker Trips	0.03	0.06	1.02	0.00	0.01	0.00	0.01	0.00	0.00	0.01	156.38
Coating 04/16/2015-10/16/2016	2.19	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37
Architectural Coating	2.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37

Phase Assumptions

Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

Total Acres Disturbed: 19.75

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 1980 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2640

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

Acres to be Paved: 4.94

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2015	1.17	3.23	4.13	0.01	0.55	0.19	0.73	0.12	0.17	0.29	944.05
Mass Grading 01/22/2015-04/15/2015	0.17	1.67	0.79	0.00	0.53	0.06	0.60	0.11	0.06	0.17	389.06
Mass Grading Dust	0.00	0.00	0.00	0.00	0.52	0.00	0.52	0.11	0.00	0.11	0.00
Mass Grading Off Road Diesel	0.07	0.32	0.31	0.00	0.00	0.02	0.02	0.00	0.02	0.02	67.42
Mass Grading On Road Diesel	0.10	1.35	0.46	0.00	0.01	0.05	0.06	0.00	0.04	0.05	318.86
Mass Grading Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.78
Asphalt 04/16/2015-09/30/2015	0.14	0.51	0.68	0.00	0.00	0.05	0.05	0.00	0.05	0.05	100.58
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.13	0.49	0.59	0.00	0.00	0.05	0.05	0.00	0.05	0.05	85.11
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.95
Paving Worker Trips	0.00	0.01	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.53
Building 04/16/2015-07/11/2016	0.30	1.05	2.64	0.00	0.01	0.07	0.08	0.01	0.06	0.07	452.27
Building Off Road Diesel	0.22	0.67	0.89	0.00	0.00	0.05	0.05	0.00	0.05	0.05	150.77
Building Vendor Trips	0.02	0.29	0.25	0.00	0.00	0.01	0.01	0.00	0.01	0.01	89.16
Building Worker Trips	0.05	0.10	1.50	0.00	0.01	0.01	0.02	0.00	0.01	0.01	212.34
Coating 04/16/2015-10/16/2016	0.56	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14
Architectural Coating	0.56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.14

2016	0.89	0.71	1.85	0.00	0.01	0.05	0.06	0.00	0.04	0.05	335.47
Building 04/16/2015-07/11/2016	0.20	0.71	1.84	0.00	0.01	0.05	0.06	0.00	0.04	0.05	333.10
Building Off Road Diesel	0.15	0.46	0.64	0.00	0.00	0.03	0.03	0.00	0.03	0.03	111.05
Building Vendor Trips	0.02	0.19	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	65.67
Building Worker Trips	0.03	0.06	1.02	0.00	0.01	0.00	0.01	0.00	0.00	0.01	156.38
Coating 04/16/2015-10/16/2016	0.69	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37
Architectural Coating	0.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 1/22/2015 - 4/15/2015 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 4/16/2015 - 9/30/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 4/16/2015 - 7/11/2016 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/16/2015 - 10/16/2016 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:09:59 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase3Construction.urb924

Project Name: One Paseo Scenario 1 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/12/2011 11:09:59 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (tons/year unmitigated)	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
2016 TOTALS (tons/year mitigated)	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Percent Reduction	0.00	9.50	0.00	0.00	92.88	7.49	92.15	92.79	7.49	89.69	0.00
2017 TOTALS (tons/year unmitigated)	0.71	2.09	2.21	0.00	3.09	0.13	3.22	0.65	0.11	0.76	515.06
2017 TOTALS (tons/year mitigated)	0.34	1.53	2.21	0.00	0.23	0.10	0.33	0.05	0.09	0.14	515.06
Percent Reduction	52.55	26.96	0.00	0.00	92.60	19.84	89.76	92.31	19.92	81.41	0.00
2018 TOTALS (tons/year unmitigated)	4.73	1.93	4.37	0.01	0.03	0.10	0.14	0.01	0.09	0.10	917.44
2018 TOTALS (tons/year mitigated)	2.07	1.43	4.37	0.01	0.03	0.08	0.12	0.01	0.08	0.09	917.44
Percent Reduction	56.14	26.07	0.00	0.00	0.00	16.76	12.52	0.00	17.08	15.07	0.00
2019 TOTALS (tons/year unmitigated)	2.09	0.79	1.83	0.00	0.02	0.04	0.06	0.01	0.04	0.04	407.74
2019 TOTALS (tons/year mitigated)	0.49	0.58	1.83	0.00	0.02	0.03	0.05	0.01	0.03	0.04	407.74
Percent Reduction	76.72	26.33	0.00	0.00	0.00	16.22	11.75	0.00	16.57	14.41	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2016	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
Mass Grading 11/15/2016-01/30/2017	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
Mass Grading Dust	0.00	0.00	0.00	0.00	4.99	0.00	4.99	1.04	0.00	1.04	0.00
Mass Grading Off Road Diesel	0.04	0.27	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.20
Mass Grading On Road Diesel	0.07	0.88	0.31	0.00	0.01	0.03	0.04	0.00	0.03	0.03	234.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58

2017	0.71	2.09	2.21	0.00	3.09	0.13	3.22	0.65	0.11	0.76	515.06
Mass Grading 11/15/2016-01/30/2017	0.06	0.63	0.28	0.00	3.08	0.02	3.11	0.64	0.02	0.67	169.58
Mass Grading Dust	0.00	0.00	0.00	0.00	3.08	0.00	3.08	0.64	0.00	0.64	0.00
Mass Grading Off Road Diesel	0.02	0.15	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	23.60
Mass Grading On Road Diesel	0.04	0.48	0.17	0.00	0.01	0.02	0.02	0.00	0.01	0.02	145.01
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
Asphalt 01/29/2017-10/10/2017	0.17	0.95	0.82	0.00	0.00	0.07	0.08	0.00	0.07	0.07	124.74
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.15	0.93	0.71	0.00	0.00	0.07	0.07	0.00	0.07	0.07	103.00
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.88
Building 10/04/2017-06/11/2019	0.10	0.51	1.12	0.00	0.01	0.03	0.04	0.00	0.02	0.03	220.32
Building Off Road Diesel	0.06	0.33	0.29	0.00	0.00	0.02	0.02	0.00	0.02	0.02	51.07
Building Vendor Trips	0.01	0.14	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.01	54.30
Building Worker Trips	0.02	0.04	0.69	0.00	0.01	0.00	0.01	0.00	0.00	0.00	114.96
Coating 11/29/2017-06/11/2019	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Architectural Coating	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42

2018	4.73	1.93	4.37	0.01	0.03	0.10	0.14	0.01	0.09	0.10	917.44
Building 10/04/2017-06/11/2019	0.37	1.93	4.35	0.01	0.03	0.10	0.14	0.01	0.09	0.10	912.72
Building Off Road Diesel	0.23	1.26	1.18	0.00	0.00	0.07	0.07	0.00	0.06	0.06	211.57
Building Vendor Trips	0.05	0.51	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	224.95
Building Worker Trips	0.08	0.16	2.66	0.00	0.03	0.01	0.04	0.01	0.01	0.02	476.21
Coating 11/29/2017-06/11/2019	4.36	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
Architectural Coating	4.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
2019	2.09	0.79	1.83	0.00	0.02	0.04	0.06	0.01	0.04	0.04	407.74
Building 10/04/2017-06/11/2019	0.15	0.79	1.82	0.00	0.02	0.04	0.06	0.01	0.04	0.04	405.64
Building Off Road Diesel	0.09	0.52	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.02	94.03
Building Vendor Trips	0.02	0.20	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	99.98
Building Worker Trips	0.03	0.07	1.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	211.63
Coating 11/29/2017-06/11/2019	1.94	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10
Architectural Coating	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Mass Grading 11/15/2016-01/30/2017	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Mass Grading Dust	0.00	0.00	0.00	0.00	0.35	0.00	0.35	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.04	0.16	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.20
Mass Grading On Road Diesel	0.07	0.88	0.31	0.00	0.01	0.03	0.04	0.00	0.03	0.03	234.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58

2017	0.34	1.53	2.21	0.00	0.23	0.10	0.33	0.05	0.09	0.14	515.06
Mass Grading 11/15/2016-01/30/2017	0.06	0.57	0.28	0.00	0.22	0.02	0.24	0.05	0.02	0.07	169.58
Mass Grading Dust	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.02	0.09	0.10	0.00	0.00	0.01	0.01	0.00	0.00	0.00	23.60
Mass Grading On Road Diesel	0.04	0.48	0.17	0.00	0.01	0.02	0.02	0.00	0.01	0.02	145.01
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
Asphalt 01/29/2017-10/10/2017	0.17	0.58	0.82	0.00	0.00	0.06	0.06	0.00	0.05	0.05	124.74
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.15	0.56	0.71	0.00	0.00	0.06	0.06	0.00	0.05	0.05	103.00
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.88
Building 10/04/2017-06/11/2019	0.10	0.38	1.12	0.00	0.01	0.02	0.03	0.00	0.02	0.02	220.32
Building Off Road Diesel	0.06	0.20	0.29	0.00	0.00	0.01	0.01	0.00	0.01	0.01	51.07
Building Vendor Trips	0.01	0.14	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.01	54.30
Building Worker Trips	0.02	0.04	0.69	0.00	0.01	0.00	0.01	0.00	0.00	0.00	114.96
Coating 11/29/2017-06/11/2019	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42

2018	2.07	1.43	4.37	0.01	0.03	0.08	0.12	0.01	0.08	0.09	917.44
Building 10/04/2017-06/11/2019	0.37	1.43	4.35	0.01	0.03	0.08	0.12	0.01	0.08	0.09	912.72
Building Off Road Diesel	0.23	0.76	1.18	0.00	0.00	0.05	0.05	0.00	0.05	0.05	211.57
Building Vendor Trips	0.05	0.51	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	224.95
Building Worker Trips	0.08	0.16	2.66	0.00	0.03	0.01	0.04	0.01	0.01	0.02	476.21
Coating 11/29/2017-06/11/2019	1.71	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
Architectural Coating	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
2019	0.49	0.58	1.83	0.00	0.02	0.03	0.05	0.01	0.03	0.04	407.74
Building 10/04/2017-06/11/2019	0.15	0.58	1.82	0.00	0.02	0.03	0.05	0.01	0.03	0.04	405.64
Building Off Road Diesel	0.09	0.31	0.51	0.00	0.00	0.02	0.02	0.00	0.02	0.02	94.03
Building Vendor Trips	0.02	0.20	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	99.98
Building Worker Trips	0.03	0.07	1.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	211.63
Coating 11/29/2017-06/11/2019	0.34	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10
Architectural Coating	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:18:48 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase1-2Construction.urb924

Project Name: One Paseo Scenario 2 Phase 1 and 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
2012 TOTALS (lbs/day mitigated)	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
2013 TOTALS (lbs/day unmitigated)	16.36	144.98	114.69	0.09	332.87	7.13	340.00	69.56	6.56	76.12	19,664.90
2013 TOTALS (lbs/day mitigated)	16.36	105.68	114.69	0.09	23.51	5.78	29.29	4.95	5.32	10.27	19,664.90
2014 TOTALS (lbs/day unmitigated)	187.55	52.46	83.62	0.08	0.38	3.19	3.57	0.14	2.91	3.05	13,327.74
2014 TOTALS (lbs/day mitigated)	116.16	35.02	83.62	0.08	0.38	2.49	2.87	0.14	2.27	2.41	13,327.74
2015 TOTALS (lbs/day unmitigated)	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
2015 TOTALS (lbs/day mitigated)	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
Mass Grading 12/17/2012-07/07/2013	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.90	39.51	21.74	0.00	0.00	1.99	1.99	0.00	1.83	1.83	3,954.75
Mass Grading On Road Diesel	3.63	52.41	18.14	0.08	0.32	1.96	2.28	0.10	1.81	1.91	9,020.85
Mass Grading Worker Trips	0.05	0.09	1.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.89
Time Slice 1/1/2013-3/26/2013 Active Days: 61	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

10/12/2011 11:18:48 AM

Time Slice 3/27/2013-5/7/2013 Active Days: 30	10.52	98.44	49.02	0.09	302.86	4.86	307.72	63.29	4.47	67.76	14,583.94
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 5/8/2013-7/5/2013 Active Days: 43	16.36	**144.98**	76.77	**0.09**	**332.87**	**7.13**	**340.00**	**69.56**	**6.56**	**76.12**	**19,664.90**
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

10/12/2011 11:18:48 AM

Time Slice 7/8/2013-8/14/2013 Active Days: 28	8.35	61.44	37.98	0.00	30.02	3.56	33.58	6.27	3.27	9.54	6,510.35
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/15/2013-8/16/2013 Active Days: 2	15.56	103.21	**<u>114.69</u>**	0.08	30.38	5.78	36.16	6.40	5.30	11.70	18,193.52
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	41.77	76.71	0.08	0.36	2.22	2.58	0.13	2.02	2.15	11,683.16
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/19/2013-12/31/2013 Active Days: 97	9.71	56.67	86.94	0.08	0.37	3.51	3.88	0.13	3.21	3.34	13,112.55
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	41.77	76.71	0.08	0.36	2.22	2.58	0.13	2.02	2.15	11,683.16
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Time Slice 1/1/2014-4/25/2014 Active Days: 83	9.01	52.37	81.93	0.08	0.37	3.18	3.55	0.13	2.91	3.04	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 4/28/2014-9/29/2014 Active Days: 111	**187.55**	52.46	83.62	0.08	0.38	3.19	3.57	0.14	2.91	3.05	13,327.74
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Coating 04/28/2014-09/29/2014	178.54	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Architectural Coating	178.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Time Slice 9/30/2014-12/22/2014 Active Days: 60	9.01	52.37	81.93	0.08	0.37	3.18	3.55	0.13	2.91	3.04	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 12/23/2014-12/31/2014 Active Days: 7	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Time Slice 1/1/2015-1/7/2015 Active Days: 5	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
Building 08/15/2013-01/07/2015	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.49	5.36	5.46	0.02	0.07	0.21	0.28	0.02	0.19	0.22	1,852.88
Building Worker Trips	1.32	2.27	44.00	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,027.85

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2240.64

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 11.09

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
Mass Grading 12/17/2012-07/07/2013	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.90	23.71	21.74	0.00	0.00	1.50	1.50	0.00	1.38	1.38	3,954.75
Mass Grading On Road Diesel	3.63	52.41	18.14	0.08	0.32	1.96	2.28	0.10	1.81	1.91	9,020.85
Mass Grading Worker Trips	0.05	0.09	1.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.89
Time Slice 1/1/2013-3/26/2013 Active Days: 61	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 3/27/2013-5/7/2013 Active Days: 30	10.52	77.72	49.02	0.09	21.41	4.08	25.49	4.51	3.75	8.26	14,583.94
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 5/8/2013-7/5/2013 Active Days: 43	16.36	105.68	76.77	**0.09**	23.51	5.78	29.29	4.95	5.32	10.27	**19,664.90**
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 7/8/2013-8/14/2013 Active Days: 28	8.35	36.98	37.98	0.00	2.11	2.67	4.78	0.44	2.46	2.90	6,510.35
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/15/2013-8/16/2013 Active Days: 2	15.56	65.89	**114.69**	0.08	2.47	4.45	6.91	0.57	4.07	4.64	18,193.52
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	28.91	76.71	0.08	0.36	1.77	2.14	0.13	1.61	1.74	11,683.16
Building Off Road Diesel	5.03	19.28	18.90	0.00	0.00	1.34	1.34	0.00	1.23	1.23	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/19/2013-12/31/2013 Active Days: 97	9.71	37.94	86.94	0.08	0.37	2.74	3.11	0.13	2.50	2.63	13,112.55
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	28.91	76.71	0.08	0.36	1.77	2.14	0.13	1.61	1.74	11,683.16
Building Off Road Diesel	5.03	19.28	18.90	0.00	0.00	1.34	1.34	0.00	1.23	1.23	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Time Slice 1/1/2014-4/25/2014 Active Days: 83	9.01	34.93	81.93	0.08	0.37	2.49	2.86	0.13	2.27	2.40	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 4/28/2014-9/29/2014 Active Days: 111	116.16	35.02	83.62	0.08	0.38	2.49	2.87	0.14	2.27	2.41	13,327.74
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Coating 04/28/2014-09/29/2014	107.14	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Architectural Coating	107.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Time Slice 9/30/2014-12/22/2014 Active Days: 60	9.01	34.93	81.93	0.08	0.37	2.49	2.86	0.13	2.27	2.40	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 12/23/2014-12/31/2014 Active Days: 7	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Time Slice 1/1/2015-1/7/2015 Active Days: 5	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97
Building 08/15/2013-01/07/2015	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97
Building Off Road Diesel	4.29	16.32	17.92	0.00	0.00	1.11	1.11	0.00	1.03	1.03	3,806.24
Building Vendor Trips	0.49	5.36	5.46	0.02	0.07	0.21	0.28	0.02	0.19	0.22	1,852.88
Building Worker Trips	1.32	2.27	44.00	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,027.85

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Other Material Handling Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Other Material Handling Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:19:23 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase1-2Construction.urb924

Project Name: One Paseo Scenario 2 Phase 1 and 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
2012 TOTALS (lbs/day mitigated)	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
2013 TOTALS (lbs/day unmitigated)	16.36	144.98	114.69	0.09	332.87	7.13	340.00	69.56	6.56	76.12	19,664.90
2013 TOTALS (lbs/day mitigated)	16.36	105.68	114.69	0.09	23.51	5.78	29.29	4.95	5.32	10.27	19,664.90
2014 TOTALS (lbs/day unmitigated)	187.55	52.46	83.62	0.08	0.38	3.19	3.57	0.14	2.91	3.05	13,327.74
2014 TOTALS (lbs/day mitigated)	116.16	35.02	83.62	0.08	0.38	2.49	2.87	0.14	2.27	2.41	13,327.74
2015 TOTALS (lbs/day unmitigated)	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
2015 TOTALS (lbs/day mitigated)	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
Mass Grading 12/17/2012-07/07/2013	8.58	92.01	41.54	0.09	302.86	3.96	306.82	63.29	3.65	66.93	13,154.49
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.90	39.51	21.74	0.00	0.00	1.99	1.99	0.00	1.83	1.83	3,954.75
Mass Grading On Road Diesel	3.63	52.41	18.14	0.08	0.32	1.96	2.28	0.10	1.81	1.91	9,020.85
Mass Grading Worker Trips	0.05	0.09	1.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.89
Time Slice 1/1/2013-3/26/2013 Active Days: 61	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 3/27/2013-5/7/2013 Active Days: 30	10.52	98.44	49.02	0.09	302.86	4.86	307.72	63.29	4.47	67.76	14,583.94
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 5/8/2013-7/5/2013 Active Days: 43	16.36	**144.98**	76.77	**0.09**	**332.87**	**7.13**	**340.00**	**69.56**	**6.56**	**76.12**	**19,664.90**
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-07/07/2013	8.02	83.54	38.79	0.09	302.86	3.57	306.43	63.29	3.28	66.57	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	302.53	0.00	302.53	63.18	0.00	63.18	0.00
Mass Grading Off Road Diesel	4.65	37.11	20.95	0.00	0.00	1.84	1.84	0.00	1.69	1.69	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 7/8/2013-8/14/2013 Active Days: 28	8.35	61.44	37.98	0.00	30.02	3.56	33.58	6.27	3.27	9.54	6,510.35
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/15/2013-8/16/2013 Active Days: 2	15.56	103.21	**114.69**	0.08	30.38	5.78	36.16	6.40	5.30	11.70	18,193.52
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	41.77	76.71	0.08	0.36	2.22	2.58	0.13	2.02	2.15	11,683.16
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Fine Grading 05/08/2013-08/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/19/2013-12/31/2013 Active Days: 97	9.71	56.67	86.94	0.08	0.37	3.51	3.88	0.13	3.21	3.34	13,112.55
Asphalt 03/27/2013-12/22/2014	2.50	14.90	10.23	0.00	0.01	1.29	1.29	0.00	1.18	1.19	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	41.77	76.71	0.08	0.36	2.22	2.58	0.13	2.02	2.15	11,683.16
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Time Slice 1/1/2014-4/25/2014 Active Days: 83	9.01	52.37	81.93	0.08	0.37	3.18	3.55	0.13	2.91	3.04	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 4/28/2014-9/29/2014 Active Days: 111	**187.55**	52.46	83.62	0.08	0.38	3.19	3.57	0.14	2.91	3.05	13,327.74
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Coating 04/28/2014-09/29/2014	178.54	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Architectural Coating	178.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Time Slice 9/30/2014-12/22/2014 Active Days: 60	9.01	52.37	81.93	0.08	0.37	3.18	3.55	0.13	2.91	3.04	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	14.12	10.07	0.00	0.01	1.21	1.21	0.00	1.11	1.11	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 12/23/2014-12/31/2014 Active Days: 7	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building 08/15/2013-01/07/2015	6.64	38.25	71.86	0.08	0.36	1.97	2.34	0.13	1.80	1.93	11,685.24
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Time Slice 1/1/2015-1/7/2015 Active Days: 5	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
Building 08/15/2013-01/07/2015	6.10	34.83	67.38	0.08	0.36	1.86	2.22	0.13	1.69	1.82	11,686.97
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.49	5.36	5.46	0.02	0.07	0.21	0.28	0.02	0.19	0.22	1,852.88
Building Worker Trips	1.32	2.27	44.00	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,027.85

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2240.64

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 11.09

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

10/12/2011 11:19:23 AM

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
Mass Grading 12/17/2012-07/07/2013	8.58	76.21	41.54	0.09	21.40	3.46	24.87	4.51	3.19	7.70	13,154.49
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.90	23.71	21.74	0.00	0.00	1.50	1.50	0.00	1.38	1.38	3,954.75
Mass Grading On Road Diesel	3.63	52.41	18.14	0.08	0.32	1.96	2.28	0.10	1.81	1.91	9,020.85
Mass Grading Worker Trips	0.05	0.09	1.65	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.89
Time Slice 1/1/2013-3/26/2013 Active Days: 61	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 3/27/2013-5/7/2013 Active Days: 30	10.52	77.72	49.02	0.09	21.41	4.08	25.49	4.51	3.75	8.26	14,583.94
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 5/8/2013-7/5/2013 Active Days: 43	16.36	105.68	76.77	**0.09**	23.51	5.78	29.29	4.95	5.32	10.27	**19,664.90**
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-07/07/2013	8.02	68.70	38.79	0.09	21.40	3.11	24.51	4.51	2.86	7.37	13,154.55
Mass Grading Dust	0.00	0.00	0.00	0.00	21.08	0.00	21.08	4.40	0.00	4.40	0.00
Mass Grading Off Road Diesel	4.65	22.27	20.95	0.00	0.00	1.38	1.38	0.00	1.27	1.27	3,954.75
Mass Grading On Road Diesel	3.32	46.35	16.31	0.08	0.32	1.73	2.04	0.10	1.59	1.69	9,020.85
Mass Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 7/8/2013-8/14/2013 Active Days: 28	8.35	36.98	37.98	0.00	2.11	2.67	4.78	0.44	2.46	2.90	6,510.35
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/15/2013-8/16/2013 Active Days: 2	15.56	65.89	**114.69**	0.08	2.47	4.45	6.91	0.57	4.07	4.64	18,193.52
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	28.91	76.71	0.08	0.36	1.77	2.14	0.13	1.61	1.74	11,683.16
Building Off Road Diesel	5.03	19.28	18.90	0.00	0.00	1.34	1.34	0.00	1.23	1.23	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Fine Grading 05/08/2013-08/18/2013	5.84	27.96	27.75	0.00	2.10	1.71	3.80	0.44	1.57	2.01	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.70	1.70	0.00	1.56	1.56	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 8/19/2013-12/31/2013 Active Days: 97	9.71	37.94	86.94	0.08	0.37	2.74	3.11	0.13	2.50	2.63	13,112.55
Asphalt 03/27/2013-12/22/2014	2.50	9.02	10.23	0.00	0.01	0.97	0.97	0.00	0.89	0.89	1,429.39
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.96	0.96	0.00	0.88	0.88	1,272.41
Paving On Road Diesel	0.01	0.15	0.05	0.00	0.00	0.01	0.01	0.00	0.01	0.01	29.15
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-01/07/2015	7.21	28.91	76.71	0.08	0.36	1.77	2.14	0.13	1.61	1.74	11,683.16
Building Off Road Diesel	5.03	19.28	18.90	0.00	0.00	1.34	1.34	0.00	1.23	1.23	3,806.24
Building Vendor Trips	0.59	6.92	6.36	0.02	0.07	0.27	0.34	0.02	0.25	0.27	1,852.55
Building Worker Trips	1.59	2.71	51.46	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,024.38
Time Slice 1/1/2014-4/25/2014 Active Days: 83	9.01	34.93	81.93	0.08	0.37	2.49	2.86	0.13	2.27	2.40	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 4/28/2014-9/29/2014 Active Days: 111	116.16	35.02	83.62	0.08	0.38	2.49	2.87	0.14	2.27	2.41	13,327.74
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Coating 04/28/2014-09/29/2014	107.14	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Architectural Coating	107.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.05	0.09	1.68	0.00	0.01	0.01	0.02	0.00	0.00	0.01	213.08
Time Slice 9/30/2014-12/22/2014 Active Days: 60	9.01	34.93	81.93	0.08	0.37	2.49	2.86	0.13	2.27	2.40	13,114.66
Asphalt 03/27/2013-12/22/2014	2.37	8.55	10.07	0.00	0.01	0.91	0.91	0.00	0.83	0.84	1,429.43
Paving Off-Gas	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.90	0.90	0.00	0.83	0.83	1,272.41
Paving On Road Diesel	0.01	0.13	0.05	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.15
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29

Time Slice 12/23/2014-12/31/2014 Active Days: 7	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building 08/15/2013-01/07/2015	6.64	26.38	71.86	0.08	0.36	1.58	1.94	0.13	1.43	1.56	11,685.24
Building Off Road Diesel	4.66	17.80	18.38	0.00	0.00	1.18	1.18	0.00	1.09	1.09	3,806.24
Building Vendor Trips	0.54	6.10	5.89	0.02	0.07	0.24	0.31	0.02	0.22	0.24	1,852.71
Building Worker Trips	1.45	2.48	47.59	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,026.29
Time Slice 1/1/2015-1/7/2015 Active Days: 5	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97
Building 08/15/2013-01/07/2015	6.10	23.95	67.38	0.08	0.36	1.49	1.85	0.13	1.35	1.48	11,686.97
Building Off Road Diesel	4.29	16.32	17.92	0.00	0.00	1.11	1.11	0.00	1.03	1.03	3,806.24
Building Vendor Trips	0.49	5.36	5.46	0.02	0.07	0.21	0.28	0.02	0.19	0.22	1,852.88
Building Worker Trips	1.32	2.27	44.00	0.06	0.29	0.16	0.46	0.11	0.13	0.24	6,027.85

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

10/12/2011 11:19:23 AM

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Other Material Handling Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Other Material Handling Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:12:02 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase3Construction.urb924

Project Name: One Paseo Scenario 2 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (lbs/day unmitigated)	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
2016 TOTALS (lbs/day mitigated)	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
2017 TOTALS (lbs/day unmitigated)	36.52	70.66	44.39	0.13	293.74	3.05	296.79	61.41	2.80	64.21	17,521.30
2017 TOTALS (lbs/day mitigated)	7.38	60.71	44.39	0.13	20.93	2.68	23.61	4.43	2.46	6.89	17,521.30
2018 TOTALS (lbs/day unmitigated)	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
2018 TOTALS (lbs/day mitigated)	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
2019 TOTALS (lbs/day unmitigated)	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
2019 TOTALS (lbs/day mitigated)	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96

10/12/2011 11:12:02 AM

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.13	16.07	10.09	0.00	0.00	0.75	0.75	0.00	0.69	0.69	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	**70.66**	35.57	**0.13**	**293.74**	**3.05**	**296.79**	**61.41**	**2.80**	**64.21**	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	26.59	**44.39**	0.05	0.27	1.69	1.97	0.10	1.54	1.64	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	**36.52**	16.17	35.64	0.05	0.26	0.87	1.14	0.09	0.79	0.88	7,030.50
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	33.43	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
Building 10/04/2017-06/11/2019	2.80	14.80	33.30	0.05	0.26	0.78	1.04	0.09	0.70	0.80	6,994.02
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	33.43	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
Building 10/04/2017-06/11/2019	2.56	13.60	31.40	0.05	0.26	0.69	0.95	0.09	0.62	0.72	6,993.78
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	33.43	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

10/12/2011 11:12:02 AM

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.13	9.64	10.09	0.00	0.00	0.57	0.57	0.00	0.52	0.52	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	60.71	35.57	**0.13**	20.93	2.68	23.61	4.43	2.46	6.89	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	18.35	**44.39**	0.05	0.27	1.34	1.61	0.10	1.22	1.32	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	4.25	12.00	35.64	0.05	0.26	0.72	0.99	0.09	0.65	0.75	7,030.50
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	1.16	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
Building 10/04/2017-06/11/2019	2.80	10.94	33.30	0.05	0.26	0.65	0.91	0.09	0.58	0.68	6,994.02
Building Off Road Diesel	1.78	5.79	9.01	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	13.09	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	13.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96
Building 10/04/2017-06/11/2019	2.56	10.01	31.40	0.05	0.26	0.58	0.84	0.09	0.52	0.61	6,993.78
Building Off Road Diesel	1.62	5.37	8.86	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	5.82	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase3Construction.urb924

Project Name: One Paseo Scenario 2 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (lbs/day unmitigated)	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
2016 TOTALS (lbs/day mitigated)	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
2017 TOTALS (lbs/day unmitigated)	36.52	70.66	44.39	0.13	293.74	3.05	296.79	61.41	2.80	64.21	17,521.30
2017 TOTALS (lbs/day mitigated)	7.38	60.71	44.39	0.13	20.93	2.68	23.61	4.43	2.46	6.89	17,521.30
2018 TOTALS (lbs/day unmitigated)	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
2018 TOTALS (lbs/day mitigated)	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
2019 TOTALS (lbs/day unmitigated)	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
2019 TOTALS (lbs/day mitigated)	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	67.62	28.67	0.13	293.73	2.52	296.25	61.40	2.32	63.72	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.13	16.07	10.09	0.00	0.00	0.75	0.75	0.00	0.69	0.69	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	**70.66**	35.57	**0.13**	**293.74**	**3.05**	**296.79**	**61.41**	**2.80**	**64.21**	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	60.22	26.59	0.13	293.73	2.23	295.96	61.40	2.05	63.45	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	293.24	0.00	293.24	61.24	0.00	61.24	0.00
Mass Grading Off Road Diesel	2.03	14.69	9.80	0.00	0.00	0.68	0.68	0.00	0.62	0.62	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	26.59	**44.39**	0.05	0.27	1.69	1.97	0.10	1.54	1.64	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	10.44	8.97	0.00	0.01	0.82	0.83	0.00	0.75	0.76	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	10.19	7.79	0.00	0.00	0.81	0.81	0.00	0.74	0.74	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	**36.52**	16.17	35.64	0.05	0.26	0.87	1.14	0.09	0.79	0.88	7,030.50
Building 10/04/2017-06/11/2019	3.09	16.15	35.42	0.05	0.26	0.87	1.13	0.09	0.79	0.88	6,994.32
Building Off Road Diesel	1.98	10.41	9.21	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	33.43	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	36.23	14.82	33.51	0.05	0.26	0.78	1.04	0.09	0.70	0.80	7,030.19
Building 10/04/2017-06/11/2019	2.80	14.80	33.30	0.05	0.26	0.78	1.04	0.09	0.70	0.80	6,994.02
Building Off Road Diesel	1.78	9.66	9.01	0.00	0.00	0.52	0.52	0.00	0.48	0.48	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	33.43	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	35.98	13.61	31.59	0.05	0.26	0.69	0.96	0.09	0.62	0.72	7,029.96
Building 10/04/2017-06/11/2019	2.56	13.60	31.40	0.05	0.26	0.69	0.95	0.09	0.62	0.72	6,993.78
Building Off Road Diesel	1.62	8.96	8.86	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	33.43	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	33.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

10/12/2011 11:12:43 AM

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/15/2016-12/30/2016 Active Days: 34	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.98	61.19	28.67	0.13	20.92	2.33	23.25	4.43	2.14	6.57	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.13	9.64	10.09	0.00	0.00	0.57	0.57	0.00	0.52	0.52	2,247.32
Mass Grading On Road Diesel	3.83	51.51	17.97	0.13	0.48	1.76	2.24	0.16	1.62	1.78	13,810.43
Mass Grading Worker Trips	0.02	0.04	0.61	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.77
Time Slice 1/2/2017-1/27/2017 Active Days: 20	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76

Time Slice 1/30/2017-1/30/2017 Active Days: 1	7.38	60.71	35.57	**0.13**	20.93	2.68	23.61	4.43	2.46	6.89	**17,521.30**
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Mass Grading 11/15/2016-01/30/2017	5.56	54.35	26.59	0.13	20.92	2.06	22.98	4.43	1.89	6.32	16,150.52
Mass Grading Dust	0.00	0.00	0.00	0.00	20.43	0.00	20.43	4.27	0.00	4.27	0.00
Mass Grading Off Road Diesel	2.03	8.81	9.80	0.00	0.00	0.51	0.51	0.00	0.47	0.47	2,247.32
Mass Grading On Road Diesel	3.51	45.50	16.23	0.13	0.48	1.55	2.03	0.16	1.43	1.58	13,810.44
Mass Grading Worker Trips	0.02	0.04	0.56	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.76
Time Slice 1/31/2017-10/3/2017 Active Days: 176	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52

Time Slice 10/4/2017-10/10/2017 Active Days: 5	4.91	18.35	**44.39**	0.05	0.27	1.34	1.61	0.10	1.22	1.32	8,365.11
Asphalt 01/29/2017-10/10/2017	1.82	6.36	8.97	0.00	0.01	0.62	0.63	0.00	0.57	0.57	1,370.78
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	1.66	6.11	7.79	0.00	0.00	0.61	0.61	0.00	0.56	0.56	1,131.92
Paving On Road Diesel	0.01	0.18	0.06	0.00	0.00	0.01	0.01	0.00	0.01	0.01	53.35
Paving Worker Trips	0.04	0.07	1.12	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.52
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 10/11/2017-11/28/2017 Active Days: 35	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Time Slice 11/29/2017-12/29/2017 Active Days: 23	4.25	12.00	35.64	0.05	0.26	0.72	0.99	0.09	0.65	0.75	7,030.50
Building 10/04/2017-06/11/2019	3.09	11.99	35.42	0.05	0.26	0.72	0.98	0.09	0.65	0.74	6,994.32
Building Off Road Diesel	1.98	6.24	9.21	0.00	0.00	0.45	0.45	0.00	0.41	0.41	1,621.20
Building Vendor Trips	0.40	4.36	4.15	0.02	0.07	0.17	0.23	0.02	0.15	0.17	1,723.70
Building Worker Trips	0.71	1.38	22.06	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.42
Coating 11/29/2017-06/11/2019	1.16	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	1.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18

Time Slice 1/1/2018-12/31/2018 Active Days: 261	15.89	10.95	33.51	0.05	0.26	0.65	0.91	0.09	0.58	0.68	7,030.19
Building 10/04/2017-06/11/2019	2.80	10.94	33.30	0.05	0.26	0.65	0.91	0.09	0.58	0.68	6,994.02
Building Off Road Diesel	1.78	5.79	9.01	0.00	0.00	0.39	0.39	0.00	0.36	0.36	1,621.20
Building Vendor Trips	0.37	3.88	3.87	0.02	0.07	0.15	0.21	0.02	0.14	0.16	1,723.73
Building Worker Trips	0.65	1.26	20.42	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,649.09
Coating 11/29/2017-06/11/2019	13.09	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Architectural Coating	13.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.18
Time Slice 1/1/2019-6/11/2019 Active Days: 116	8.38	10.03	31.59	0.05	0.26	0.58	0.84	0.09	0.52	0.62	7,029.96
Building 10/04/2017-06/11/2019	2.56	10.01	31.40	0.05	0.26	0.58	0.84	0.09	0.52	0.61	6,993.78
Building Off Road Diesel	1.62	5.37	8.86	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,621.20
Building Vendor Trips	0.34	3.47	3.63	0.02	0.07	0.14	0.20	0.02	0.12	0.15	1,723.75
Building Worker Trips	0.59	1.17	18.92	0.03	0.20	0.11	0.30	0.07	0.09	0.16	3,648.84
Coating 11/29/2017-06/11/2019	5.82	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17
Architectural Coating	5.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.01	0.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.17

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:19:39 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase1-2Construction.urb924

Project Name: One Paseo Scenario 2 Phase 1 and 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.05	0.51	0.23	0.00	1.67	0.02	1.69	0.35	0.02	0.37	72.35
2012 TOTALS (tons/year mitigated)	0.05	0.42	0.23	0.00	0.12	0.02	0.14	0.02	0.02	0.04	72.35
Percent Reduction	0.00	17.18	0.00	0.00	92.93	12.58	91.90	92.88	12.58	88.50	0.00
2013 TOTALS (tons/year unmitigated)	1.36	10.85	8.43	0.01	21.41	0.56	21.97	4.48	0.51	4.99	1,788.07
2013 TOTALS (tons/year mitigated)	1.36	7.96	8.43	0.01	1.53	0.46	1.98	0.32	0.42	0.74	1,788.07
Percent Reduction	0.00	26.69	0.00	0.00	92.86	18.83	90.97	92.74	18.86	85.12	0.00
2014 TOTALS (tons/year unmitigated)	11.08	6.79	10.75	0.01	0.05	0.41	0.46	0.02	0.38	0.39	1,718.29
2014 TOTALS (tons/year mitigated)	7.11	4.53	10.75	0.01	0.05	0.32	0.37	0.02	0.29	0.31	1,718.29
Percent Reduction	35.77	33.24	0.00	0.00	0.00	21.74	19.43	0.00	21.89	20.92	0.00
2015 TOTALS (tons/year unmitigated)	0.02	0.09	0.17	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.22
2015 TOTALS (tons/year mitigated)	0.02	0.06	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.22
Percent Reduction	0.00	31.24	0.00	0.00	0.00	19.97	16.72	0.00	20.21	18.77	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2012	0.05	0.51	0.23	0.00	1.67	0.02	1.69	0.35	0.02	0.37	72.35
Mass Grading 12/17/2012-07/07/2013	0.05	0.51	0.23	0.00	1.67	0.02	1.69	0.35	0.02	0.37	72.35
Mass Grading Dust	0.00	0.00	0.00	0.00	1.66	0.00	1.66	0.35	0.00	0.35	0.00
Mass Grading Off Road Diesel	0.03	0.22	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	21.75
Mass Grading On Road Diesel	0.02	0.29	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.61
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98

2013	1.36	10.85	8.43	0.01	21.41	0.56	21.97	4.48	0.51	4.99	1,788.07
Mass Grading 12/17/2012-07/07/2013	0.54	5.60	2.60	0.01	20.29	0.24	20.53	4.24	0.22	4.46	881.35
Mass Grading Dust	0.00	0.00	0.00	0.00	20.27	0.00	20.27	4.23	0.00	4.23	0.00
Mass Grading Off Road Diesel	0.31	2.49	1.40	0.00	0.00	0.12	0.12	0.00	0.11	0.11	264.97
Mass Grading On Road Diesel	0.22	3.11	1.09	0.01	0.02	0.12	0.14	0.01	0.11	0.11	604.40
Mass Grading Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.99
Asphalt 03/27/2013-12/22/2014	0.25	1.49	1.02	0.00	0.00	0.13	0.13	0.00	0.12	0.12	142.94
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.24	1.47	0.91	0.00	0.00	0.13	0.13	0.00	0.12	0.12	127.24
Paving On Road Diesel	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92
Paving Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.78
Fine Grading 05/08/2013-08/18/2013	0.21	1.70	1.01	0.00	1.10	0.08	1.18	0.23	0.08	0.31	185.46
Fine Grading Dust	0.00	0.00	0.00	0.00	1.10	0.00	1.10	0.23	0.00	0.23	0.00
Fine Grading Off Road Diesel	0.21	1.70	0.96	0.00	0.00	0.08	0.08	0.00	0.08	0.08	178.92
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.53
Building 08/15/2013-01/07/2015	0.36	2.07	3.80	0.00	0.02	0.11	0.13	0.01	0.10	0.11	578.32
Building Off Road Diesel	0.25	1.59	0.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	188.41
Building Vendor Trips	0.03	0.34	0.31	0.00	0.00	0.01	0.02	0.00	0.01	0.01	91.70
Building Worker Trips	0.08	0.13	2.55	0.00	0.01	0.01	0.02	0.01	0.01	0.01	298.21

2014	11.08	6.79	10.75	0.01	0.05	0.41	0.46	0.02	0.38	0.39	1,718.29
Asphalt 03/27/2013-12/22/2014	0.30	1.79	1.28	0.00	0.00	0.15	0.15	0.00	0.14	0.14	181.54
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.29	1.77	1.14	0.00	0.00	0.15	0.15	0.00	0.14	0.14	161.60
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70
Paving Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.24
Building 08/15/2013-01/07/2015	0.87	4.99	9.38	0.01	0.05	0.26	0.30	0.02	0.23	0.25	1,524.92
Building Off Road Diesel	0.61	3.87	2.40	0.00	0.00	0.21	0.21	0.00	0.19	0.19	496.71
Building Vendor Trips	0.07	0.80	0.77	0.00	0.01	0.03	0.04	0.00	0.03	0.03	241.78
Building Worker Trips	0.19	0.32	6.21	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.43
Coating 04/28/2014-09/29/2014	9.91	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.83
Architectural Coating	9.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.83
2015	0.02	0.09	0.17	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.22
Building 08/15/2013-01/07/2015	0.02	0.09	0.17	0.00	0.00	0.00	0.01	0.00	0.00	0.00	29.22
Building Off Road Diesel	0.01	0.07	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.63
Building Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.07

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

10/12/2011 11:19:39 AM

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2436.7 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 2240.64

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

Acres to be Paved: 11.09

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.05	0.42	0.23	0.00	0.12	0.02	0.14	0.02	0.02	0.04	72.35
Mass Grading 12/17/2012-07/07/2013	0.05	0.42	0.23	0.00	0.12	0.02	0.14	0.02	0.02	0.04	72.35
Mass Grading Dust	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.03	0.13	0.12	0.00	0.00	0.01	0.01	0.00	0.01	0.01	21.75
Mass Grading On Road Diesel	0.02	0.29	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	49.61
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.98

2013	1.36	7.96	8.43	0.01	1.53	0.46	1.98	0.32	0.42	0.74	1,788.07
Mass Grading 12/17/2012-07/07/2013	0.54	4.60	2.60	0.01	1.43	0.21	1.64	0.30	0.19	0.49	881.35
Mass Grading Dust	0.00	0.00	0.00	0.00	1.41	0.00	1.41	0.29	0.00	0.29	0.00
Mass Grading Off Road Diesel	0.31	1.49	1.40	0.00	0.00	0.09	0.09	0.00	0.09	0.09	264.97
Mass Grading On Road Diesel	0.22	3.11	1.09	0.01	0.02	0.12	0.14	0.01	0.11	0.11	604.40
Mass Grading Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.99
Asphalt 03/27/2013-12/22/2014	0.25	0.90	1.02	0.00	0.00	0.10	0.10	0.00	0.09	0.09	142.94
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.24	0.88	0.91	0.00	0.00	0.10	0.10	0.00	0.09	0.09	127.24
Paving On Road Diesel	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.92
Paving Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.78
Fine Grading 05/08/2013-08/18/2013	0.21	1.02	1.01	0.00	0.08	0.06	0.14	0.02	0.06	0.07	185.46
Fine Grading Dust	0.00	0.00	0.00	0.00	0.08	0.00	0.08	0.02	0.00	0.02	0.00
Fine Grading Off Road Diesel	0.21	1.02	0.96	0.00	0.00	0.06	0.06	0.00	0.06	0.06	178.92
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.53
Building 08/15/2013-01/07/2015	0.36	1.43	3.80	0.00	0.02	0.09	0.11	0.01	0.08	0.09	578.32
Building Off Road Diesel	0.25	0.95	0.94	0.00	0.00	0.07	0.07	0.00	0.06	0.06	188.41
Building Vendor Trips	0.03	0.34	0.31	0.00	0.00	0.01	0.02	0.00	0.01	0.01	91.70
Building Worker Trips	0.08	0.13	2.55	0.00	0.01	0.01	0.02	0.01	0.01	0.01	298.21

2014	7.11	4.53	10.75	0.01	0.05	0.32	0.37	0.02	0.29	0.31	1,718.29
Asphalt 03/27/2013-12/22/2014	0.30	1.09	1.28	0.00	0.00	0.12	0.12	0.00	0.11	0.11	181.54
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.29	1.06	1.14	0.00	0.00	0.11	0.11	0.00	0.11	0.11	161.60
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.70
Paving Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.24
Building 08/15/2013-01/07/2015	0.87	3.44	9.38	0.01	0.05	0.21	0.25	0.02	0.19	0.20	1,524.92
Building Off Road Diesel	0.61	2.32	2.40	0.00	0.00	0.15	0.15	0.00	0.14	0.14	496.71
Building Vendor Trips	0.07	0.80	0.77	0.00	0.01	0.03	0.04	0.00	0.03	0.03	241.78
Building Worker Trips	0.19	0.32	6.21	0.01	0.04	0.02	0.06	0.01	0.02	0.03	786.43
Coating 04/28/2014-09/29/2014	5.95	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.83
Architectural Coating	5.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.83
2015	0.02	0.06	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.22
Building 08/15/2013-01/07/2015	0.02	0.06	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.22
Building Off Road Diesel	0.01	0.04	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.52
Building Vendor Trips	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.63
Building Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.07

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 8/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 7/7/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 12/22/2014 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 1/7/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Other Material Handling Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Other Material Handling Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 9/29/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 11:13:01 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario2Phase3Construction.urb924

Project Name: One Paseo Scenario 2 Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

10/12/2011 11:13:01 AM

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016 TOTALS (tons/year unmitigated)	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
2016 TOTALS (tons/year mitigated)	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Percent Reduction	0.00	9.50	0.00	0.00	92.88	7.49	92.15	92.79	7.49	89.69	0.00
2017 TOTALS (tons/year unmitigated)	0.71	2.09	2.21	0.00	3.09	0.13	3.22	0.65	0.11	0.76	515.06
2017 TOTALS (tons/year mitigated)	0.34	1.53	2.21	0.00	0.23	0.10	0.33	0.05	0.09	0.14	515.06
Percent Reduction	52.55	26.96	0.00	0.00	92.60	19.84	89.76	92.31	19.92	81.41	0.00
2018 TOTALS (tons/year unmitigated)	4.73	1.93	4.37	0.01	0.03	0.10	0.14	0.01	0.09	0.10	917.44
2018 TOTALS (tons/year mitigated)	2.07	1.43	4.37	0.01	0.03	0.08	0.12	0.01	0.08	0.09	917.44
Percent Reduction	56.14	26.07	0.00	0.00	0.00	16.76	12.52	0.00	17.08	15.07	0.00
2019 TOTALS (tons/year unmitigated)	2.09	0.79	1.83	0.00	0.02	0.04	0.06	0.01	0.04	0.04	407.74
2019 TOTALS (tons/year mitigated)	0.49	0.58	1.83	0.00	0.02	0.03	0.05	0.01	0.03	0.04	407.74
Percent Reduction	76.72	26.33	0.00	0.00	0.00	16.22	11.75	0.00	16.57	14.41	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2016	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
Mass Grading 11/15/2016-01/30/2017	0.10	1.15	0.49	0.00	4.99	0.04	5.04	1.04	0.04	1.08	274.56
Mass Grading Dust	0.00	0.00	0.00	0.00	4.99	0.00	4.99	1.04	0.00	1.04	0.00
Mass Grading Off Road Diesel	0.04	0.27	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.20
Mass Grading On Road Diesel	0.07	0.88	0.31	0.00	0.01	0.03	0.04	0.00	0.03	0.03	234.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58

2017	0.71	2.09	2.21	0.00	3.09	0.13	3.22	0.65	0.11	0.76	515.06
Mass Grading 11/15/2016-01/30/2017	0.06	0.63	0.28	0.00	3.08	0.02	3.11	0.64	0.02	0.67	169.58
Mass Grading Dust	0.00	0.00	0.00	0.00	3.08	0.00	3.08	0.64	0.00	0.64	0.00
Mass Grading Off Road Diesel	0.02	0.15	0.10	0.00	0.00	0.01	0.01	0.00	0.01	0.01	23.60
Mass Grading On Road Diesel	0.04	0.48	0.17	0.00	0.01	0.02	0.02	0.00	0.01	0.02	145.01
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
Asphalt 01/29/2017-10/10/2017	0.17	0.95	0.82	0.00	0.00	0.07	0.08	0.00	0.07	0.07	124.74
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.15	0.93	0.71	0.00	0.00	0.07	0.07	0.00	0.07	0.07	103.00
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.88
Building 10/04/2017-06/11/2019	0.10	0.51	1.12	0.00	0.01	0.03	0.04	0.00	0.02	0.03	220.32
Building Off Road Diesel	0.06	0.33	0.29	0.00	0.00	0.02	0.02	0.00	0.02	0.02	51.07
Building Vendor Trips	0.01	0.14	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.01	54.30
Building Worker Trips	0.02	0.04	0.69	0.00	0.01	0.00	0.01	0.00	0.00	0.00	114.96
Coating 11/29/2017-06/11/2019	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Architectural Coating	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42

2018	4.73	1.93	4.37	0.01	0.03	0.10	0.14	0.01	0.09	0.10	917.44
Building 10/04/2017-06/11/2019	0.37	1.93	4.35	0.01	0.03	0.10	0.14	0.01	0.09	0.10	912.72
Building Off Road Diesel	0.23	1.26	1.18	0.00	0.00	0.07	0.07	0.00	0.06	0.06	211.57
Building Vendor Trips	0.05	0.51	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	224.95
Building Worker Trips	0.08	0.16	2.66	0.00	0.03	0.01	0.04	0.01	0.01	0.02	476.21
Coating 11/29/2017-06/11/2019	4.36	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
Architectural Coating	4.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
2019	2.09	0.79	1.83	0.00	0.02	0.04	0.06	0.01	0.04	0.04	407.74
Building 10/04/2017-06/11/2019	0.15	0.79	1.82	0.00	0.02	0.04	0.06	0.01	0.04	0.04	405.64
Building Off Road Diesel	0.09	0.52	0.51	0.00	0.00	0.03	0.03	0.00	0.02	0.02	94.03
Building Vendor Trips	0.02	0.20	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	99.98
Building Worker Trips	0.03	0.07	1.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	211.63
Coating 11/29/2017-06/11/2019	1.94	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10
Architectural Coating	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10

Phase Assumptions

Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2358 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3430.3

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

Acres to be Paved: 8.18

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2016	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Mass Grading 11/15/2016-01/30/2017	0.10	1.04	0.49	0.00	0.36	0.04	0.40	0.08	0.04	0.11	274.56
Mass Grading Dust	0.00	0.00	0.00	0.00	0.35	0.00	0.35	0.07	0.00	0.07	0.00
Mass Grading Off Road Diesel	0.04	0.16	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	38.20
Mass Grading On Road Diesel	0.07	0.88	0.31	0.00	0.01	0.03	0.04	0.00	0.03	0.03	234.78
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.58

2017	0.34	1.53	2.21	0.00	0.23	0.10	0.33	0.05	0.09	0.14	515.06
Mass Grading 11/15/2016-01/30/2017	0.06	0.57	0.28	0.00	0.22	0.02	0.24	0.05	0.02	0.07	169.58
Mass Grading Dust	0.00	0.00	0.00	0.00	0.21	0.00	0.21	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.02	0.09	0.10	0.00	0.00	0.01	0.01	0.00	0.00	0.00	23.60
Mass Grading On Road Diesel	0.04	0.48	0.17	0.00	0.01	0.02	0.02	0.00	0.01	0.02	145.01
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.97
Asphalt 01/29/2017-10/10/2017	0.17	0.58	0.82	0.00	0.00	0.06	0.06	0.00	0.05	0.05	124.74
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.15	0.56	0.71	0.00	0.00	0.06	0.06	0.00	0.05	0.05	103.00
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.85
Paving Worker Trips	0.00	0.01	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.88
Building 10/04/2017-06/11/2019	0.10	0.38	1.12	0.00	0.01	0.02	0.03	0.00	0.02	0.02	220.32
Building Off Road Diesel	0.06	0.20	0.29	0.00	0.00	0.01	0.01	0.00	0.01	0.01	51.07
Building Vendor Trips	0.01	0.14	0.13	0.00	0.00	0.01	0.01	0.00	0.00	0.01	54.30
Building Worker Trips	0.02	0.04	0.69	0.00	0.01	0.00	0.01	0.00	0.00	0.00	114.96
Coating 11/29/2017-06/11/2019	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42
Architectural Coating	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.42

2018	2.07	1.43	4.37	0.01	0.03	0.08	0.12	0.01	0.08	0.09	917.44
Building 10/04/2017-06/11/2019	0.37	1.43	4.35	0.01	0.03	0.08	0.12	0.01	0.08	0.09	912.72
Building Off Road Diesel	0.23	0.76	1.18	0.00	0.00	0.05	0.05	0.00	0.05	0.05	211.57
Building Vendor Trips	0.05	0.51	0.51	0.00	0.01	0.02	0.03	0.00	0.02	0.02	224.95
Building Worker Trips	0.08	0.16	2.66	0.00	0.03	0.01	0.04	0.01	0.01	0.02	476.21
Coating 11/29/2017-06/11/2019	1.71	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
Architectural Coating	1.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.72
2019	0.49	0.58	1.83	0.00	0.02	0.03	0.05	0.01	0.03	0.04	407.74
Building 10/04/2017-06/11/2019	0.15	0.58	1.82	0.00	0.02	0.03	0.05	0.01	0.03	0.04	405.64
Building Off Road Diesel	0.09	0.31	0.51	0.00	0.00	0.02	0.02	0.00	0.02	0.02	94.03
Building Vendor Trips	0.02	0.20	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	99.98
Building Worker Trips	0.03	0.07	1.10	0.00	0.01	0.01	0.02	0.00	0.01	0.01	211.63
Coating 11/29/2017-06/11/2019	0.34	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10
Architectural Coating	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/15/2016 - 1/30/2017 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 1/29/2017 - 10/10/2017 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 10/4/2017 - 6/11/2019 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 11/29/2017 - 6/11/2019 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario3Phase1-2-3Construction.urb924

Project Name: One Paseo Scenario 3 Phase 1, 2 and 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
2012 TOTALS (lbs/day mitigated)	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
2013 TOTALS (lbs/day unmitigated)	28.48	228.69	208.73	0.25	288.81	11.10	299.91	60.46	10.17	70.64	42,330.84
2013 TOTALS (lbs/day mitigated)	28.48	172.39	208.73	0.25	21.13	7.88	29.01	4.56	7.21	11.77	42,330.84
2014 TOTALS (lbs/day unmitigated)	95.01	60.10	120.08	0.13	0.64	3.53	4.16	0.23	3.21	3.44	19,037.50
2014 TOTALS (lbs/day mitigated)	33.52	44.76	120.08	0.13	0.64	2.22	2.86	0.23	2.01	2.24	19,037.50
2015 TOTALS (lbs/day unmitigated)	94.19	54.91	112.56	0.13	0.64	3.30	3.93	0.23	3.00	3.23	19,040.48
2015 TOTALS (lbs/day mitigated)	37.47	40.70	112.56	0.13	0.64	2.08	2.72	0.23	1.88	2.10	19,040.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
Mass Grading 12/17/2012-10/17/2013	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.97	56.77	30.37	0.00	0.00	2.80	2.80	0.00	2.58	2.58	5,715.36
Mass Grading On Road Diesel	4.96	71.73	24.83	0.11	0.43	2.69	3.12	0.14	2.47	2.62	12,345.69
Mass Grading Worker Trips	0.07	0.13	2.36	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.56
Time Slice 1/1/2013-3/26/2013 Active Days: 61	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 3/27/2013-5/7/2013 Active Days: 30	13.80	131.85	63.94	0.12	258.18	6.24	264.41	53.97	5.74	59.71	19,769.46
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 5/8/2013-8/14/2013 Active Days: 71	19.64	178.39	91.69	0.12	288.19	8.51	296.69	60.24	7.82	68.07	24,850.43
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 8/15/2013-10/17/2013 Active Days: 46	28.48	**228.69**	**208.73**	**0.25**	288.81	**11.10**	299.91	60.46	**10.17**	70.64	**42,330.84**
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 10/18/2013-10/18/2013 Active Days: 1	17.25	111.86	155.06	0.13	30.64	6.15	36.79	6.49	5.63	12.12	24,014.14
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 10/21/2013-12/31/2013 Active Days: 52	11.41	65.32	127.31	0.13	0.63	3.88	4.51	0.23	3.54	3.76	18,933.18
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Time Slice 1/1/2014-4/25/2014 Active Days: 83	10.56	60.06	119.28	0.13	0.63	3.52	4.16	0.23	3.21	3.43	18,936.71
Asphalt 03/27/2013-02/27/2015	2.43	14.23	10.11	0.00	0.01	1.21	1.22	0.00	1.11	1.12	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	45.83	109.17	0.13	0.62	2.31	2.94	0.22	2.09	2.32	17,483.91
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74

Time Slice 4/28/2014-12/31/2014 Active Days: 178	95.01	60.10	120.08	0.13	0.64	3.53	4.16	0.23	3.21	3.44	19,037.50
Asphalt 03/27/2013-02/27/2015	2.43	14.23	10.11	0.00	0.01	1.21	1.22	0.00	1.11	1.12	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	45.83	109.17	0.13	0.62	2.31	2.94	0.22	2.09	2.32	17,483.91
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74
Coating 04/28/2014-10/28/2015	84.45	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79

Time Slice 1/1/2015-2/27/2015 Active Days: 42	94.19	54.91	112.56	0.13	0.64	3.30	3.93	0.23	3.00	3.23	19,040.48
Asphalt 03/27/2013-02/27/2015	2.28	13.33	9.94	0.00	0.01	1.12	1.13	0.00	1.03	1.03	1,452.84
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.12	13.07	8.93	0.00	0.00	1.11	1.11	0.00	1.02	1.02	1,272.41
Paving On Road Diesel	0.02	0.21	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	0.93	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.90
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	84.45	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Time Slice 3/2/2015-10/28/2015 Active Days: 173	91.91	41.59	102.62	0.13	0.63	2.18	2.81	0.22	1.97	2.19	17,587.64
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	84.45	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82

Time Slice 10/29/2015-12/11/2015 Active Days: 32	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2057 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3066.48

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

Acres to be Paved: 22.14

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
Mass Grading 12/17/2012-10/17/2013	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.97	34.06	30.37	0.00	0.00	2.10	2.10	0.00	1.93	1.93	5,715.36
Mass Grading On Road Diesel	4.96	71.73	24.83	0.11	0.43	2.69	3.12	0.14	2.47	2.62	12,345.69
Mass Grading Worker Trips	0.07	0.13	2.36	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.56
Time Slice 1/1/2013-3/26/2013 Active Days: 61	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 3/27/2013-5/7/2013 Active Days: 30	13.80	104.66	63.94	0.12	18.41	4.95	23.36	3.90	4.56	8.45	19,769.46
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

10/12/2011 10:47:39 AM

Time Slice 5/8/2013-8/14/2013 Active Days: 71	19.64	132.62	91.69	0.12	20.51	6.09	26.60	4.34	5.60	9.94	24,850.43
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 8/15/2013-10/17/2013 Active Days: 46	28.48	172.39	**208.73**	**0.25**	21.13	7.88	29.01	4.56	7.21	11.77	**42,330.84**
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 10/18/2013-10/18/2013 Active Days: 1	17.25	76.88	155.06	0.13	2.73	3.58	6.31	0.66	3.26	3.92	24,014.14
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 10/21/2013-12/31/2013 Active Days: 52	11.41	48.92	127.31	0.13	0.63	2.44	3.07	0.23	2.21	2.43	18,933.18
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Time Slice 1/1/2014-4/25/2014 Active Days: 83	10.56	44.72	119.28	0.13	0.63	2.22	2.85	0.23	2.01	2.23	18,936.71
Asphalt 03/27/2013-02/27/2015	2.43	8.65	10.11	0.00	0.01	0.61	0.62	0.00	0.56	0.57	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	36.07	109.17	0.13	0.62	1.61	2.23	0.22	1.44	1.67	17,483.91
Building Off Road Diesel	4.66	19.91	18.38	0.00	0.00	0.87	0.87	0.00	0.80	0.80	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74

Time Slice 4/28/2014-12/31/2014 Active Days: 178	33.52	44.76	120.08	0.13	0.64	2.22	2.86	0.23	2.01	2.24	19,037.50
Asphalt 03/27/2013-02/27/2015	2.43	8.65	10.11	0.00	0.01	0.61	0.62	0.00	0.56	0.57	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	36.07	109.17	0.13	0.62	1.61	2.23	0.22	1.44	1.67	17,483.91
Building Off Road Diesel	4.66	19.91	18.38	0.00	0.00	0.87	0.87	0.00	0.80	0.80	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74
Coating 04/28/2014-10/28/2015	22.97	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79
Architectural Coating	22.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79

Time Slice 1/1/2015-2/27/2015 Active Days: 42	37.47	40.70	112.56	0.13	0.64	2.08	2.72	0.23	1.88	2.10	19,040.48
Asphalt 03/27/2013-02/27/2015	2.28	8.10	9.94	0.00	0.01	0.57	0.57	0.00	0.52	0.52	1,452.84
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.12	7.84	8.93	0.00	0.00	0.55	0.55	0.00	0.51	0.51	1,272.41
Paving On Road Diesel	0.02	0.21	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	0.93	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.90
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	27.74	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	27.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Time Slice 3/2/2015-10/28/2015 Active Days: 173	35.19	32.60	102.62	0.13	0.63	1.51	2.14	0.22	1.36	1.58	17,587.64
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	27.74	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	27.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82

Time Slice 10/29/2015-12/11/2015 Active Days: 32	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 10:48:17 AM

Urbemis 2007 Version 9.2.4

Combined Winter Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario3Phase1-2-3Construction.urb924

Project Name: One Paseo Scenario 3 Phase 1, 2 and 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (lbs/day unmitigated)	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
2012 TOTALS (lbs/day mitigated)	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
2013 TOTALS (lbs/day unmitigated)	28.48	228.69	208.73	0.25	288.81	11.10	299.91	60.46	10.17	70.64	42,330.84
2013 TOTALS (lbs/day mitigated)	28.48	172.39	208.73	0.25	21.13	7.88	29.01	4.56	7.21	11.77	42,330.84
2014 TOTALS (lbs/day unmitigated)	95.01	60.10	120.08	0.13	0.64	3.53	4.16	0.23	3.21	3.44	19,037.50
2014 TOTALS (lbs/day mitigated)	33.52	44.76	120.08	0.13	0.64	2.22	2.86	0.23	2.01	2.24	19,037.50
2015 TOTALS (lbs/day unmitigated)	94.19	54.91	112.56	0.13	0.64	3.30	3.93	0.23	3.00	3.23	19,040.48
2015 TOTALS (lbs/day mitigated)	37.47	40.70	112.56	0.13	0.64	2.08	2.72	0.23	1.88	2.10	19,040.48

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
Mass Grading 12/17/2012-10/17/2013	12.01	128.63	57.56	0.12	258.17	5.49	263.67	53.97	5.05	59.02	18,316.61
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.97	56.77	30.37	0.00	0.00	2.80	2.80	0.00	2.58	2.58	5,715.36
Mass Grading On Road Diesel	4.96	71.73	24.83	0.11	0.43	2.69	3.12	0.14	2.47	2.62	12,345.69
Mass Grading Worker Trips	0.07	0.13	2.36	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.56
Time Slice 1/1/2013-3/26/2013 Active Days: 61	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 3/27/2013-5/7/2013 Active Days: 30	13.80	131.85	63.94	0.12	258.18	6.24	264.41	53.97	5.74	59.71	19,769.46
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 5/8/2013-8/14/2013 Active Days: 71	19.64	178.39	91.69	0.12	288.19	8.51	296.69	60.24	7.82	68.07	24,850.43
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 8/15/2013-10/17/2013 Active Days: 46	28.48	**228.69**	**208.73**	**0.25**	288.81	**11.10**	299.91	60.46	**10.17**	70.64	**42,330.84**
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	116.83	53.67	0.12	258.17	4.94	263.11	53.97	4.55	58.52	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	257.73	0.00	257.73	53.82	0.00	53.82	0.00
Mass Grading Off Road Diesel	6.63	53.29	29.16	0.00	0.00	2.57	2.57	0.00	2.37	2.37	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

10/12/2011 10:48:18 AM

Time Slice 10/18/2013-10/18/2013 Active Days: 1	17.25	111.86	155.06	0.13	30.64	6.15	36.79	6.49	5.63	12.12	24,014.14
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	46.54	27.75	0.00	30.01	2.27	32.28	6.27	2.09	8.36	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Fine Grading Off Road Diesel	5.80	46.46	26.22	0.00	0.00	2.27	2.27	0.00	2.09	2.09	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 10/21/2013-12/31/2013 Active Days: 52	11.41	65.32	127.31	0.13	0.63	3.88	4.51	0.23	3.54	3.76	18,933.18
Asphalt 03/27/2013-02/27/2015	2.56	15.02	10.28	0.00	0.01	1.29	1.30	0.00	1.19	1.19	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	14.70	9.09	0.00	0.00	1.28	1.28	0.00	1.18	1.18	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	50.30	117.04	0.13	0.62	2.59	3.21	0.22	2.35	2.57	17,480.41
Building Off Road Diesel	5.03	32.13	18.90	0.00	0.00	1.79	1.79	0.00	1.64	1.64	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Time Slice 1/1/2014-4/25/2014 Active Days: 83	10.56	60.06	119.28	0.13	0.63	3.52	4.16	0.23	3.21	3.43	18,936.71
Asphalt 03/27/2013-02/27/2015	2.43	14.23	10.11	0.00	0.01	1.21	1.22	0.00	1.11	1.12	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	45.83	109.17	0.13	0.62	2.31	2.94	0.22	2.09	2.32	17,483.91
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74

Time Slice 4/28/2014-12/31/2014 Active Days: 178	95.01	60.10	120.08	0.13	0.64	3.53	4.16	0.23	3.21	3.44	19,037.50
Asphalt 03/27/2013-02/27/2015	2.43	14.23	10.11	0.00	0.01	1.21	1.22	0.00	1.11	1.12	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	13.94	9.01	0.00	0.00	1.20	1.20	0.00	1.10	1.10	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	45.83	109.17	0.13	0.62	2.31	2.94	0.22	2.09	2.32	17,483.91
Building Off Road Diesel	4.66	29.67	18.38	0.00	0.00	1.57	1.57	0.00	1.45	1.45	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74
Coating 04/28/2014-10/28/2015	84.45	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79

Time Slice 1/1/2015-2/27/2015 Active Days: 42	94.19	54.91	112.56	0.13	0.64	3.30	3.93	0.23	3.00	3.23	19,040.48
Asphalt 03/27/2013-02/27/2015	2.28	13.33	9.94	0.00	0.01	1.12	1.13	0.00	1.03	1.03	1,452.84
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.12	13.07	8.93	0.00	0.00	1.11	1.11	0.00	1.02	1.02	1,272.41
Paving On Road Diesel	0.02	0.21	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	0.93	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.90
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	84.45	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Time Slice 3/2/2015-10/28/2015 Active Days: 173	91.91	41.59	102.62	0.13	0.63	2.18	2.81	0.22	1.97	2.19	17,587.64
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	84.45	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	84.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82

Time Slice 10/29/2015-12/11/2015 Active Days: 32	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building 08/15/2013-12/11/2015	7.46	41.55	101.88	0.13	0.62	2.17	2.80	0.22	1.97	2.19	17,486.83
Building Off Road Diesel	4.29	27.20	17.92	0.00	0.00	1.49	1.49	0.00	1.37	1.37	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2057 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3066.48

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

Acres to be Paved: 22.14

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Winter Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 12/17/2012-12/31/2012 Active Days: 11	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
Mass Grading 12/17/2012-10/17/2013	12.01	105.92	57.56	0.12	18.40	4.79	23.20	3.90	4.41	8.31	18,316.61
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.97	34.06	30.37	0.00	0.00	2.10	2.10	0.00	1.93	1.93	5,715.36
Mass Grading On Road Diesel	4.96	71.73	24.83	0.11	0.43	2.69	3.12	0.14	2.47	2.62	12,345.69
Mass Grading Worker Trips	0.07	0.13	2.36	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.56
Time Slice 1/1/2013-3/26/2013 Active Days: 61	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 3/27/2013-5/7/2013 Active Days: 30	13.80	104.66	63.94	0.12	18.41	4.95	23.36	3.90	4.56	8.45	19,769.46
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 5/8/2013-8/14/2013 Active Days: 71	19.64	132.62	91.69	0.12	20.51	6.09	26.60	4.34	5.60	9.94	24,850.43
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 8/15/2013-10/17/2013 Active Days: 46	28.48	172.39	**208.73**	**0.25**	21.13	7.88	29.01	4.56	7.21	11.77	**42,330.84**
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95
Mass Grading 12/17/2012-10/17/2013	11.23	95.52	53.67	0.12	18.40	4.30	22.70	3.90	3.96	7.85	18,316.70
Mass Grading Dust	0.00	0.00	0.00	0.00	17.96	0.00	17.96	3.75	0.00	3.75	0.00
Mass Grading Off Road Diesel	6.63	31.97	29.16	0.00	0.00	1.93	1.93	0.00	1.78	1.78	5,715.36
Mass Grading On Road Diesel	4.54	63.43	22.32	0.11	0.43	2.36	2.80	0.14	2.17	2.32	12,345.69
Mass Grading Worker Trips	0.07	0.11	2.18	0.00	0.01	0.01	0.02	0.00	0.01	0.01	255.65

Time Slice 10/18/2013-10/18/2013 Active Days: 1	17.25	76.88	155.06	0.13	2.73	3.58	6.31	0.66	3.26	3.92	24,014.14
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Fine Grading 05/08/2013-10/18/2013	5.84	27.96	27.75	0.00	2.10	1.14	3.24	0.44	1.05	1.49	5,080.97
Fine Grading Dust	0.00	0.00	0.00	0.00	2.09	0.00	2.09	0.44	0.00	0.44	0.00
Fine Grading Off Road Diesel	5.80	27.88	26.22	0.00	0.00	1.13	1.13	0.00	1.04	1.04	4,902.01
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.05	0.08	1.53	0.00	0.01	0.00	0.01	0.00	0.00	0.01	178.95

Time Slice 10/21/2013-12/31/2013 Active Days: 52	11.41	48.92	127.31	0.13	0.63	2.44	3.07	0.23	2.21	2.43	18,933.18
Asphalt 03/27/2013-02/27/2015	2.56	9.14	10.28	0.00	0.01	0.65	0.66	0.00	0.60	0.60	1,452.77
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.40	8.82	9.09	0.00	0.00	0.64	0.64	0.00	0.59	0.59	1,272.41
Paving On Road Diesel	0.02	0.27	0.09	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.06	1.09	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.82
Building 08/15/2013-12/11/2015	8.84	39.77	117.04	0.13	0.62	1.79	2.41	0.22	1.61	1.83	17,480.41
Building Off Road Diesel	5.03	21.61	18.90	0.00	0.00	0.98	0.98	0.00	0.90	0.90	3,806.24
Building Vendor Trips	1.16	13.65	12.32	0.03	0.13	0.53	0.67	0.05	0.49	0.53	3,626.63
Building Worker Trips	2.66	4.52	85.82	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,047.54
Time Slice 1/1/2014-4/25/2014 Active Days: 83	10.56	44.72	119.28	0.13	0.63	2.22	2.85	0.23	2.01	2.23	18,936.71
Asphalt 03/27/2013-02/27/2015	2.43	8.65	10.11	0.00	0.01	0.61	0.62	0.00	0.56	0.57	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	36.07	109.17	0.13	0.62	1.61	2.23	0.22	1.44	1.67	17,483.91
Building Off Road Diesel	4.66	19.91	18.38	0.00	0.00	0.87	0.87	0.00	0.80	0.80	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74

10/12/2011 10:48:18 AM

Time Slice 4/28/2014-12/31/2014 Active Days: 178	33.52	44.76	120.08	0.13	0.64	2.22	2.86	0.23	2.01	2.24	19,037.50
Asphalt 03/27/2013-02/27/2015	2.43	8.65	10.11	0.00	0.01	0.61	0.62	0.00	0.56	0.57	1,452.81
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.27	8.36	9.01	0.00	0.00	0.60	0.60	0.00	0.55	0.55	1,272.41
Paving On Road Diesel	0.02	0.24	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	1.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.87
Building 08/15/2013-12/11/2015	8.13	36.07	109.17	0.13	0.62	1.61	2.23	0.22	1.44	1.67	17,483.91
Building Off Road Diesel	4.66	19.91	18.38	0.00	0.00	0.87	0.87	0.00	0.80	0.80	3,806.24
Building Vendor Trips	1.06	12.02	11.42	0.03	0.13	0.47	0.61	0.05	0.43	0.48	3,626.93
Building Worker Trips	2.42	4.14	79.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,050.74
Coating 04/28/2014-10/28/2015	22.97	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79
Architectural Coating	22.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.80	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.79

Time Slice 1/1/2015-2/27/2015 Active Days: 42	37.47	40.70	112.56	0.13	0.64	2.08	2.72	0.23	1.88	2.10	19,040.48
Asphalt 03/27/2013-02/27/2015	2.28	8.10	9.94	0.00	0.01	0.57	0.57	0.00	0.52	0.52	1,452.84
Paving Off-Gas	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.12	7.84	8.93	0.00	0.00	0.55	0.55	0.00	0.51	0.51	1,272.41
Paving On Road Diesel	0.02	0.21	0.08	0.00	0.00	0.01	0.01	0.00	0.01	0.01	52.53
Paving Worker Trips	0.03	0.05	0.93	0.00	0.01	0.00	0.01	0.00	0.00	0.01	127.90
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	27.74	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	27.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Time Slice 3/2/2015-10/28/2015 Active Days: 173	35.19	32.60	102.62	0.13	0.63	1.51	2.14	0.22	1.36	1.58	17,587.64
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33
Coating 04/28/2014-10/28/2015	27.74	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82
Architectural Coating	27.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.02	0.04	0.74	0.00	0.00	0.00	0.01	0.00	0.00	0.00	100.82

Time Slice 10/29/2015-12/11/2015 Active Days: 32	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building 08/15/2013-12/11/2015	7.46	32.56	101.88	0.13	0.62	1.51	2.13	0.22	1.36	1.58	17,486.83
Building Off Road Diesel	4.29	18.22	17.92	0.00	0.00	0.82	0.82	0.00	0.76	0.76	3,806.24
Building Vendor Trips	0.96	10.56	10.58	0.03	0.13	0.42	0.55	0.05	0.38	0.43	3,627.25
Building Worker Trips	2.20	3.78	73.38	0.10	0.49	0.27	0.76	0.18	0.22	0.39	10,053.33

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

10/12/2011 10:48:51 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOScenario3Phase1-2-3Construction.urb924

Project Name: One Paseo Scenario 3 Phase 1, 2 and 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012 TOTALS (tons/year unmitigated)	0.07	0.71	0.32	0.00	1.42	0.03	1.45	0.30	0.03	0.32	100.74
2012 TOTALS (tons/year mitigated)	0.07	0.58	0.32	0.00	0.10	0.03	0.13	0.02	0.02	0.05	100.74
Percent Reduction	0.00	17.65	0.00	0.00	92.87	12.74	91.20	92.78	12.74	85.93	0.00
2013 TOTALS (tons/year unmitigated)	2.21	18.89	14.04	0.02	28.65	0.91	29.56	5.99	0.83	6.83	3,215.27
2013 TOTALS (tons/year mitigated)	2.21	14.47	14.04	0.02	2.07	0.67	2.74	0.44	0.61	1.06	3,215.27
Percent Reduction	0.00	23.41	0.00	0.00	92.78	26.23	90.74	92.62	26.29	84.54	0.00
2014 TOTALS (tons/year unmitigated)	8.89	7.84	15.64	0.02	0.08	0.46	0.54	0.03	0.42	0.45	2,480.21
2014 TOTALS (tons/year mitigated)	3.42	5.84	15.64	0.02	0.08	0.29	0.37	0.03	0.26	0.29	2,480.21
Percent Reduction	61.53	25.53	0.00	0.00	0.00	37.05	31.39	0.00	37.45	34.98	0.00
2015 TOTALS (tons/year unmitigated)	10.05	5.42	12.87	0.02	0.08	0.29	0.37	0.03	0.26	0.29	2,200.97
2015 TOTALS (tons/year mitigated)	3.95	4.20	12.87	0.02	0.08	0.20	0.28	0.03	0.18	0.21	2,200.97
Percent Reduction	60.68	22.52	0.00	0.00	0.00	32.03	25.29	0.00	32.54	29.45	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2012	0.07	0.71	0.32	0.00	1.42	0.03	1.45	0.30	0.03	0.32	100.74
Mass Grading 12/17/2012-10/17/2013	0.07	0.71	0.32	0.00	1.42	0.03	1.45	0.30	0.03	0.32	100.74
Mass Grading Dust	0.00	0.00	0.00	0.00	1.42	0.00	1.42	0.30	0.00	0.30	0.00
Mass Grading Off Road Diesel	0.04	0.31	0.17	0.00	0.00	0.02	0.02	0.00	0.01	0.01	31.43
Mass Grading On Road Diesel	0.03	0.39	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	67.90
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41

2013	2.21	18.89	14.04	0.02	28.65	0.91	29.56	5.99	0.83	6.83	3,215.27
Mass Grading 12/17/2012-10/17/2013	1.17	12.15	5.58	0.01	26.85	0.51	27.36	5.61	0.47	6.09	1,904.94
Mass Grading Dust	0.00	0.00	0.00	0.00	26.80	0.00	26.80	5.60	0.00	5.60	0.00
Mass Grading Off Road Diesel	0.69	5.54	3.03	0.00	0.00	0.27	0.27	0.00	0.25	0.25	594.40
Mass Grading On Road Diesel	0.47	6.60	2.32	0.01	0.04	0.25	0.29	0.01	0.23	0.24	1,283.95
Mass Grading Worker Trips	0.01	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.59
Asphalt 03/27/2013-02/27/2015	0.26	1.50	1.03	0.00	0.00	0.13	0.13	0.00	0.12	0.12	145.28
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.24	1.47	0.91	0.00	0.00	0.13	0.13	0.00	0.12	0.12	127.24
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.25
Paving Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.78
Fine Grading 05/08/2013-10/18/2013	0.34	2.75	1.64	0.00	1.77	0.13	1.90	0.37	0.12	0.49	299.78
Fine Grading Dust	0.00	0.00	0.00	0.00	1.77	0.00	1.77	0.37	0.00	0.37	0.00
Fine Grading Off Road Diesel	0.34	2.74	1.55	0.00	0.00	0.13	0.13	0.00	0.12	0.12	289.22
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.56
Building 08/15/2013-12/11/2015	0.44	2.49	5.79	0.01	0.03	0.13	0.16	0.01	0.12	0.13	865.28
Building Off Road Diesel	0.25	1.59	0.94	0.00	0.00	0.09	0.09	0.00	0.08	0.08	188.41
Building Vendor Trips	0.06	0.68	0.61	0.00	0.01	0.03	0.03	0.00	0.02	0.03	179.52
Building Worker Trips	0.13	0.22	4.25	0.00	0.02	0.01	0.04	0.01	0.01	0.02	497.35

10/12/2011 10:48:52 AM

2014	8.89	7.84	15.64	0.02	0.08	0.46	0.54	0.03	0.42	0.45	2,480.21
Asphalt 03/27/2013-02/27/2015	0.32	1.86	1.32	0.00	0.00	0.16	0.16	0.00	0.15	0.15	189.59
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.30	1.82	1.18	0.00	0.00	0.16	0.16	0.00	0.14	0.14	166.05
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Paving Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.69
Building 08/15/2013-12/11/2015	1.06	5.98	14.25	0.02	0.08	0.30	0.38	0.03	0.27	0.30	2,281.65
Building Off Road Diesel	0.61	3.87	2.40	0.00	0.00	0.21	0.21	0.00	0.19	0.19	496.71
Building Vendor Trips	0.14	1.57	1.49	0.00	0.02	0.06	0.08	0.01	0.06	0.06	473.31
Building Worker Trips	0.32	0.54	10.36	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,311.62
Coating 04/28/2014-10/28/2015	7.52	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.97
Architectural Coating	7.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.97

2015	10.05	5.42	12.87	0.02	0.08	0.29	0.37	0.03	0.26	0.29	2,200.97
Asphalt 03/27/2013-02/27/2015	0.05	0.28	0.21	0.00	0.00	0.02	0.02	0.00	0.02	0.02	30.51
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.04	0.27	0.19	0.00	0.00	0.02	0.02	0.00	0.02	0.02	26.72
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.69
Building 08/15/2013-12/11/2015	0.92	5.13	12.58	0.02	0.08	0.27	0.35	0.03	0.24	0.27	2,159.62
Building Off Road Diesel	0.53	3.36	2.21	0.00	0.00	0.18	0.18	0.00	0.17	0.17	470.07
Building Vendor Trips	0.12	1.30	1.31	0.00	0.02	0.05	0.07	0.01	0.05	0.05	447.97
Building Worker Trips	0.27	0.47	9.06	0.01	0.06	0.03	0.09	0.02	0.03	0.05	1,241.59
Coating 04/28/2014-10/28/2015	9.08	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.84
Architectural Coating	9.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.84

Phase Assumptions

Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 0

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 8 hours per day

2 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Low

Onsite Cut/Fill: 2057 cubic yards/day; Offsite Cut/Fill: 0 cubic yards/day

On Road Truck Travel (VMT): 3066.48

Off-Road Equipment:

2 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

3 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

3 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

2 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

Acres to be Paved: 22.14

Off-Road Equipment:

1 Pavers (100 hp) operating at a 0.62 load factor for 8 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

2 Rollers (95 hp) operating at a 0.56 load factor for 6 hours per day

Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

Off-Road Equipment:

1 Aerial Lifts (60 hp) operating at a 0.46 load factor for 8 hours per day

2 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 8 hours per day

2 Cranes (399 hp) operating at a 0.43 load factor for 7 hours per day

4 Forklifts (145 hp) operating at a 0.3 load factor for 7 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Other Material Handling Equipment (191 hp) operating at a 0.59 load factor for 8 hours per day

2 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2012	0.07	0.58	0.32	0.00	0.10	0.03	0.13	0.02	0.02	0.05	100.74
Mass Grading 12/17/2012-10/17/2013	0.07	0.58	0.32	0.00	0.10	0.03	0.13	0.02	0.02	0.05	100.74
Mass Grading Dust	0.00	0.00	0.00	0.00	0.10	0.00	0.10	0.02	0.00	0.02	0.00
Mass Grading Off Road Diesel	0.04	0.19	0.17	0.00	0.00	0.01	0.01	0.00	0.01	0.01	31.43
Mass Grading On Road Diesel	0.03	0.39	0.14	0.00	0.00	0.01	0.02	0.00	0.01	0.01	67.90
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41

10/12/2011 10:48:52 AM

2013	2.21	14.47	14.04	0.02	2.07	0.67	2.74	0.44	0.61	1.06	3,215.27
Mass Grading 12/17/2012-10/17/2013	1.17	9.93	5.58	0.01	1.91	0.45	2.36	0.41	0.41	0.82	1,904.94
Mass Grading Dust	0.00	0.00	0.00	0.00	1.87	0.00	1.87	0.39	0.00	0.39	0.00
Mass Grading Off Road Diesel	0.69	3.32	3.03	0.00	0.00	0.20	0.20	0.00	0.18	0.18	594.40
Mass Grading On Road Diesel	0.47	6.60	2.32	0.01	0.04	0.25	0.29	0.01	0.23	0.24	1,283.95
Mass Grading Worker Trips	0.01	0.01	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.59
Asphalt 03/27/2013-02/27/2015	0.26	0.91	1.03	0.00	0.00	0.07	0.07	0.00	0.06	0.06	145.28
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.24	0.88	0.91	0.00	0.00	0.06	0.06	0.00	0.06	0.06	127.24
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.25
Paving Worker Trips	0.00	0.01	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	12.78
Fine Grading 05/08/2013-10/18/2013	0.34	1.65	1.64	0.00	0.12	0.07	0.19	0.03	0.06	0.09	299.78
Fine Grading Dust	0.00	0.00	0.00	0.00	0.12	0.00	0.12	0.03	0.00	0.03	0.00
Fine Grading Off Road Diesel	0.34	1.64	1.55	0.00	0.00	0.07	0.07	0.00	0.06	0.06	289.22
Fine Grading On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fine Grading Worker Trips	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.56
Building 08/15/2013-12/11/2015	0.44	1.97	5.79	0.01	0.03	0.09	0.12	0.01	0.08	0.09	865.28
Building Off Road Diesel	0.25	1.07	0.94	0.00	0.00	0.05	0.05	0.00	0.04	0.04	188.41
Building Vendor Trips	0.06	0.68	0.61	0.00	0.01	0.03	0.03	0.00	0.02	0.03	179.52
Building Worker Trips	0.13	0.22	4.25	0.00	0.02	0.01	0.04	0.01	0.01	0.02	497.35

2014	3.42	5.84	15.64	0.02	0.08	0.29	0.37	0.03	0.26	0.29	2,480.21
Asphalt 03/27/2013-02/27/2015	0.32	1.13	1.32	0.00	0.00	0.08	0.08	0.00	0.07	0.07	189.59
Paving Off-Gas	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.30	1.09	1.18	0.00	0.00	0.08	0.08	0.00	0.07	0.07	166.05
Paving On Road Diesel	0.00	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.86
Paving Worker Trips	0.00	0.01	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.69
Building 08/15/2013-12/11/2015	1.06	4.71	14.25	0.02	0.08	0.21	0.29	0.03	0.19	0.22	2,281.65
Building Off Road Diesel	0.61	2.60	2.40	0.00	0.00	0.11	0.11	0.00	0.10	0.10	496.71
Building Vendor Trips	0.14	1.57	1.49	0.00	0.02	0.06	0.08	0.01	0.06	0.06	473.31
Building Worker Trips	0.32	0.54	10.36	0.01	0.06	0.04	0.10	0.02	0.03	0.05	1,311.62
Coating 04/28/2014-10/28/2015	2.04	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.97
Architectural Coating	2.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.97

2015	3.95	4.20	12.87	0.02	0.08	0.20	0.28	0.03	0.18	0.21	2,200.97
Asphalt 03/27/2013-02/27/2015	0.05	0.17	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	30.51
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.04	0.16	0.19	0.00	0.00	0.01	0.01	0.00	0.01	0.01	26.72
Paving On Road Diesel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.69
Building 08/15/2013-12/11/2015	0.92	4.02	12.58	0.02	0.08	0.19	0.26	0.03	0.17	0.19	2,159.62
Building Off Road Diesel	0.53	2.25	2.21	0.00	0.00	0.10	0.10	0.00	0.09	0.09	470.07
Building Vendor Trips	0.12	1.30	1.31	0.00	0.02	0.05	0.07	0.01	0.05	0.05	447.97
Building Worker Trips	0.27	0.47	9.06	0.01	0.06	0.03	0.09	0.02	0.03	0.05	1,241.59
Coating 04/28/2014-10/28/2015	2.98	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.84
Architectural Coating	2.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	10.84

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Fine Grading 5/8/2013 - 10/18/2013 - Grading - Blocks A, B, C

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Mass Grading 12/17/2012 - 10/17/2013 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Apply soil stabilizers to inactive areas mitigation reduces emissions by:

PM10: 84% PM25: 84%

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Graders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Water Trucks, the Diesel Particulate Filter (DPF) 3rd Tier mitigation reduces emissions by:

PM10: 25% PM25: 25%

For Water Trucks, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Paving 3/27/2013 - 2/27/2015 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Pavers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Paving Equipment, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Paving Equipment, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Rollers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Rollers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

10/12/2011 10:48:52 AM

The following mitigation measures apply to Phase: Building Construction 8/15/2013 - 12/11/2015 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cranes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Forklifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Forklifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Generator Sets, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Generator Sets, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Welders, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Welders, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

For Aerial Lifts, the Diesel Particulate Filter (DPF) 2nd Tier mitigation reduces emissions by:

PM10: 50% PM25: 50%

For Aerial Lifts, the Diesel Oxidation Catalyst 40% mitigation reduces emissions by:

NOX: 40%

The following mitigation measures apply to Phase: Architectural Coating 4/28/2014 - 10/28/2015 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

5/11/2010 10:57:35 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 Operation.urb924

Project Name: Community Plaza District Phase 1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/11/2010 10:57:35 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	5.50	6.30	11.41	0.00	0.03	0.03	7,476.44
TOTALS (lbs/day, mitigated)	3.49	5.05	9.12	0.00	0.03	0.03	5,983.39
Percent Reduction	36.55	19.84	20.07	NaN	0.00	0.00	19.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	52.66	69.91	543.22	0.64	126.61	24.49	68,296.29
TOTALS (lbs/day, mitigated)	24.44	29.03	225.41	0.26	52.54	10.16	28,339.25
Percent Reduction	53.59	58.48	58.50	59.38	58.50	58.51	58.51

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	58.16	76.21	554.63	0.64	126.64	24.52	75,772.73
TOTALS (lbs/day, mitigated)	27.93	34.08	234.53	0.26	52.57	10.19	34,322.64
Percent Reduction	51.98	55.28	57.71	59.38	58.49	58.44	54.70

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.45	6.22	5.23	0.00	0.01	0.01	7,465.20
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	0.00						
Architectural Coatings	4.56						
TOTALS (lbs/day, unmitigated)	5.50	6.30	11.41	0.00	0.03	0.03	7,476.44

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.36	4.98	4.18	0.00	0.01	0.01	5,972.16
Hearth - No Summer Emissions							
Landscape	0.39	0.07	4.94	0.00	0.02	0.02	11.23
Consumer Products	0.00						
Architectural Coatings	2.74						
TOTALS (lbs/day, mitigated)	3.49	5.05	9.12	0.00	0.03	0.03	5,983.39

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/11/2010 10:57:35 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Hotel	5.95	7.43	56.19	0.07	13.27	2.57	7,129.69
Strip mall	14.23	17.86	135.91	0.15	30.67	5.94	16,570.26
General office building	14.24	19.30	151.84	0.18	35.75	6.91	19,285.43
Office park	18.24	25.32	199.28	0.24	46.92	9.07	25,310.91
TOTALS (lbs/day, unmitigated)	52.66	69.91	543.22	0.64	126.61	24.49	68,296.29

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Hotel	2.94	3.11	23.49	0.03	5.55	1.07	2,981.06
Strip mall	6.31	7.51	57.12	0.06	12.89	2.50	6,963.76
General office building	6.76	7.96	62.60	0.07	14.74	2.85	7,952.04
Office park	8.43	10.45	82.20	0.10	19.36	3.74	10,442.39
TOTALS (lbs/day, mitigated)	24.44	29.03	225.41	0.26	52.54	10.16	28,339.25

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

5/11/2010 10:57:35 AM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		10.00	rooms	150.00	1,500.00	7,696.14
Strip mall		40.00	1000 sq ft	109.00	4,360.00	17,776.76
General office building		10.00	1000 sq ft	295.10	2,951.00	20,728.17
Office park		12.91	1000 sq ft	300.00	3,873.00	27,204.40
					12,684.00	73,405.47

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

5/11/2010 10:57:35 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0
General office building				48.0	24.0	28.0
Office park				48.0	24.0	28.0

5/11/2010 10:58:29 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 Operation.urb924

Project Name: Community Plaza District Phase 1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/11/2010 10:58:29 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.95	1.15	1.51	0.00	0.00	0.00	1,363.41
TOTALS (tons/year, mitigated)	0.61	0.92	1.21	0.00	0.00	0.00	1,090.93
Percent Reduction	35.79	20.00	19.87	NaN	NaN	NaN	19.99

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	10.03	13.84	103.32	0.11	23.10	4.47	12,240.37
TOTALS (tons/year, mitigated)	4.51	5.74	42.88	0.05	9.58	1.86	5,079.09
Percent Reduction	55.03	58.53	58.50	54.55	58.53	58.39	58.51

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	10.98	14.99	104.83	0.11	23.10	4.47	13,603.78
TOTALS (tons/year, mitigated)	5.12	6.66	44.09	0.05	9.58	1.86	6,170.02
Percent Reduction	53.37	55.57	57.94	54.55	58.53	58.39	54.64

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.08	1.14	0.95	0.00	0.00	0.00	1,362.40
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.04	0.01	0.56	0.00	0.00	0.00	1.01
Consumer Products	0.00						
Architectural Coatings	0.83						
TOTALS (tons/year, unmitigated)	0.95	1.15	1.51	0.00	0.00	0.00	1,363.41

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.07	0.91	0.76	0.00	0.00	0.00	1,089.92
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.04	0.01	0.45	0.00	0.00	0.00	1.01
Consumer Products	0.00						
Architectural Coatings	0.50						
TOTALS (tons/year, mitigated)	0.61	0.92	1.21	0.00	0.00	0.00	1,090.93

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/11/2010 10:58:29 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Hotel	1.12	1.47	10.77	0.01	2.42	0.47	1,277.71
Strip mall	2.78	3.53	26.26	0.03	5.60	1.08	2,969.90
General office building	2.68	3.82	28.67	0.03	6.52	1.26	3,456.42
Office park	3.45	5.02	37.62	0.04	8.56	1.66	4,536.34
TOTALS (tons/year, unmitigated)	10.03	13.84	103.32	0.11	23.10	4.47	12,240.37

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Hotel	0.53	0.61	4.50	0.01	1.01	0.20	534.24
Strip mall	1.21	1.48	11.04	0.01	2.35	0.46	1,248.12
General office building	1.22	1.58	11.82	0.01	2.69	0.52	1,425.20
Office park	1.55	2.07	15.52	0.02	3.53	0.68	1,871.53
TOTALS (tons/year, mitigated)	4.51	5.74	42.88	0.05	9.58	1.86	5,079.09

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

5/11/2010 10:58:29 AM

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Hotel		10.00	rooms	150.00	1,500.00	7,696.14
Strip mall		40.00	1000 sq ft	109.00	4,360.00	17,776.76
General office building		10.00	1000 sq ft	295.10	2,951.00	20,728.17
Office park		12.91	1000 sq ft	300.00	3,873.00	27,204.40
					12,684.00	73,405.47

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

5/11/2010 10:58:29 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Strip mall				2.0	1.0	97.0
General office building				48.0	24.0	28.0
Office park				48.0	24.0	28.0

5/11/2010 10:59:50 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 and 2 Operation.urb924

Project Name: Community Plaza District Phase 1 and 2 Operation

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/11/2010 10:59:50 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	17.89	8.35	15.52	0.00	0.04	0.04	10,012.27
TOTALS (lbs/day, mitigated)	15.13	6.68	12.42	0.00	0.04	0.04	8,013.19
Percent Reduction	15.43	20.00	19.97	NaN	0.00	0.00	19.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	81.04	108.46	837.76	0.98	195.48	37.81	105,366.30
TOTALS (lbs/day, mitigated)	39.55	48.97	378.97	0.44	88.48	17.11	47,698.15
Percent Reduction	51.20	54.85	54.76	55.10	54.74	54.75	54.73

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	98.93	116.81	853.28	0.98	195.52	37.85	115,378.57
TOTALS (lbs/day, mitigated)	54.68	55.65	391.39	0.44	88.52	17.15	55,711.34
Percent Reduction	44.73	52.36	54.13	55.10	54.73	54.69	51.71

5/11/2010 10:59:50 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.60	8.23	6.25	0.00	0.01	0.01	9,995.42
Hearth - No Summer Emissions							
Landscape	0.74	0.12	9.27	0.00	0.03	0.03	16.85
Consumer Products	10.32						
Architectural Coatings	6.23						
TOTALS (lbs/day, unmitigated)	17.89	8.35	15.52	0.00	0.04	0.04	10,012.27

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.48	6.58	5.00	0.00	0.01	0.01	7,996.34
Hearth - No Summer Emissions							
Landscape	0.59	0.10	7.42	0.00	0.03	0.03	16.85
Consumer Products	10.32						
Architectural Coatings	3.74						
TOTALS (lbs/day, mitigated)	15.13	6.68	12.42	0.00	0.04	0.04	8,013.19

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/11/2010 10:59:50 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	6.78	8.77	69.56	0.08	16.35	3.16	8,827.48
Hotel	5.95	7.43	56.19	0.07	13.27	2.57	7,129.69
Regnl shop. center	21.60	29.78	224.98	0.26	52.52	10.16	28,242.53
Strip mall	14.23	17.86	135.91	0.15	30.67	5.94	16,570.26
General office building	14.24	19.30	151.84	0.18	35.75	6.91	19,285.43
Office park	18.24	25.32	199.28	0.24	46.92	9.07	25,310.91
TOTALS (lbs/day, unmitigated)	81.04	108.46	837.76	0.98	195.48	37.81	105,366.30

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	6.01	7.58	60.15	0.07	14.13	2.73	7,632.31
Hotel	2.94	3.11	23.49	0.03	5.55	1.07	2,981.06
Regnl shop. center	9.10	12.36	93.41	0.11	21.81	4.22	11,726.59
Strip mall	6.31	7.51	57.12	0.06	12.89	2.50	6,963.76
General office building	6.76	7.96	62.60	0.07	14.74	2.85	7,952.04
Office park	8.43	10.45	82.20	0.10	19.36	3.74	10,442.39
TOTALS (lbs/day, mitigated)	39.55	48.97	378.97	0.44	88.48	17.11	47,698.15

Operational Settings:

Includes correction for passby trips

5/11/2010 10:59:50 AM

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	13.19	6.00	dwelling units	211.00	1,266.00	9,476.34
Hotel		10.00	rooms	150.00	1,500.00	7,696.14
Regnl shop. center		150.00	1000 sq ft	43.00	6,450.00	30,446.78
Strip mall		40.00	1000 sq ft	109.00	4,360.00	17,776.76
General office building		10.00	1000 sq ft	295.10	2,951.00	20,728.17
Office park		12.91	1000 sq ft	300.00	3,873.00	27,204.40
					20,400.00	113,328.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0
General office building				48.0	24.0	28.0
Office park				48.0	24.0	28.0

5/11/2010 11:00:30 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 and 2 Operation.urb924

Project Name: Community Plaza District Phase 1 and 2 Operation

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	3.20	1.51	1.97	0.00	0.00	0.00	1,826.09
TOTALS (tons/year, mitigated)	2.70	1.21	1.58	0.00	0.00	0.00	1,461.26
Percent Reduction	15.63	19.87	19.80	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	15.54	21.47	159.71	0.18	35.66	6.90	18,883.99
TOTALS (tons/year, mitigated)	7.40	9.69	72.20	0.08	16.14	3.13	8,548.60
Percent Reduction	52.38	54.87	54.79	55.56	54.74	54.64	54.73

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	18.74	22.98	161.68	0.18	35.66	6.90	20,710.08
TOTALS (tons/year, mitigated)	10.10	10.90	73.78	0.08	16.14	3.13	10,009.86
Percent Reduction	46.10	52.57	54.37	55.56	54.74	54.64	51.67

5/11/2010 11:00:30 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.11	1.50	1.14	0.00	0.00	0.00	1,824.16
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Landscape	0.07	0.01	0.83	0.00	0.00	0.00	1.52
Consumer Products	1.88						
Architectural Coatings	1.14						
TOTALS (tons/year, unmitigated)	3.20	1.51	1.97	0.00	0.00	0.00	1,826.09

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.09	1.20	0.91	0.00	0.00	0.00	1,459.33
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.41
Landscape	0.05	0.01	0.67	0.00	0.00	0.00	1.52
Consumer Products	1.88						
Architectural Coatings	0.68						
TOTALS (tons/year, mitigated)	2.70	1.21	1.58	0.00	0.00	0.00	1,461.26

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	1.26	1.74	13.13	0.02	2.98	0.58	1,582.14
Hotel	1.12	1.47	10.77	0.01	2.42	0.47	1,277.71
Regnl shop. center	4.25	5.89	43.26	0.05	9.58	1.85	5,061.48
Strip mall	2.78	3.53	26.26	0.03	5.60	1.08	2,969.90
General office building	2.68	3.82	28.67	0.03	6.52	1.26	3,456.42
Office park	3.45	5.02	37.62	0.04	8.56	1.66	4,536.34
TOTALS (tons/year, unmitigated)	15.54	21.47	159.71	0.18	35.66	6.90	18,883.99

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	1.11	1.50	11.36	0.01	2.58	0.50	1,367.93
Hotel	0.53	0.61	4.50	0.01	1.01	0.20	534.24
Regnl shop. center	1.78	2.45	17.96	0.02	3.98	0.77	2,101.58
Strip mall	1.21	1.48	11.04	0.01	2.35	0.46	1,248.12
General office building	1.22	1.58	11.82	0.01	2.69	0.52	1,425.20
Office park	1.55	2.07	15.52	0.02	3.53	0.68	1,871.53
TOTALS (tons/year, mitigated)	7.40	9.69	72.20	0.08	16.14	3.13	8,548.60

Operational Settings:

Includes correction for passby trips

5/11/2010 11:00:30 AM

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	13.19	6.00	dwelling units	211.00	1,266.00	9,476.34
Hotel		10.00	rooms	150.00	1,500.00	7,696.14
Regnl shop. center		150.00	1000 sq ft	43.00	6,450.00	30,446.78
Strip mall		40.00	1000 sq ft	109.00	4,360.00	17,776.76
General office building		10.00	1000 sq ft	295.10	2,951.00	20,728.17
Office park		12.91	1000 sq ft	300.00	3,873.00	27,204.40
					20,400.00	113,328.59

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0
General office building				48.0	24.0	28.0
Office park				48.0	24.0	28.0

5/11/2010 11:01:30 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 2 and 3 Operation.urb924

Project Name: Community Plaza, Central East, and Western Districts Phase 1, 2 and 3 Operations

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/11/2010 11:01:30 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	40.82	12.07	18.94	0.00	0.06	0.06	14,681.72
TOTALS (lbs/day, mitigated)	36.74	9.66	15.14	0.00	0.05	0.05	11,749.30
Percent Reduction	10.00	19.97	20.06	NaN	16.67	16.67	19.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	82.35	94.04	799.03	1.23	245.42	47.19	132,458.75
TOTALS (lbs/day, mitigated)	43.30	45.83	390.95	0.60	120.25	23.12	64,911.75
Percent Reduction	47.42	51.27	51.07	51.22	51.00	51.01	50.99

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	123.17	106.11	817.97	1.23	245.48	47.25	147,140.47
TOTALS (lbs/day, mitigated)	80.04	55.49	406.09	0.60	120.30	23.17	76,661.05
Percent Reduction	35.02	47.71	50.35	51.22	50.99	50.96	47.90

5/11/2010 11:01:30 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.89	11.93	8.12	0.00	0.02	0.02	14,662.06
Hearth - No Summer Emissions							
Landscape	0.86	0.14	10.82	0.00	0.04	0.04	19.66
Consumer Products	29.75						
Architectural Coatings	9.32						
TOTALS (lbs/day, unmitigated)	40.82	12.07	18.94	0.00	0.06	0.06	14,681.72

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.71	9.54	6.49	0.00	0.02	0.02	11,729.65
Hearth - No Summer Emissions							
Landscape	0.69	0.12	8.65	0.00	0.03	0.03	19.65
Consumer Products	29.75						
Architectural Coatings	5.59						
TOTALS (lbs/day, mitigated)	36.74	9.66	15.14	0.00	0.05	0.05	11,749.30

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/11/2010 11:01:30 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	13.70	14.86	129.82	0.20	40.26	7.74	21,758.58
Hotel	4.56	4.88	40.60	0.06	12.67	2.43	6,809.56
Regnl shop. center	16.29	19.56	162.41	0.25	50.11	9.63	26,974.26
Strip mall	10.75	11.72	97.89	0.15	29.27	5.63	15,825.79
Supermarket	12.32	13.70	114.41	0.17	34.21	6.59	18,497.30
General office building	10.86	12.68	109.80	0.17	34.12	6.56	18,419.21
Office park	13.87	16.64	144.10	0.23	44.78	8.61	24,174.05
TOTALS (lbs/day, unmitigated)	82.35	94.04	799.03	1.23	245.42	47.19	132,458.75

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	12.21	12.85	112.25	0.18	34.81	6.69	18,812.63
Hotel	2.29	2.04	16.97	0.03	5.30	1.02	2,847.21
Regnl shop. center	6.87	8.12	67.43	0.10	20.81	4.00	11,199.99
Strip mall	4.79	4.93	41.14	0.06	12.30	2.37	6,650.89
Supermarket	5.40	5.80	48.45	0.07	14.49	2.79	7,832.79
General office building	5.24	5.23	45.27	0.07	14.07	2.70	7,594.87
Office park	6.50	6.86	59.44	0.09	18.47	3.55	9,973.37
TOTALS (lbs/day, mitigated)	43.30	45.83	390.95	0.60	120.25	23.12	64,911.75

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 25.56   Nonresidential Trip % Reduction: 4.43

Analysis Year: 2020 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	38.00	5.14	dwelling units	608.00	3,122.70	23,374.23
Hotel		9.56	rooms	150.00	1,433.61	7,355.48
Regnl shop. center		143.36	1000 sq ft	43.00	6,164.50	29,099.10
Strip mall		38.23	1000 sq ft	109.00	4,167.01	16,989.91
Supermarket		66.90	1000 sq ft	72.80	4,870.43	19,857.93
General office building		9.56	1000 sq ft	295.10	2,820.38	19,810.67
Office park		12.34	1000 sq ft	300.00	3,701.57	26,000.24
					26,280.20	142,487.56

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
General office building				48.0	24.0	28.0

5/11/2010 11:01:30 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Office park				48.0	24.0	28.0

5/11/2010 11:02:09 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 2 and 3 Operation.urb924

Project Name: Community Plaza, Central East, and Western Districts Phase 1, 2 and 3 Operations

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/11/2010 11:02:09 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	7.37	2.19	2.45	0.00	0.00	0.00	2,678.78
TOTALS (tons/year, mitigated)	6.64	1.75	1.97	0.00	0.00	0.00	2,143.61
Percent Reduction	9.91	20.09	19.59	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	15.75	18.63	152.62	0.23	44.79	8.61	23,736.10
TOTALS (tons/year, mitigated)	8.07	9.09	74.59	0.10	21.94	4.22	11,631.98
Percent Reduction	48.76	51.21	51.13	56.52	51.02	50.99	50.99

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	23.12	20.82	155.07	0.23	44.79	8.61	26,414.88
TOTALS (tons/year, mitigated)	14.71	10.84	76.56	0.10	21.94	4.22	13,775.59
Percent Reduction	36.38	47.93	50.63	56.52	51.02	50.99	47.85

5/11/2010 11:02:09 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.16	2.18	1.48	0.00	0.00	0.00	2,675.83
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Landscape	0.08	0.01	0.97	0.00	0.00	0.00	1.77
Consumer Products	5.43						
Architectural Coatings	1.70						
TOTALS (tons/year, unmitigated)	7.37	2.19	2.45	0.00	0.00	0.00	2,678.78

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.13	1.74	1.19	0.00	0.00	0.00	2,140.66
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	1.18
Landscape	0.06	0.01	0.78	0.00	0.00	0.00	1.77
Consumer Products	5.43						
Architectural Coatings	1.02						
TOTALS (tons/year, mitigated)	6.64	1.75	1.97	0.00	0.00	0.00	2,143.61

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/11/2010 11:02:09 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	2.51	2.95	24.56	0.04	7.35	1.41	3,899.15
Hotel	0.86	0.97	7.79	0.01	2.31	0.44	1,220.15
Regnl shop. center	3.20	3.87	31.23	0.05	9.15	1.76	4,833.43
Strip mall	2.10	2.32	18.91	0.03	5.34	1.03	2,836.03
Supermarket	2.42	2.71	22.10	0.03	6.24	1.20	3,314.77
General office building	2.04	2.51	20.77	0.03	6.23	1.20	3,300.66
Office park	2.62	3.30	27.26	0.04	8.17	1.57	4,331.91
TOTALS (tons/year, unmitigated)	15.75	18.63	152.62	0.23	44.79	8.61	23,736.10

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	2.22	2.55	21.24	0.03	6.35	1.22	3,371.24
Hotel	0.41	0.40	3.26	0.00	0.97	0.19	510.17
Regnl shop. center	1.34	1.61	12.97	0.02	3.80	0.73	2,006.89
Strip mall	0.92	0.98	7.95	0.01	2.24	0.43	1,191.86
Supermarket	1.05	1.15	9.36	0.01	2.64	0.51	1,403.66
General office building	0.94	1.04	8.56	0.01	2.57	0.49	1,360.97
Office park	1.19	1.36	11.25	0.02	3.37	0.65	1,787.19
TOTALS (tons/year, mitigated)	8.07	9.09	74.59	0.10	21.94	4.22	11,631.98

Operational Settings:

5/11/2010 11:02:09 AM

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 25.56   Nonresidential Trip % Reduction: 4.43

Analysis Year: 2020 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	38.00	5.14	dwelling units	608.00	3,122.70	23,374.23
Hotel		9.56	rooms	150.00	1,433.61	7,355.48
Regnl shop. center		143.36	1000 sq ft	43.00	6,164.50	29,099.10
Strip mall		38.23	1000 sq ft	109.00	4,167.01	16,989.91
Supermarket		66.90	1000 sq ft	72.80	4,870.43	19,857.93
General office building		9.56	1000 sq ft	295.10	2,820.38	19,810.67
Office park		12.34	1000 sq ft	300.00	3,701.57	26,000.24
					26,280.20	142,487.56

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
Strip mall				2.0	1.0	97.0
Supermarket				2.0	1.0	97.0
General office building				48.0	24.0	28.0

5/11/2010 11:02:09 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Office park				48.0	24.0	28.0

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 Construction.urb924

Project Name: Community Plaza District Phase 1 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (lbs/day unmitigated)	15.14	220.05	75.33	0.26	30.99	8.10	39.09	6.59	7.45	14.04	30,470.60
2011 TOTALS (lbs/day mitigated)	15.14	216.53	75.33	0.26	5.72	7.10	12.82	1.31	6.54	7.85	30,470.60
2012 TOTALS (lbs/day unmitigated)	136.64	234.63	136.12	0.32	31.30	9.77	41.07	6.70	8.97	15.67	39,452.10
2012 TOTALS (lbs/day mitigated)	90.60	227.10	136.12	0.32	6.03	6.98	13.02	1.43	6.41	7.83	39,452.10

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

Time Slice 11/28/2011-12/30/2011 Active Days: 25	15.14	220.05	75.33	0.26	30.99	8.10	39.09	6.59	7.45	14.04	30,470.60
Mass Grading 11/28/2011-04/19/2012	15.14	220.05	75.33	0.26	30.99	8.10	39.09	6.59	7.45	14.04	30,470.60
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.83	23.44	11.96	0.00	0.00	1.17	1.17	0.00	1.08	1.08	2,247.32
Mass Grading On Road Diesel	12.28	196.55	62.48	0.26	0.98	6.93	7.91	0.32	6.37	6.69	28,130.45
Mass Grading Worker Trips	0.03	0.06	0.89	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.84
Time Slice 1/2/2012-2/3/2012 Active Days: 25	14.03	197.37	68.92	0.26	30.99	7.20	38.19	6.59	6.62	13.21	30,470.58
Mass Grading 11/28/2011-04/19/2012	14.03	197.37	68.92	0.26	30.99	7.20	38.19	6.59	6.62	13.21	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82
Time Slice 2/6/2012-2/10/2012 Active Days: 5	19.03	220.53	125.12	0.32	31.29	8.58	39.86	6.70	7.87	14.57	37,939.45
Building 02/06/2012-08/17/2012	5.00	23.16	56.20	0.06	0.30	1.38	1.67	0.11	1.25	1.36	7,468.87
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Mass Grading 11/28/2011-04/19/2012	14.03	197.37	68.92	0.26	30.99	7.20	38.19	6.59	6.62	13.21	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 2/13/2012-3/2/2012 Active Days: 15	21.50	234.56	135.01	0.32	31.30	9.77	41.06	6.70	8.97	15.67	39,327.42
Asphalt 02/13/2012-06/29/2012	2.47	14.03	9.89	0.00	0.01	1.19	1.20	0.00	1.09	1.10	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	23.16	56.20	0.06	0.30	1.38	1.67	0.11	1.25	1.36	7,468.87
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Mass Grading 11/28/2011-04/19/2012	14.03	197.37	68.92	0.26	30.99	7.20	38.19	6.59	6.62	13.21	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 3/5/2012-4/19/2012 Active Days: 34	136.64	234.63	136.12	0.32	31.30	9.77	41.07	6.70	8.97	15.67	39,452.10
Asphalt 02/13/2012-06/29/2012	2.47	14.03	9.89	0.00	0.01	1.19	1.20	0.00	1.09	1.10	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	23.16	56.20	0.06	0.30	1.38	1.67	0.11	1.25	1.36	7,468.87
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	115.14	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	115.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Mass Grading 11/28/2011-04/19/2012	14.03	197.37	68.92	0.26	30.99	7.20	38.19	6.59	6.62	13.21	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	30.00	0.00	30.00	6.27	0.00	6.27	0.00
Mass Grading Off Road Diesel	2.69	21.95	11.51	0.00	0.00	1.07	1.07	0.00	0.99	0.99	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 4/20/2012-6/29/2012 Active Days: 51	122.61	37.26	67.20	0.06	0.31	2.57	2.88	0.11	2.35	2.46	8,981.52
Asphalt 02/13/2012-06/29/2012	2.47	14.03	9.89	0.00	0.01	1.19	1.20	0.00	1.09	1.10	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	13.48	8.10	0.00	0.00	1.17	1.17	0.00	1.07	1.07	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	23.16	56.20	0.06	0.30	1.38	1.67	0.11	1.25	1.36	7,468.87
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	115.14	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	115.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Time Slice 7/2/2012-8/17/2012 Active Days: 35	120.14	23.23	57.31	0.06	0.30	1.38	1.68	0.11	1.25	1.36	7,593.55
Building 02/06/2012-08/17/2012	5.00	23.16	56.20	0.06	0.30	1.38	1.67	0.11	1.25	1.36	7,468.87
Building Off Road Diesel	3.14	14.81	10.52	0.00	0.00	1.04	1.04	0.00	0.95	0.95	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	115.14	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	115.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68

Time Slice 8/20/2012-9/21/2012 Active Days: 25	115.14	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Coating 03/05/2012-09/21/2012	115.14	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	115.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68

Phase Assumptions

Phase: Mass Grading 11/28/2011 - 4/19/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 6987.18

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/13/2012 - 6/29/2012 - Default Paving Description

Acres to be Paved: 5.9

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 2/6/2012 - 8/17/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 3/5/2012 - 9/21/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 11/28/2011-12/30/2011 Active Days: 25	15.14	216.53	75.33	0.26	5.72	7.10	12.82	1.31	6.54	7.85	30,470.60
Mass Grading 11/28/2011-04/19/2012	15.14	216.53	75.33	0.26	5.72	7.10	12.82	1.31	6.54	7.85	30,470.60
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	2.83	19.92	11.96	0.00	0.00	0.18	0.18	0.00	0.16	0.16	2,247.32
Mass Grading On Road Diesel	12.28	196.55	62.48	0.26	0.98	6.93	7.91	0.32	6.37	6.69	28,130.45
Mass Grading Worker Trips	0.03	0.06	0.89	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.84

Time Slice 1/2/2012-2/3/2012 Active Days: 25	14.03	194.08	68.92	0.26	5.72	6.29	12.01	1.31	5.79	7.10	30,470.58
Mass Grading 11/28/2011-04/19/2012	14.03	194.08	68.92	0.26	5.72	6.29	12.01	1.31	5.79	7.10	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	2.69	18.65	11.51	0.00	0.00	0.16	0.16	0.00	0.15	0.15	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82
Time Slice 2/6/2012-2/10/2012 Active Days: 5	19.03	215.02	125.12	0.32	6.01	6.78	12.80	1.42	6.22	7.64	37,939.45
Building 02/06/2012-08/17/2012	5.00	20.94	56.20	0.06	0.30	0.50	0.79	0.11	0.44	0.55	7,468.87
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Mass Grading 11/28/2011-04/19/2012	14.03	194.08	68.92	0.26	5.72	6.29	12.01	1.31	5.79	7.10	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	2.69	18.65	11.51	0.00	0.00	0.16	0.16	0.00	0.15	0.15	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 2/13/2012-3/2/2012 Active Days: 15	21.50	227.03	135.01	0.32	6.03	6.98	13.01	1.42	6.40	7.83	39,327.42
Asphalt 02/13/2012-06/29/2012	2.47	12.01	9.89	0.00	0.01	0.20	0.21	0.00	0.18	0.18	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	11.46	8.10	0.00	0.00	0.18	0.18	0.00	0.16	0.16	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	20.94	56.20	0.06	0.30	0.50	0.79	0.11	0.44	0.55	7,468.87
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Mass Grading 11/28/2011-04/19/2012	14.03	194.08	68.92	0.26	5.72	6.29	12.01	1.31	5.79	7.10	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	2.69	18.65	11.51	0.00	0.00	0.16	0.16	0.00	0.15	0.15	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 3/5/2012-4/19/2012 Active Days: 34	90.60	227.10	**136.12**	**0.32**	6.03	6.98	13.02	1.43	6.41	7.83	**39,452.10**
Asphalt 02/13/2012-06/29/2012	2.47	12.01	9.89	0.00	0.01	0.20	0.21	0.00	0.18	0.18	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	11.46	8.10	0.00	0.00	0.18	0.18	0.00	0.16	0.16	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	20.94	56.20	0.06	0.30	0.50	0.79	0.11	0.44	0.55	7,468.87
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	69.10	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	69.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Mass Grading 11/28/2011-04/19/2012	14.03	194.08	68.92	0.26	5.72	6.29	12.01	1.31	5.79	7.10	30,470.58
Mass Grading Dust	0.00	0.00	0.00	0.00	4.73	0.00	4.73	0.99	0.00	0.99	0.00
Mass Grading Off Road Diesel	2.69	18.65	11.51	0.00	0.00	0.16	0.16	0.00	0.15	0.15	2,247.32
Mass Grading On Road Diesel	11.31	175.37	56.57	0.26	0.98	6.13	7.11	0.32	5.64	5.96	28,130.45
Mass Grading Worker Trips	0.03	0.05	0.83	0.00	0.00	0.00	0.01	0.00	0.00	0.00	92.82

Time Slice 4/20/2012-6/29/2012 Active Days: 51	76.57	33.02	67.20	0.06	0.31	0.70	1.01	0.11	0.62	0.73	8,981.52
Asphalt 02/13/2012-06/29/2012	2.47	12.01	9.89	0.00	0.01	0.20	0.21	0.00	0.18	0.18	1,387.97
Paving Off-Gas	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.23	11.46	8.10	0.00	0.00	0.18	0.18	0.00	0.16	0.16	1,131.92
Paving On Road Diesel	0.03	0.44	0.14	0.00	0.00	0.02	0.02	0.00	0.01	0.01	70.42
Paving Worker Trips	0.06	0.11	1.65	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.63
Building 02/06/2012-08/17/2012	5.00	20.94	56.20	0.06	0.30	0.50	0.79	0.11	0.44	0.55	7,468.87
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	69.10	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	69.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Time Slice 7/2/2012-8/17/2012 Active Days: 35	74.10	21.01	57.31	0.06	0.30	0.50	0.80	0.11	0.44	0.55	7,593.55
Building 02/06/2012-08/17/2012	5.00	20.94	56.20	0.06	0.30	0.50	0.79	0.11	0.44	0.55	7,468.87
Building Off Road Diesel	3.14	12.59	10.52	0.00	0.00	0.16	0.16	0.00	0.14	0.14	1,621.20
Building Vendor Trips	0.43	5.63	4.44	0.01	0.05	0.20	0.25	0.02	0.19	0.20	1,219.59
Building Worker Trips	1.43	2.72	41.24	0.04	0.25	0.14	0.39	0.09	0.11	0.20	4,628.08
Coating 03/05/2012-09/21/2012	69.10	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	69.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68

Time Slice 8/20/2012-9/21/2012 Active Days: 25	69.10	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Coating 03/05/2012-09/21/2012	69.10	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68
Architectural Coating	69.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.04	0.07	1.11	0.00	0.01	0.00	0.01	0.00	0.00	0.01	124.68

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/28/2011 - 4/19/2012 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 2/13/2012 - 6/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 2/6/2012 - 8/17/2012 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 3/5/2012 - 9/21/2012 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

5/11/2010 10:51:11 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 Construction.urb924

Project Name: Community Plaza District Phase 1 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011 TOTALS (tons/year unmitigated)	0.19	2.75	0.94	0.00	0.39	0.10	0.49	0.08	0.09	0.18	380.88
2011 TOTALS (tons/year mitigated)	0.19	2.71	0.94	0.00	0.07	0.09	0.16	0.02	0.08	0.10	380.88
Percent Reduction	0.00	1.60	0.00	0.00	81.55	12.30	67.20	80.08	12.30	44.11	0.00
2012 TOTALS (tons/year unmitigated)	9.38	10.12	7.23	0.01	1.25	0.44	1.69	0.27	0.40	0.67	1,804.85
2012 TOTALS (tons/year mitigated)	6.04	9.74	7.23	0.01	0.25	0.29	0.54	0.06	0.27	0.33	1,804.85
Percent Reduction	35.60	3.82	0.00	0.00	80.12	33.44	67.93	77.75	33.54	51.18	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

5/11/2010 10:51:11 AM

2011	0.19	2.75	0.94	0.00	0.39	0.10	0.49	0.08	0.09	0.18	380.88
Mass Grading 11/28/2011-04/19/2012	0.19	2.75	0.94	0.00	0.39	0.10	0.49	0.08	0.09	0.18	380.88
Mass Grading Dust	0.00	0.00	0.00	0.00	0.38	0.00	0.38	0.08	0.00	0.08	0.00
Mass Grading Off Road Diesel	0.04	0.29	0.15	0.00	0.00	0.01	0.01	0.00	0.01	0.01	28.09
Mass Grading On Road Diesel	0.15	2.46	0.78	0.00	0.01	0.09	0.10	0.00	0.08	0.08	351.63
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16

2012	9.38	10.12	7.23	0.01	1.25	0.44	1.69	0.27	0.40	0.67	1,804.85
Mass Grading 11/28/2011-04/19/2012	0.55	7.80	2.72	0.01	1.22	0.28	1.51	0.26	0.26	0.52	1,203.59
Mass Grading Dust	0.00	0.00	0.00	0.00	1.19	0.00	1.19	0.25	0.00	0.25	0.00
Mass Grading Off Road Diesel	0.11	0.87	0.45	0.00	0.00	0.04	0.04	0.00	0.04	0.04	88.77
Mass Grading On Road Diesel	0.45	6.93	2.23	0.01	0.04	0.24	0.28	0.01	0.22	0.24	1,111.15
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Building 02/06/2012-08/17/2012	0.35	1.62	3.93	0.00	0.02	0.10	0.12	0.01	0.09	0.09	522.82
Building Off Road Diesel	0.22	1.04	0.74	0.00	0.00	0.07	0.07	0.00	0.07	0.07	113.48
Building Vendor Trips	0.03	0.39	0.31	0.00	0.00	0.01	0.02	0.00	0.01	0.01	85.37
Building Worker Trips	0.10	0.19	2.89	0.00	0.02	0.01	0.03	0.01	0.01	0.01	323.97
Asphalt 02/13/2012-06/29/2012	0.12	0.70	0.49	0.00	0.00	0.06	0.06	0.00	0.05	0.05	69.40
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.11	0.67	0.40	0.00	0.00	0.06	0.06	0.00	0.05	0.05	56.60
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52
Paving Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.28
Coating 03/05/2012-09/21/2012	8.35	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.04
Architectural Coating	8.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.04

Phase Assumptions

Phase: Mass Grading 11/28/2011 - 4/19/2012 - Default Fine Site Grading Description

Total Acres Disturbed: 23

Maximum Daily Acreage Disturbed: 1.5

Fugitive Dust Level of Detail: Default

20 lbs per acre-day

On Road Truck Travel (VMT): 6987.18

Off-Road Equipment:

1 Graders (174 hp) operating at a 0.61 load factor for 6 hours per day

1 Rubber Tired Dozers (357 hp) operating at a 0.59 load factor for 6 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

1 Water Trucks (189 hp) operating at a 0.5 load factor for 8 hours per day

Phase: Paving 2/13/2012 - 6/29/2012 - Default Paving Description

Acres to be Paved: 5.9

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 2/6/2012 - 8/17/2012 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 3/5/2012 - 9/21/2012 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

5/11/2010 10:51:11 AM

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2011	0.19	2.71	0.94	0.00	0.07	0.09	0.16	0.02	0.08	0.10	380.88
Mass Grading 11/28/2011-04/19/2012	0.19	2.71	0.94	0.00	0.07	0.09	0.16	0.02	0.08	0.10	380.88
Mass Grading Dust	0.00	0.00	0.00	0.00	0.06	0.00	0.06	0.01	0.00	0.01	0.00
Mass Grading Off Road Diesel	0.04	0.25	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.09
Mass Grading On Road Diesel	0.15	2.46	0.78	0.00	0.01	0.09	0.10	0.00	0.08	0.08	351.63
Mass Grading Worker Trips	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.16

2012	6.04	9.74	7.23	0.01	0.25	0.29	0.54	0.06	0.27	0.33	1,804.85
Mass Grading 11/28/2011-04/19/2012	0.55	7.67	2.72	0.01	0.23	0.25	0.47	0.05	0.23	0.28	1,203.59
Mass Grading Dust	0.00	0.00	0.00	0.00	0.19	0.00	0.19	0.04	0.00	0.04	0.00
Mass Grading Off Road Diesel	0.11	0.74	0.45	0.00	0.00	0.01	0.01	0.00	0.01	0.01	88.77
Mass Grading On Road Diesel	0.45	6.93	2.23	0.01	0.04	0.24	0.28	0.01	0.22	0.24	1,111.15
Mass Grading Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
Building 02/06/2012-08/17/2012	0.35	1.47	3.93	0.00	0.02	0.03	0.06	0.01	0.03	0.04	522.82
Building Off Road Diesel	0.22	0.88	0.74	0.00	0.00	0.01	0.01	0.00	0.01	0.01	113.48
Building Vendor Trips	0.03	0.39	0.31	0.00	0.00	0.01	0.02	0.00	0.01	0.01	85.37
Building Worker Trips	0.10	0.19	2.89	0.00	0.02	0.01	0.03	0.01	0.01	0.01	323.97
Asphalt 02/13/2012-06/29/2012	0.12	0.60	0.49	0.00	0.00	0.01	0.01	0.00	0.01	0.01	69.40
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.11	0.57	0.40	0.00	0.00	0.01	0.01	0.00	0.01	0.01	56.60
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.52
Paving Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.28
Coating 03/05/2012-09/21/2012	5.01	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.04
Architectural Coating	5.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.01	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.04

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Mass Grading 11/28/2011 - 4/19/2012 - Default Fine Site Grading Description

For Soil Stablizing Measures, the Replace ground cover in disturbed areas quickly mitigation reduces emissions by:

PM10: 5% PM25: 5%

For Soil Stablizing Measures, the Water exposed surfaces 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Soil Stablizing Measures, the Equipment loading/unloading mitigation reduces emissions by:

PM10: 69% PM25: 69%

For Unpaved Roads Measures, the Reduce speed on unpaved roads to less than 15 mph mitigation reduces emissions by:

PM10: 44% PM25: 44%

For Unpaved Roads Measures, the Manage haul road dust 2x daily watering mitigation reduces emissions by:

PM10: 55% PM25: 55%

For Graders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Graders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rubber Tired Dozers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rubber Tired Dozers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Water Trucks, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Water Trucks, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Paving 2/13/2012 - 6/29/2012 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 2/6/2012 - 8/17/2012 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 3/5/2012 - 9/21/2012 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 and 2 Construction.urb924

Project Name: Community Plaza District Phase 1 and 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (lbs/day unmitigated)	39.92	31.67	36.62	0.03	0.14	2.22	2.35	0.05	2.03	2.08	5,549.03
2013 TOTALS (lbs/day mitigated)	26.35	27.66	36.62	0.03	0.14	0.50	0.64	0.05	0.45	0.50	5,549.03

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/7/2013-1/11/2013 Active Days: 5	3.62	18.27	26.62	0.02	0.12	1.11	1.23	0.04	1.01	1.05	4,113.32
Building 01/07/2013-08/16/2013	3.62	18.27	26.62	0.02	0.12	1.11	1.23	0.04	1.01	1.05	4,113.32
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23

Time Slice 1/14/2013-3/1/2013 Active Days: 35	37.56	18.29	26.92	0.02	0.12	1.11	1.23	0.04	1.01	1.06	4,150.07
Building 01/07/2013-08/16/2013	3.62	18.27	26.62	0.02	0.12	1.11	1.23	0.04	1.01	1.05	4,113.32
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	33.94	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	33.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Time Slice 3/4/2013-6/28/2013 Active Days: 85	**39.92**	**31.67**	**36.62**	**0.03**	**0.14**	**2.22**	**2.35**	**0.05**	**2.03**	**2.08**	**5,549.03**
Asphalt 03/04/2013-06/28/2013	2.36	13.38	9.70	0.00	0.01	1.11	1.12	0.00	1.02	1.03	1,398.96
Paving Off-Gas	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	12.84	8.03	0.00	0.00	1.09	1.09	0.00	1.00	1.00	1,131.92
Paving On Road Diesel	0.03	0.45	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	81.44
Paving Worker Trips	0.05	0.10	1.53	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.60
Building 01/07/2013-08/16/2013	3.62	18.27	26.62	0.02	0.12	1.11	1.23	0.04	1.01	1.05	4,113.32
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	33.94	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	33.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75

Time Slice 7/1/2013-8/16/2013 Active Days: 35	37.56	18.29	26.92	0.02	0.12	1.11	1.23	0.04	1.01	1.06	4,150.07
Building 01/07/2013-08/16/2013	3.62	18.27	26.62	0.02	0.12	1.11	1.23	0.04	1.01	1.05	4,113.32
Building Off Road Diesel	2.88	13.91	10.20	0.00	0.00	0.93	0.93	0.00	0.86	0.86	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	33.94	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	33.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Time Slice 8/19/2013-9/20/2013 Active Days: 25	33.94	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Coating 01/14/2013-09/21/2013	33.94	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	33.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75

Phase Assumptions

Phase: Paving 3/4/2013 - 6/28/2013 - Default Paving Description

Acres to be Paved: 5.8

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 1/7/2013 - 8/16/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/14/2013 - 9/21/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/7/2013-1/11/2013 Active Days: 5	3.62	16.18	26.62	0.02	0.12	0.31	0.44	0.04	0.28	0.33	4,113.32
Building 01/07/2013-08/16/2013	3.62	16.18	26.62	0.02	0.12	0.31	0.44	0.04	0.28	0.33	4,113.32
Building Off Road Diesel	2.88	11.82	10.20	0.00	0.00	0.14	0.14	0.00	0.13	0.13	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23

Time Slice 1/14/2013-3/1/2013 Active Days: 35	23.99	16.20	26.92	0.02	0.12	0.32	0.44	0.04	0.28	0.33	4,150.07
Building 01/07/2013-08/16/2013	3.62	16.18	26.62	0.02	0.12	0.31	0.44	0.04	0.28	0.33	4,113.32
Building Off Road Diesel	2.88	11.82	10.20	0.00	0.00	0.14	0.14	0.00	0.13	0.13	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	20.37	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	20.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Time Slice 3/4/2013-6/28/2013 Active Days: 85	26.35	27.66	**36.62**	**0.03**	**0.14**	0.50	0.64	**0.05**	0.45	0.50	**5,549.03**
Asphalt 03/04/2013-06/28/2013	2.36	11.46	9.70	0.00	0.01	0.18	0.20	0.00	0.17	0.17	1,398.96
Paving Off-Gas	0.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.10	10.91	8.03	0.00	0.00	0.16	0.16	0.00	0.15	0.15	1,131.92
Paving On Road Diesel	0.03	0.45	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	81.44
Paving Worker Trips	0.05	0.10	1.53	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.60
Building 01/07/2013-08/16/2013	3.62	16.18	26.62	0.02	0.12	0.31	0.44	0.04	0.28	0.33	4,113.32
Building Off Road Diesel	2.88	11.82	10.20	0.00	0.00	0.14	0.14	0.00	0.13	0.13	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	20.37	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	20.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75

Time Slice 7/1/2013-8/16/2013 Active Days: 35	23.99	16.20	26.92	0.02	0.12	0.32	0.44	0.04	0.28	0.33	4,150.07
Building 01/07/2013-08/16/2013	3.62	16.18	26.62	0.02	0.12	0.31	0.44	0.04	0.28	0.33	4,113.32
Building Off Road Diesel	2.88	11.82	10.20	0.00	0.00	0.14	0.14	0.00	0.13	0.13	1,621.20
Building Vendor Trips	0.27	3.47	2.69	0.01	0.03	0.13	0.16	0.01	0.12	0.13	826.89
Building Worker Trips	0.47	0.89	13.73	0.02	0.09	0.05	0.14	0.03	0.04	0.07	1,665.23
Coating 01/14/2013-09/21/2013	20.37	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	20.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Time Slice 8/19/2013-9/20/2013 Active Days: 25	20.37	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Coating 01/14/2013-09/21/2013	20.37	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75
Architectural Coating	20.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.01	0.02	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	36.75

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Paving 3/4/2013 - 6/28/2013 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/7/2013 - 8/16/2013 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/14/2013 - 9/21/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

5/11/2010 12:04:21 PM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 and 2 Construction.urb924

Project Name: Community Plaza District Phase 1 and 2 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2013 TOTALS (tons/year unmitigated)	3.44	2.03	2.57	0.00	0.01	0.14	0.15	0.00	0.12	0.13	391.83
2013 TOTALS (tons/year mitigated)	2.22	1.78	2.57	0.00	0.01	0.03	0.04	0.00	0.03	0.03	391.83
Percent Reduction	35.46	12.24	0.00	0.00	0.00	75.61	70.23	0.00	75.94	73.75	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2013	3.44	2.03	2.57	0.00	0.01	0.14	0.15	0.00	0.12	0.13	391.83
Building 01/07/2013-08/16/2013	0.29	1.46	2.13	0.00	0.01	0.09	0.10	0.00	0.08	0.08	329.07
Building Off Road Diesel	0.23	1.11	0.82	0.00	0.00	0.07	0.07	0.00	0.07	0.07	129.70
Building Vendor Trips	0.02	0.28	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	66.15
Building Worker Trips	0.04	0.07	1.10	0.00	0.01	0.00	0.01	0.00	0.00	0.01	133.22
Coating 01/14/2013-09/21/2013	3.05	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31
Architectural Coating	3.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31
Asphalt 03/04/2013-06/28/2013	0.10	0.57	0.41	0.00	0.00	0.05	0.05	0.00	0.04	0.04	59.46
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.09	0.55	0.34	0.00	0.00	0.05	0.05	0.00	0.04	0.04	48.11
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46
Paving Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.89

Phase Assumptions

Phase: Paving 3/4/2013 - 6/28/2013 - Default Paving Description

Acres to be Paved: 5.8

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

2 Paving Equipment (104 hp) operating at a 0.53 load factor for 6 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

Phase: Building Construction 1/7/2013 - 8/16/2013 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 1/14/2013 - 9/21/2013 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2013	2.22	1.78	2.57	0.00	0.01	0.03	0.04	0.00	0.03	0.03	391.83
Building 01/07/2013-08/16/2013	0.29	1.29	2.13	0.00	0.01	0.03	0.03	0.00	0.02	0.03	329.07
Building Off Road Diesel	0.23	0.95	0.82	0.00	0.00	0.01	0.01	0.00	0.01	0.01	129.70
Building Vendor Trips	0.02	0.28	0.21	0.00	0.00	0.01	0.01	0.00	0.01	0.01	66.15
Building Worker Trips	0.04	0.07	1.10	0.00	0.01	0.00	0.01	0.00	0.00	0.01	133.22
Coating 01/14/2013-09/21/2013	1.83	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31
Architectural Coating	1.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.31
Asphalt 03/04/2013-06/28/2013	0.10	0.49	0.41	0.00	0.00	0.01	0.01	0.00	0.01	0.01	59.46
Paving Off-Gas	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.09	0.46	0.34	0.00	0.00	0.01	0.01	0.00	0.01	0.01	48.11
Paving On Road Diesel	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.46
Paving Worker Trips	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.89

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Paving 3/4/2013 - 6/28/2013 - Default Paving Description

For Cement and Mortar Mixers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cement and Mortar Mixers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/7/2013 - 8/16/2013 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 1/14/2013 - 9/21/2013 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

5/11/2010 11:55:09 AM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 2 and 3 Construction.urb924

Project Name: Western Districts Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (lbs/day unmitigated)	96.81	33.68	49.20	0.05	0.24	2.21	2.45	0.09	2.02	2.10	7,900.14
2014 TOTALS (lbs/day mitigated)	60.59	30.26	49.20	0.05	0.24	0.79	1.03	0.09	0.71	0.80	7,900.14

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/6/2014-1/24/2014 Active Days: 15	3.89	20.19	38.04	0.04	0.22	1.12	1.35	0.08	1.02	1.10	6,248.99
Building 01/06/2014-05/16/2014	3.89	20.19	38.04	0.04	0.22	1.12	1.35	0.08	1.02	1.10	6,248.99
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64

Time Slice 1/27/2014-1/31/2014 Active Days: 5	6.24	33.63	48.46	0.05	0.24	2.20	2.44	0.08	2.02	2.10	7,802.09
Asphalt 01/27/2014-02/28/2014	2.35	13.44	10.42	0.00	0.01	1.08	1.09	0.00	0.99	1.00	1,553.10
Paving Off-Gas	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.06	12.89	8.85	0.00	0.00	1.06	1.06	0.00	0.98	0.98	1,272.04
Paving On Road Diesel	0.03	0.46	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	95.48
Paving Worker Trips	0.05	0.09	1.41	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.58
Building 01/06/2014-05/16/2014	3.89	20.19	38.04	0.04	0.22	1.12	1.35	0.08	1.02	1.10	6,248.99
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Time Slice 2/3/2014-2/28/2014 Active Days: 20	96.81	33.68	49.20	0.05	0.24	2.21	2.45	0.09	2.02	2.10	7,900.14
Asphalt 01/27/2014-02/28/2014	2.35	13.44	10.42	0.00	0.01	1.08	1.09	0.00	0.99	1.00	1,553.10
Paving Off-Gas	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.06	12.89	8.85	0.00	0.00	1.06	1.06	0.00	0.98	0.98	1,272.04
Paving On Road Diesel	0.03	0.46	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	95.48
Paving Worker Trips	0.05	0.09	1.41	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.58
Building 01/06/2014-05/16/2014	3.89	20.19	38.04	0.04	0.22	1.12	1.35	0.08	1.02	1.10	6,248.99
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Coating 02/03/2014-07/25/2014	90.57	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	90.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05

Time Slice 3/3/2014-5/16/2014 Active Days: 55	94.46	20.24	38.79	0.04	0.23	1.13	1.36	0.08	1.02	1.11	6,347.04
Building 01/06/2014-05/16/2014	3.89	20.19	38.04	0.04	0.22	1.12	1.35	0.08	1.02	1.10	6,248.99
Building Off Road Diesel	2.63	12.97	9.89	0.00	0.00	0.82	0.82	0.00	0.76	0.76	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Coating 02/03/2014-07/25/2014	90.57	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	90.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Time Slice 5/19/2014-7/25/2014 Active Days: 50	90.57	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Coating 02/03/2014-07/25/2014	90.57	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	90.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05

Phase Assumptions

Phase: Paving 1/27/2014 - 2/28/2014 - Default Paving Description

Acres to be Paved: 2

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/6/2014 - 5/16/2014 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 2/3/2014 - 7/25/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
Time Slice 1/6/2014-1/24/2014 Active Days: 15	3.89	18.24	38.04	0.04	0.22	0.42	0.65	0.08	0.38	0.46	6,248.99
Building 01/06/2014-05/16/2014	3.89	18.24	38.04	0.04	0.22	0.42	0.65	0.08	0.38	0.46	6,248.99
Building Off Road Diesel	2.63	11.03	9.89	0.00	0.00	0.12	0.12	0.00	0.11	0.11	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64

Time Slice 1/27/2014-1/31/2014 Active Days: 5	6.24	30.21	48.46	0.05	0.24	0.78	1.02	0.08	0.71	0.79	7,802.09
Asphalt 01/27/2014-02/28/2014	2.35	11.97	10.42	0.00	0.01	0.36	0.37	0.00	0.33	0.34	1,553.10
Paving Off-Gas	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.06	11.41	8.85	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,272.04
Paving On Road Diesel	0.03	0.46	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	95.48
Paving Worker Trips	0.05	0.09	1.41	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.58
Building 01/06/2014-05/16/2014	3.89	18.24	38.04	0.04	0.22	0.42	0.65	0.08	0.38	0.46	6,248.99
Building Off Road Diesel	2.63	11.03	9.89	0.00	0.00	0.12	0.12	0.00	0.11	0.11	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Time Slice 2/3/2014-2/28/2014 Active Days: 20	60.59	30.26	49.20	0.05	0.24	0.79	1.03	0.09	0.71	0.80	7,900.14
Asphalt 01/27/2014-02/28/2014	2.35	11.97	10.42	0.00	0.01	0.36	0.37	0.00	0.33	0.34	1,553.10
Paving Off-Gas	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	2.06	11.41	8.85	0.00	0.00	0.34	0.34	0.00	0.31	0.31	1,272.04
Paving On Road Diesel	0.03	0.46	0.15	0.00	0.00	0.02	0.02	0.00	0.01	0.02	95.48
Paving Worker Trips	0.05	0.09	1.41	0.00	0.01	0.01	0.02	0.00	0.00	0.01	185.58
Building 01/06/2014-05/16/2014	3.89	18.24	38.04	0.04	0.22	0.42	0.65	0.08	0.38	0.46	6,248.99
Building Off Road Diesel	2.63	11.03	9.89	0.00	0.00	0.12	0.12	0.00	0.11	0.11	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Coating 02/03/2014-07/25/2014	54.35	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	54.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05

Time Slice 3/3/2014-5/16/2014 Active Days: 55	58.24	18.29	38.79	0.04	0.23	0.43	0.66	0.08	0.38	0.46	6,347.04
Building 01/06/2014-05/16/2014	3.89	18.24	38.04	0.04	0.22	0.42	0.65	0.08	0.38	0.46	6,248.99
Building Off Road Diesel	2.63	11.03	9.89	0.00	0.00	0.12	0.12	0.00	0.11	0.11	1,621.20
Building Vendor Trips	0.46	5.70	4.63	0.01	0.06	0.21	0.27	0.02	0.19	0.21	1,543.15
Building Worker Trips	0.79	1.52	23.52	0.03	0.17	0.09	0.26	0.06	0.07	0.13	3,084.64
Coating 02/03/2014-07/25/2014	54.35	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	54.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Time Slice 5/19/2014-7/25/2014 Active Days: 50	54.35	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Coating 02/03/2014-07/25/2014	54.35	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05
Architectural Coating	54.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.03	0.05	0.75	0.00	0.01	0.00	0.01	0.00	0.00	0.00	98.05

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Paving 1/27/2014 - 2/28/2014 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/6/2014 - 5/16/2014 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 2/3/2014 - 7/25/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

5/11/2010 11:55:09 AM

ROG: 40%

5/11/2010 11:58:23 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\San Diego Corporate Center Phase 1 2 and 3 Construction.urb924

Project Name: Western Districts Phase 3 Construction

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

CONSTRUCTION EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2
2014 TOTALS (tons/year unmitigated)	5.87	1.13	1.98	0.00	0.01	0.07	0.08	0.00	0.06	0.07	322.37
2014 TOTALS (tons/year mitigated)	3.61	1.02	1.98	0.00	0.01	0.02	0.04	0.00	0.02	0.03	322.37
Percent Reduction	38.53	9.81	0.00	0.00	0.00	63.07	54.07	0.00	63.67	59.79	0.00

Construction Unmitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2014	5.87	1.13	1.98	0.00	0.01	0.07	0.08	0.00	0.06	0.07	322.37
Building 01/06/2014-05/16/2014	0.18	0.96	1.81	0.00	0.01	0.05	0.06	0.00	0.05	0.05	296.83
Building Off Road Diesel	0.13	0.62	0.47	0.00	0.00	0.04	0.04	0.00	0.04	0.04	77.01
Building Vendor Trips	0.02	0.27	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01	73.30
Building Worker Trips	0.04	0.07	1.12	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.52
Asphalt 01/27/2014-02/28/2014	0.03	0.17	0.13	0.00	0.00	0.01	0.01	0.00	0.01	0.01	19.41
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.16	0.11	0.00	0.00	0.01	0.01	0.00	0.01	0.01	15.90
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32
Coating 02/03/2014-07/25/2014	5.66	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13
Architectural Coating	5.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13

Phase Assumptions

Phase: Paving 1/27/2014 - 2/28/2014 - Default Paving Description

Acres to be Paved: 2

Off-Road Equipment:

4 Cement and Mortar Mixers (10 hp) operating at a 0.56 load factor for 6 hours per day

1 Pavers (100 hp) operating at a 0.62 load factor for 7 hours per day

1 Paving Equipment (104 hp) operating at a 0.53 load factor for 8 hours per day

1 Rollers (95 hp) operating at a 0.56 load factor for 7 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 7 hours per day

Phase: Building Construction 1/6/2014 - 5/16/2014 - Default Building Construction Description

Off-Road Equipment:

1 Cranes (399 hp) operating at a 0.43 load factor for 6 hours per day

2 Forklifts (145 hp) operating at a 0.3 load factor for 6 hours per day

1 Generator Sets (49 hp) operating at a 0.74 load factor for 8 hours per day

1 Tractors/Loaders/Backhoes (108 hp) operating at a 0.55 load factor for 8 hours per day

3 Welders (45 hp) operating at a 0.45 load factor for 8 hours per day

Phase: Architectural Coating 2/3/2014 - 7/25/2014 - Default Architectural Coating Description

Rule: Residential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Residential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Interior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Rule: Nonresidential Exterior Coatings begins 1/1/2005 ends 12/31/2040 specifies a VOC of 250

Construction Mitigated Detail Report:

CONSTRUCTION EMISSION ESTIMATES Annual Tons Per Year, Mitigated

	ROG	NOx	CO	SO2	PM10 Dust	PM10 Exhaust	PM10	PM2.5 Dust	PM2.5 Exhaust	PM2.5	CO2

2014	3.61	1.02	1.98	0.00	0.01	0.02	0.04	0.00	0.02	0.03	322.37
Building 01/06/2014-05/16/2014	0.18	0.87	1.81	0.00	0.01	0.02	0.03	0.00	0.02	0.02	296.83
Building Off Road Diesel	0.13	0.52	0.47	0.00	0.00	0.01	0.01	0.00	0.01	0.01	77.01
Building Vendor Trips	0.02	0.27	0.22	0.00	0.00	0.01	0.01	0.00	0.01	0.01	73.30
Building Worker Trips	0.04	0.07	1.12	0.00	0.01	0.00	0.01	0.00	0.00	0.01	146.52
Asphalt 01/27/2014-02/28/2014	0.03	0.15	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	19.41
Paving Off-Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving Off Road Diesel	0.03	0.14	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	15.90
Paving On Road Diesel	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19
Paving Worker Trips	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32
Coating 02/03/2014-07/25/2014	3.40	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13
Architectural Coating	3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coating Worker Trips	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.13

Construction Related Mitigation Measures

The following mitigation measures apply to Phase: Paving 1/27/2014 - 2/28/2014 - Default Paving Description

For Pavers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Pavers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Paving Equipment, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Paving Equipment, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Rollers, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Rollers, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Building Construction 1/6/2014 - 5/16/2014 - Default Building Construction Description

For Cranes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Cranes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Forklifts, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Forklifts, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Generator Sets, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Generator Sets, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Tractors/Loaders/Backhoes, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Tractors/Loaders/Backhoes, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

For Welders, the Diesel Particulate Filter (DPF) 1st Tier mitigation reduces emissions by:

PM10: 85% PM25: 85%

For Welders, the Diesel Oxidation Catalyst 15% mitigation reduces emissions by:

NOX: 15%

The following mitigation measures apply to Phase: Architectural Coating 2/3/2014 - 7/25/2014 - Default Architectural Coating Description

For Residential Architectural Coating Measures, the Residential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Residential Architectural Coating Measures, the Residential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Exterior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

For Nonresidential Architectural Coating Measures, the Nonresidential Interior: Use Low VOC Coatings mitigation reduces emissions by:

ROG: 40%

5/26/2011 2:47:18 PM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1.urb924

Project Name: ONE PASEO Phase 1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 2:47:18 PM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.77	0.84	1.12	0.00	0.00	0.00	996.40
TOTALS (tons/year, mitigated)	0.49	0.66	0.89	0.00	0.00	0.00	797.27
Percent Reduction	36.36	21.43	20.54	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.06	11.11	83.04	0.10	18.54	3.59	9,823.26
TOTALS (tons/year, mitigated)	4.09	5.34	39.83	0.04	6.90	1.72	4,709.57
Percent Reduction	49.26	51.94	52.04	60.00	62.78	52.09	52.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.83	11.95	84.16	0.10	18.54	3.59	10,819.66
TOTALS (tons/year, mitigated)	4.58	6.00	40.72	0.04	6.90	1.72	5,506.84
Percent Reduction	48.13	49.79	51.62	60.00	62.78	52.09	49.10

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.83	0.70	0.00	0.00	0.00	995.64
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.68						
TOTALS (tons/year, unmitigated)	0.77	0.84	1.12	0.00	0.00	0.00	996.40

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.05	0.66	0.56	0.00	0.00	0.00	796.51
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.00	0.33	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.41						
TOTALS (tons/year, mitigated)	0.49	0.66	0.89	0.00	0.00	0.00	797.27

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/26/2011 2:47:18 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	2.57	3.26	24.25	0.03	5.17	1.00	2,742.39
General office building	2.11	2.95	22.01	0.03	5.00	0.97	2,646.54
Office park	3.38	4.90	36.78	0.04	8.37	1.62	4,434.33
TOTALS (tons/year, unmitigated)	8.06	11.11	83.04	0.10	18.54	3.59	9,823.26
Less OnRoad Reduction	0.00	0.00	0.00	0.00	2.00	0.00	0.00
TOTALS (tons/year, unmitigated)	8.06	11.11	83.04	0.10	16.54	3.59	9,823.26

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	1.29	1.59	11.81	0.01	2.52	0.49	1,335.43
General office building	1.09	1.41	10.50	0.01	2.39	0.46	1,262.06
Office park	1.71	2.34	17.52	0.02	3.99	0.77	2,112.08
TOTALS (tons/year, mitigated)	4.09	5.34	39.83	0.04	8.90	1.72	4,709.57
Less OnRoad Reduction	0.00	0.00	0.00	0.00	2.00	0.00	0.00
TOTALS (tons/year, mitigated)	4.09	5.34	39.83	0.04	6.90	1.72	4,709.57

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

5/26/2011 2:47:18 PM

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		40.00	1000 sq ft	100.65	4,026.00	16,414.97
General office building		10.00	1000 sq ft	245.00	2,450.00	15,890.83
Office park		13.01	1000 sq ft	291.00	3,785.91	26,592.67
					10,261.91	58,898.47

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

5/26/2011 2:47:18 PM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

5/26/2011 2:39:21 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase2.urb924

Project Name: ONE PASEO Phase 2

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 2:39:21 PM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	15.88	6.72	11.15	0.00	0.03	0.03	8,095.61
TOTALS (lbs/day, mitigated)	13.52	5.38	8.92	0.00	0.03	0.03	6,478.73
Percent Reduction	14.86	19.94	20.00	NaN	0.00	0.00	19.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	70.17	94.91	730.42	0.87	171.24	33.12	92,217.03
TOTALS (lbs/day, mitigated)	37.80	48.20	371.61	0.43	44.13	12.85	46,930.41
Percent Reduction	46.13	49.22	49.12	50.57	74.23	61.20	49.11

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	86.05	101.63	741.57	0.87	171.27	33.15	100,312.64
TOTALS (lbs/day, mitigated)	51.32	53.58	380.53	0.43	44.16	12.88	53,409.14
Percent Reduction	40.36	47.28	48.69	50.57	74.22	61.15	46.76

5/26/2011 2:39:21 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.49	6.64	4.97	0.00	0.01	0.01	8,084.37
Hearth - No Summer Emissions							
Landscape	0.49	0.08	6.18	0.00	0.02	0.02	11.24
Consumer Products	9.49						
Architectural Coatings	5.41						
TOTALS (lbs/day, unmitigated)	15.88	6.72	11.15	0.00	0.03	0.03	8,095.61

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.39	5.31	3.98	0.00	0.01	0.01	6,467.50
Hearth - No Summer Emissions							
Landscape	0.39	0.07	4.94	0.00	0.02	0.02	11.23
Consumer Products	9.49						
Architectural Coatings	3.25						
TOTALS (lbs/day, mitigated)	13.52	5.38	8.92	0.00	0.03	0.03	6,478.73

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/26/2011 2:39:21 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	4.87	5.96	47.28	0.06	11.11	2.15	6,000.04
Regnl shop. center	36.74	49.98	377.62	0.44	88.14	17.05	47,403.19
General office building	11.03	14.65	114.14	0.14	26.93	5.21	14,507.21
Office park	17.53	24.32	191.38	0.23	45.06	8.71	24,306.59
TOTALS (lbs/day, unmitigated)	70.17	94.91	730.42	0.87	171.24	33.12	92,217.03
Less OnRoad Reduction	0.00	0.00	0.00	0.00	43.00	4.00	0.00
TOTALS (lbs/day, unmitigated)	70.17	94.91	730.42	0.87	128.24	29.12	92,217.03

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	4.68	5.66	44.91	0.05	10.55	2.04	5,698.93
Regnl shop. center	18.04	23.94	180.84	0.21	42.21	8.16	22,700.63
General office building	5.93	7.00	54.54	0.06	12.87	2.49	6,932.18
Office park	9.15	11.60	91.32	0.11	21.50	4.16	11,598.67
TOTALS (lbs/day, mitigated)	37.80	48.20	371.61	0.43	87.13	16.85	46,930.41
Less OnRoad Reduction	0.00	0.00	0.00	0.00	43.00	4.00	0.00
TOTALS (lbs/day, mitigated)	37.80	48.20	371.61	0.43	44.13	12.85	46,930.41

Operational Settings:

Includes correction for passby trips

5/26/2011 2:39:21 PM

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 26.07 Nonresidential Trip % Reduction: 1.76

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	12.12	4.44	dwelling units	194.00	860.50	6,441.07
Regnl shop. center		65.11	1000 sq ft	166.26	10,825.89	51,102.87
General office building		9.82	1000 sq ft	245.00	2,406.91	15,611.33
Office park		12.78	1000 sq ft	291.00	3,719.32	26,124.95
					17,812.62	99,280.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

5/26/2011 2:39:51 PM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase2.urb924

Project Name: ONE PASEO Phase 2

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 2:39:51 PM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	2.85	1.22	1.47	0.00	0.00	0.00	1,476.79
TOTALS (tons/year, mitigated)	2.43	0.98	1.18	0.00	0.00	0.00	1,181.71
Percent Reduction	14.74	19.67	19.73	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	13.49	18.79	139.30	0.15	31.25	6.04	16,527.06
TOTALS (tons/year, mitigated)	7.13	9.55	70.82	0.08	8.10	3.07	8,410.86
Percent Reduction	47.15	49.18	49.16	46.67	74.08	49.17	49.11

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	16.34	20.01	140.77	0.15	31.25	6.04	18,003.85
TOTALS (tons/year, mitigated)	9.56	10.53	72.00	0.08	8.10	3.07	9,592.57
Percent Reduction	41.49	47.38	48.85	46.67	74.08	49.17	46.72

5/26/2011 2:39:51 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.09	1.21	0.91	0.00	0.00	0.00	1,475.40
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Landscape	0.04	0.01	0.56	0.00	0.00	0.00	1.01
Consumer Products	1.73						
Architectural Coatings	0.99						
TOTALS (tons/year, unmitigated)	2.85	1.22	1.47	0.00	0.00	0.00	1,476.79

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.07	0.97	0.73	0.00	0.00	0.00	1,180.32
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.38
Landscape	0.04	0.01	0.45	0.00	0.00	0.00	1.01
Consumer Products	1.73						
Architectural Coatings	0.59						
TOTALS (tons/year, mitigated)	2.43	0.98	1.18	0.00	0.00	0.00	1,181.71

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/26/2011 2:39:51 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	0.89	1.18	8.93	0.01	2.03	0.39	1,075.38
Regnl shop. center	7.20	9.89	72.61	0.08	16.09	3.11	8,495.35
General office building	2.08	2.90	21.63	0.02	4.91	0.95	2,599.99
Office park	3.32	4.82	36.13	0.04	8.22	1.59	4,356.34
TOTALS (tons/year, unmitigated)	13.49	18.79	139.30	0.15	31.25	6.04	16,527.06
Less OnRoad Reduction	0.00	0.00	0.00	0.00	7.80	0.00	0.00
TOTALS (tons/year, unmitigated)	13.49	18.79	139.30	0.15	23.45	6.04	16,527.06

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	0.85	1.12	8.48	0.01	1.93	0.37	1,021.41
Regnl shop. center	3.51	4.74	34.77	0.04	7.70	1.49	4,068.29
General office building	1.08	1.39	10.33	0.01	2.35	0.45	1,242.39
Office park	1.69	2.30	17.24	0.02	3.92	0.76	2,078.77
TOTALS (tons/year, mitigated)	7.13	9.55	70.82	0.08	15.90	3.07	8,410.86
Less OnRoad Reduction	0.00	0.00	0.00	0.00	7.80	0.00	0.00
TOTALS (tons/year, mitigated)	7.13	9.55	70.82	0.08	8.10	3.07	8,410.86

Operational Settings:

Includes correction for passby trips

5/26/2011 2:39:51 PM

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 26.07   Nonresidential Trip % Reduction: 1.76

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	12.12	4.44	dwelling units	194.00	860.50	6,441.07
Regnl shop. center		65.11	1000 sq ft	166.26	10,825.89	51,102.87
General office building		9.82	1000 sq ft	245.00	2,406.91	15,611.33
Office park		12.78	1000 sq ft	291.00	3,719.32	26,124.95
					17,812.62	99,280.22

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

5/26/2011 2:44:19 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1.urb924

Project Name: ONE PASEO Phase 1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 2:44:19 PM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	4.43	4.61	8.46	0.00	0.03	0.03	5,463.97
TOTALS (lbs/day, mitigated)	2.80	3.69	6.77	0.00	0.02	0.02	4,372.85
Percent Reduction	36.79	19.96	19.98	NaN	33.33	33.33	19.97

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	42.17	56.15	436.48	0.51	101.60	19.65	54,809.58
TOTALS (lbs/day, mitigated)	21.94	26.93	209.31	0.25	26.71	5.92	26,277.41
Percent Reduction	47.97	52.04	52.05	50.98	73.71	69.87	52.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	46.60	60.76	444.94	0.51	101.63	19.68	60,273.55
TOTALS (lbs/day, mitigated)	24.74	30.62	216.08	0.25	26.73	5.94	30,650.26
Percent Reduction	46.91	49.61	51.44	50.98	73.70	69.82	49.15

5/26/2011 2:44:19 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.33	4.55	3.82	0.00	0.01	0.01	5,455.54
Hearth - No Summer Emissions							
Landscape	0.37	0.06	4.64	0.00	0.02	0.02	8.43
Consumer Products	0.00						
Architectural Coatings	3.73						
TOTALS (lbs/day, unmitigated)	4.43	4.61	8.46	0.00	0.03	0.03	5,463.97

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.26	3.64	3.06	0.00	0.01	0.01	4,364.43
Hearth - No Summer Emissions							
Landscape	0.30	0.05	3.71	0.00	0.01	0.01	8.42
Consumer Products	0.00						
Architectural Coatings	2.24						
TOTALS (lbs/day, mitigated)	2.80	3.69	6.77	0.00	0.02	0.02	4,372.85

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/26/2011 2:44:19 PM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	13.14	16.49	125.50	0.14	28.32	5.48	15,300.89
General office building	11.21	14.91	116.18	0.14	27.41	5.30	14,766.93
Office park	17.82	24.75	194.80	0.23	45.87	8.87	24,741.76
TOTALS (lbs/day, unmitigated)	42.17	56.15	436.48	0.51	101.60	19.65	54,809.58
Less OnRoad Reduction	0.00	0.00	0.00	0.00	22.00	3.50	0.00
TOTALS (lbs/day, unmitigated)	42.17	56.15	436.48	0.51	79.60	16.15	54,809.58

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	6.67	8.03	61.11	0.07	13.79	2.67	7,450.89
General office building	6.00	7.11	55.41	0.07	13.07	2.53	7,041.95
Office park	9.27	11.79	92.79	0.11	21.85	4.22	11,784.57
TOTALS (lbs/day, mitigated)	21.94	26.93	209.31	0.25	48.71	9.42	26,277.41
Less OnRoad Reduction	0.00	0.00	0.00	0.00	22.00	3.50	0.00
TOTALS (lbs/day, mitigated)	21.94	26.93	209.31	0.25	26.71	5.92	26,277.41

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00   Nonresidential Trip % Reduction: 0.00

5/26/2011 2:44:19 PM

Analysis Year: 2015 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		40.00	1000 sq ft	100.65	4,026.00	16,414.97
General office building		10.00	1000 sq ft	245.00	2,450.00	15,890.83
Office park		13.01	1000 sq ft	291.00	3,785.91	26,592.67
					10,261.91	58,898.47

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

5/26/2011 11:44:07 AM

Urbemis 2007 Version 9.2.4

Combined Annual Emissions Reports (Tons/Year)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase1.urb924

Project Name: ONE PASEO Phase 1

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 11:44:07 AM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	0.77	0.84	1.12	0.00	0.00	0.00	996.40
TOTALS (tons/year, mitigated)	0.49	0.66	0.89	0.00	0.00	0.00	797.27
Percent Reduction	36.36	21.43	20.54	NaN	NaN	NaN	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.06	11.11	83.04	0.10	18.54	3.59	9,823.26
TOTALS (tons/year, mitigated)	4.09	5.34	39.83	0.04	8.90	1.72	4,709.57
Percent Reduction	49.26	51.94	52.04	60.00	52.00	52.09	52.06

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (tons/year, unmitigated)	8.83	11.95	84.16	0.10	18.54	3.59	10,819.66
TOTALS (tons/year, mitigated)	4.58	6.00	40.72	0.04	8.90	1.72	5,506.84
Percent Reduction	48.13	49.79	51.62	60.00	52.00	52.09	49.10

5/26/2011 11:44:07 AM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.06	0.83	0.70	0.00	0.00	0.00	995.64
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.01	0.42	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.68						
TOTALS (tons/year, unmitigated)	0.77	0.84	1.12	0.00	0.00	0.00	996.40

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.05	0.66	0.56	0.00	0.00	0.00	796.51
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscape	0.03	0.00	0.33	0.00	0.00	0.00	0.76
Consumer Products	0.00						
Architectural Coatings	0.41						
TOTALS (tons/year, mitigated)	0.49	0.66	0.89	0.00	0.00	0.00	797.27

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

5/26/2011 11:44:07 AM

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	2.57	3.26	24.25	0.03	5.17	1.00	2,742.39
General office building	2.11	2.95	22.01	0.03	5.00	0.97	2,646.54
Office park	3.38	4.90	36.78	0.04	8.37	1.62	4,434.33
TOTALS (tons/year, unmitigated)	8.06	11.11	83.04	0.10	18.54	3.59	9,823.26

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Annual Tons Per Year, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Strip mall	1.29	1.59	11.81	0.01	2.52	0.49	1,335.43
General office building	1.09	1.41	10.50	0.01	2.39	0.46	1,262.06
Office park	1.71	2.34	17.52	0.02	3.99	0.77	2,112.08
TOTALS (tons/year, mitigated)	4.09	5.34	39.83	0.04	8.90	1.72	4,709.57

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 0.00 Nonresidential Trip % Reduction: 0.00

Analysis Year: 2015 Season: Annual

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Strip mall		40.00	1000 sq ft	100.65	4,026.00	16,414.97
General office building		10.00	1000 sq ft	245.00	2,450.00	15,890.83
Office park		13.01	1000 sq ft	291.00	3,785.91	26,592.67
					10,261.91	58,898.47

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

5/26/2011 11:44:07 AM

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Strip mall				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

5/26/2011 2:36:18 PM

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: C:\Documents and Settings\MSlavick.HELIXLM\Application Data\Urbemis\Version9a\Projects\PASEOPhase3.urb924

Project Name: ONE PASEO Phase 3

Project Location: California State-wide

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

5/26/2011 2:36:18 PM

Summary Report:

AREA SOURCE EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	40.43	11.80	17.18	0.00	0.05	0.05	14,385.22
TOTALS (lbs/day, mitigated)	36.48	9.44	13.75	0.00	0.05	0.05	11,511.54
Percent Reduction	9.77	20.00	19.97	NaN	0.00	0.00	19.98

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	86.41	100.75	850.67	1.33	265.10	50.95	142,739.13
TOTALS (lbs/day, mitigated)	49.97	54.51	462.16	0.72	73.93	14.67	77,536.52
Percent Reduction	42.17	45.90	45.67	45.86	72.11	71.21	45.68

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
TOTALS (lbs/day, unmitigated)	126.84	112.55	867.85	1.33	265.15	51.00	157,124.35
TOTALS (lbs/day, mitigated)	86.45	63.95	475.91	0.72	73.98	14.72	89,048.06
Percent Reduction	31.84	43.18	45.16	45.86	72.10	71.14	43.33

5/26/2011 2:36:18 PM

Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.87	11.68	7.91	0.00	0.02	0.02	14,368.37
Hearth - No Summer Emissions							
Landscape	0.74	0.12	9.27	0.00	0.03	0.03	16.85
Consumer Products	29.75						
Architectural Coatings	9.07						
TOTALS (lbs/day, unmitigated)	40.43	11.80	17.18	0.00	0.05	0.05	14,385.22

Area Source Mitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOx	CO	SO2	PM10	PM2.5	CO2
Natural Gas	0.70	9.34	6.33	0.00	0.02	0.02	11,494.69
Hearth - No Summer Emissions							
Landscape	0.59	0.10	7.42	0.00	0.03	0.03	16.85
Consumer Products	29.75						
Architectural Coatings	5.44						
TOTALS (lbs/day, mitigated)	36.48	9.44	13.75	0.00	0.05	0.05	11,511.54

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 35% to 0%

Percentage of residences with wood fireplaces changed from 10% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	13.08	14.02	122.48	0.19	37.98	7.30	20,527.36
Junior college (2 yrs)	7.79	9.72	79.95	0.13	26.40	5.06	14,084.39
Hotel	4.63	4.96	41.27	0.06	12.88	2.47	6,922.58
Regnl shop. center	38.47	45.56	378.37	0.59	116.75	22.45	62,844.32
General office building	8.69	9.96	85.40	0.13	26.59	5.11	14,337.82
Office park	13.75	16.53	143.20	0.23	44.50	8.56	24,022.66
TOTALS (lbs/day, unmitigated)	86.41	100.75	850.67	1.33	265.10	50.95	142,739.13
Less OnRoad Reduction	0.00	0.00	0.00	0.00	70.00	13.00	0.00
TOTALS (lbs/day, unmitigated)	86.41	100.75	850.67	1.33	195.10	37.95	142,739.13

5/26/2011 2:36:18 PM

Operational Mitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Mitigated

Source	ROG	NOX	CO	SO2	PM10	PM25	CO2
Condo/townhouse general	12.56	13.32	116.33	0.18	36.07	6.94	19,497.20
Junior college (2 yrs)	4.20	4.61	37.97	0.06	12.54	2.40	6,688.79
Hotel	2.54	2.36	19.60	0.03	6.11	1.18	3,287.59
Regnl shop. center	18.78	21.64	179.69	0.28	55.45	10.66	29,845.25
General office building	4.69	4.73	40.56	0.06	12.63	2.43	6,809.14
Office park	7.20	7.85	68.01	0.11	21.13	4.06	11,408.55
TOTALS (lbs/day, mitigated)	49.97	54.51	462.16	0.72	143.93	27.67	77,536.52
Less OnRoad Reduction	0.00	0.00	0.00	0.00	70.00	13.00	0.00
TOTALS (lbs/day, mitigated)	49.97	54.51	462.16	0.72	73.93	14.67	77,536.52

Operational Settings:

Includes correction for passby trips

Includes the following double counting adjustment for internal trips:

Residential Trip % Reduction: 19.24   Nonresidential Trip % Reduction: 2.84

Analysis Year: 2020 Temperature (F): 75 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Condo/townhouse general	38.00	4.85	dwelling units	608.00	2,946.00	22,051.58
Junior college (2 yrs)		9.72	students	220.00	2,137.52	15,342.77
Hotel		9.72	rooms	150.00	1,457.40	7,477.56

Summary of Land Uses

Land Use Type	Acreage	Trip Rate	Unit Type	No. Units	Total Trips	Total VMT
Regnl shop. center		65.28	1000 sq ft	220.00	14,361.99	67,794.76
General office building		9.72	1000 sq ft	245.00	2,380.42	15,439.52
Office park		12.64	1000 sq ft	291.00	3,678.39	25,837.42
					26,961.72	153,943.61

Vehicle Fleet Mix

Vehicle Type	Percent Type	Non-Catalyst	Catalyst	Diesel
Light Auto	48.5	0.2	99.6	0.2
Light Truck < 3750 lbs	10.8	0.9	95.4	3.7
Light Truck 3751-5750 lbs	21.9	0.5	99.5	0.0
Med Truck 5751-8500 lbs	9.7	0.0	100.0	0.0
Lite-Heavy Truck 8501-10,000 lbs	1.7	0.0	76.5	23.5
Lite-Heavy Truck 10,001-14,000 lbs	0.7	0.0	57.1	42.9
Med-Heavy Truck 14,001-33,000 lbs	1.0	0.0	20.0	80.0
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	0.0	0.0	100.0
Other Bus	0.1	0.0	0.0	100.0
Urban Bus	0.1	0.0	0.0	100.0
Motorcycle	3.5	48.6	51.4	0.0
School Bus	0.1	0.0	0.0	100.0
Motor Home	1.0	0.0	90.0	10.0

Travel Conditions

	Residential			Commercial		
	Home-Work	Home-Shop	Home-Other	Commute	Non-Work	Customer
Urban Trip Length (miles)	10.8	7.3	7.5	9.5	7.4	7.4
Rural Trip Length (miles)	16.8	7.1	7.9	14.7	6.6	6.6
Trip speeds (mph)	35.0	35.0	35.0	35.0	35.0	35.0
% of Trips - Residential	32.9	18.0	49.1			
% of Trips - Commercial (by land use)						
Junior college (2 yrs)				5.0	2.5	92.5
Hotel				5.0	2.5	92.5
Regnl shop. center				2.0	1.0	97.0
General office building				35.0	17.5	47.5
Office park				48.0	24.0	28.0

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)  *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1323   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    950   4.3     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1175   4.5     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1175   2.9     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   2.8     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2318   2.9     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2318   3.5     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   1799   2.5     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   1799   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   1488   2.9     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1264   3.2     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2155   2.7     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2155   2.9     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    373   4.0     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   4.0     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.0     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    224   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   1.8 *   .1   .6   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.7 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.4 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   92. *   2.0 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.3 *   .1   .6   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *   .0   .2   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.7 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*-----------------------------------------------------------
-
 1. NE3     *   .0   .4   .0   .0   .0   .0   .2   .0   .2   .0   .0
.0
 2. SE3     *   .0   .0   .3   .2   .1   .3   .5   .0   .0   .0   .0
.0
 3. SW3     *   .3   .0   .0   .0   .0   .0   .7   .0   .0   .0   .0
.0
 4. NW3     *   .3  1.2   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
 5. NE7     *   .0   .3   .0   .0   .0   .0   .1   .0   .1   .0   .0
.0
 6. SE7     *   .0   .0   .2   .0   .0   .2   .4   .0   .0   .0   .0
.0
 7. SW7     *   .3   .0   .0   .0   .0   .0   .4   .1   .0   .0   .0
.0
 8. NW7     *   .2  1.0   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S              Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE             VD=   .0 CM/S
       CLAS=     7 (G)              VS=   .0 CM/S
       MIXH= 1000. M               AMB=   .0 PPM
      SIGTH=    5. DEGREES        TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *    X1    Y1    X2    Y2 * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
-
 A. NF           *      5  -450     5  -150 *  AG   1419   2.9     .0
15.0
 B. NA           *      5  -150     5     0 *  AG    804   4.2     .0
13.5
 C. ND           *      2     0     2   150 *  AG   1106   4.5     .0
9.9
 D. NE           *      2   150     2   450 *  AG   1106   2.9     .0
10.5
 E. SF           *     -7   450    -7   150 *  AG      0   2.9     .0
10.5
 F. SA           *     -7   150    -7     0 *  AG      0   4.0     .0
9.9
 G. SD           *     -7     0    -7  -150 *  AG      0   2.7     .0
9.9
 H. SE           *     -7  -150    -7  -450 *  AG      0   2.9     .0
10.5
 I. WF           *    450     7   150     7 *  AG   1993   2.9     .0
24.0
 J. WA           *    150     7     0     7 *  AG   1993   3.4     .0
13.5
 K. WD           *      0     0  -150     0 *  AG   1761   2.5     .0
13.5
 L. WE           *   -150     0  -450     0 *  AG   1761   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   1698   2.9     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1463   3.4     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2243   2.7     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2243   2.9     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    615   4.2     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   4.0     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.0     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    235   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   1.8 *  .2   .5   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.8 *  .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.4 *  .0   .1   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   1.7 *  .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.2 *  .1   .5   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *   1.3 *  .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *  .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *   95. *   1.6 *  .0   .0   .2   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*------------------------------------------------------------
-
 1. NE3     *   .0   .3   .0   .0   .0   .0   .2   .0   .3   .0   .0
.0
 2. SE3     *   .0   .0   .3   .2   .1   .4   .5   .0   .1   .0   .0
.0
 3. SW3     *   .3   .0   .0   .0   .0   .0   .7   .1   .1   .0   .0
.0
 4. NW3     *   .2  1.0   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
 5. NE7     *   .0   .3   .0   .0   .0   .0   .1   .0   .2   .0   .0
.0
 6. SE7     *   .0   .0   .2   .0   .0   .3   .5   .0   .1   .0   .0
.0
 7. SW7     *   .3   .0   .0   .0   .0   .0   .4   .2   .1   .0   .0
.0
 8. NW7     *   .2   .9   .0   .0   .0   .0   .0   .3   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1507   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG   1134   4.5     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1203   4.5     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1203   2.9     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2411   2.9     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2411   3.5     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   1864   2.5     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   1864   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   1702   2.9     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1478   3.4     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2553   2.7     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2553   2.9     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    373   4.0     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   4.0     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.0     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    224   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   2.0 *   .2   .8   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.0 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   2.0 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.5 *   .1   .7   .0   .0   .0   .0   .0   .0
 6. SE7      *  302. *   1.4 *   .0   .3   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                        CONC/LINK
             *                          (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .4   .0   .0   .0   .0   .2   .0   .2   .0   .0
.0
 2. SE3      *   .0   .0   .3   .2   .1   .4   .5   .0   .0   .0   .0
.0
 3. SW3      *   .3   .0   .0   .0   .0   .0   .8   .1   .0   .0   .0
.0
 4. NW3      *   .3  1.3   .0   .0   .0   .0   .0   .3   .0   .0   .0
.0
 5. NE7      *   .0   .3   .0   .0   .0   .0   .2   .0   .1   .0   .0
.0
 6. SE7      *   .0   .0   .2   .0   .0   .3   .5   .0   .0   .0   .0
.0
 7. SW7      *   .3   .0   .0   .0   .0   .0   .5   .2   .0   .0   .0
.0
 8. NW7      *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE           VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M             AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1563   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    948   4.3     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1229   4.5     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1229   2.9     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2403   2.9     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2403   3.5     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   2048   2.6     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   2048   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   1866   2.9      .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1631   3.5      .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2555   2.7      .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2555   2.9      .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    615   4.3      .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   4.0      .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.0      .0
9.9
 T. EL           *     0     0  -150     0 *  AG    235   3.0      .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   2.0 *   .2   .6   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.1 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   2.0 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.4 *   .2   .5   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *   1.5 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB RAMPS DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .4   .0   .0   .0   .0   .2   .0   .3   .0   .0
.0
 2. SE3      *   .0   .0   .3   .2   .2   .4   .5   .0   .1   .0   .0
.0
 3. SW3      *   .3   .0   .0   .0   .0   .0   .8   .1   .1   .0   .0
.0
 4. NW3      *   .3  1.2   .0   .0   .0   .0   .0   .3   .0   .0   .0
.0
 5. NE7      *   .0   .3   .0   .0   .0   .0   .2   .0   .2   .0   .0
.0
 6. SE7      *   .0   .0   .3   .0   .0   .3   .5   .0   .1   .0   .0
.0
 7. SW7      *   .3   .0   .0   .0   .0   .0   .5   .2   .1   .0   .0
.0
 8. NW7      *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 AM Near T
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. NF           *     5  -450     5  -150 *  AG   1518   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG   1134   4.5     .0  13.5
C. ND           *     2     0     2   150 *  AG   1210   4.5     .0   9.9
D. NE           *     2   150     2   450 *  AG   1210   2.9     .0  10.5
E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0  10.5
F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0   9.9
G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0   9.9
H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0  10.5
I. WF           *   450     7   150     7 *  AG   2426   2.9     .0  24.0
J. WA           *   150     7     0     7 *  AG   2426   3.5     .0  13.5
K. WD           *     0     0  -150     0 *  AG   1890   2.5     .0  13.5
L. WE           *  -150     0  -450     0 *  AG   1890   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   1694   2.9     .0  24.0
N. EA           *  -150    -2     0    -2 *  AG   1463   3.4     .0   9.9
O. ED           *     0   -11   150   -11 *  AG   2538   2.7     .0   9.9
P. EE           *   150   -11   450   -11 *  AG   2538   2.9     .0  15.0
Q. NL           *     0     0     2  -150 *  AG    384   4.0     .0   9.9
R. SL           *     0     0    -7   150 *  AG      0   4.0     .0   9.9
S. WL           *     0     0   150     0 *  AG      0   3.0     .0   9.9
T. EL           *     0     0  -150     0 *  AG    231   3.0     .0   9.9
```

```
             CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                      JUNE 1989 VERSION
                      PAGE   2

                 JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 AM Near T
                 RUN: Hour 1           (WORST CASE ANGLE)
           POLLUTANT: Carbon Monoxide


  III.  RECEPTOR LOCATIONS

              *    COORDINATES (M)
    RECEPTOR  *    X      Y      Z
  ------------*---------------------
  1. NE3      *      8     19   1.8
  2. SE3      *     12    -14   1.8
  3. SW3      *    -12    -19   1.8
  4. NW3      *    -12     10   1.8
  5. NE7      *     11     23   1.8
  6. SE7      *     16    -18   1.8
  7. SW7      *    -16    -23   1.8
  8. NW7      *    -16     14   1.8


   IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

              *       * PRED  *                CONC/LINK
              *  BRG  * CONC  *                  (PPM)
   RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
 -------------*-------*-------*---------------------------------------
  1. NE3      *  183. *   2.0 *   .2   .8   .3   .0   .0   .0   .0   .0
  2. SE3      *  276. *   2.0 *   .0   .3   .0   .0   .0   .0   .0   .0
  3. SW3      *   84. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
  4. NW3      *   93. *   2.0 *   .0   .0   .2   .0   .0   .0   .0   .0
  5. NE7      *  184. *   1.5 *   .1   .7   .0   .0   .0   .0   .0   .0
  6. SE7      *  302. *   1.4 *   .0   .3   .0   .0   .0   .0   .0   .0
  7. SW7      *   84. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
  8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 AM Near T
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                        CONC/LINK
           *                          (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .4   .0   .0   .0   .0   .2   .0   .2   .0   .0   .0
2. SE3     *   .0   .0   .3   .2   .1   .4   .5   .0   .0   .0   .0   .0
3. SW3     *   .3   .0   .0   .0   .0   .0   .8   .1   .0   .0   .0   .0
4. NW3     *   .3  1.3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
5. NE7     *   .0   .3   .0   .0   .0   .0   .2   .0   .1   .0   .0   .0
6. SE7     *   .0   .0   .2   .0   .0   .3   .5   .0   .0   .0   .0   .0
7. SW7     *   .3   .0   .0   .0   .0   .0   .5   .2   .0   .0   .0   .0
8. NW7     *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 PM Near
              RUN: Hour 1          (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG   1531   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    882   4.3     .0  13.5
C. ND           *     2     0     2   150 *  AG   1235   4.5     .0   9.9
D. NE           *     2   150     2   450 *  AG   1235   2.9     .0  10.5
E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0  10.5
F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0   9.9
G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0   9.9
H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0  10.5
I. WF           *   450     7   150     7 *  AG   2420   2.9     .0  24.0
J. WA           *   150     7     0     7 *  AG   2420   3.5     .0  13.5
K. WD           *     0     0  -150     0 *  AG   2100   2.6     .0  13.5
L. WE           *  -150     0  -450     0 *  AG   2100   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   1822   2.9     .0  24.0
N. EA           *  -150    -2     0    -2 *  AG   1580   3.5     .0   9.9
O. ED           *     0   -11   150   -11 *  AG   2438   2.7     .0   9.9
P. EE           *   150   -11   450   -11 *  AG   2438   2.9     .0  15.0
Q. NL           *     0     0     2  -150 *  AG    649   4.3     .0   9.9
R. SL           *     0     0    -7   150 *  AG      0   4.0     .0   9.9
S. WL           *     0     0   150     0 *  AG      0   3.0     .0   9.9
T. EL           *     0     0  -150     0 *  AG    242   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 PM Near
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*--------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                 CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
 1. NE3      *  183. *   2.0 *   .2   .6   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.0 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.5 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   92. *   2.0 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.4 *   .2   .5   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *   1.4 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.2 *   .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB DEL MAR HEIGHTS RD Ph 1 PM Near
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                        CONC/LINK
           *                          (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .4   .0   .0   .0   .0   .2   .0   .3   .0   .0   .0
2. SE3     *   .0   .0   .3   .2   .2   .4   .5   .0   .1   .0   .0   .0
3. SW3     *   .3   .0   .0   .0   .0   .0   .7   .1   .1   .0   .0   .0
4. NW3     *   .3  1.3   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
5. NE7     *   .0   .3   .0   .0   .0   .0   .2   .0   .2   .0   .0   .0
6. SE7     *   .0   .0   .3   .0   .0   .3   .5   .0   .1   .0   .0   .0
7. SW7     *   .3   .0   .0   .0   .0   .0   .4   .2   .1   .0   .0   .0
8. NW7     *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 AM Near T
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *            EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG   1521   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG   1137   4.5     .0  13.5
C. ND           *     2     0     2   150 *  AG   1233   4.5     .0   9.9
D. NE           *     2   150     2   450 *  AG   1233   2.9     .0  10.5
E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0  10.5
F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0   9.9
G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0   9.9
H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0  10.5
I. WF           *   450     7   150     7 *  AG   2468   2.9     .0  24.0
J. WA           *   150     7     0     7 *  AG   2468   3.5     .0  13.5
K. WD           *     0     0  -150     0 *  AG   1909   2.5     .0  13.5
L. WE           *  -150     0  -450     0 *  AG   1909   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   1724   2.9     .0  24.0
N. EA           *  -150    -2     0    -2 *  AG   1493   3.4     .0   9.9
O. ED           *     0   -11   150   -11 *  AG   2571   2.7     .0   9.9
P. EE           *   150   -11   450   -11 *  AG   2571   2.9     .0  15.0
Q. NL           *     0     0     2  -150 *  AG    384   4.0     .0   9.9
R. SL           *     0     0    -7   150 *  AG      0   4.0     .0   9.9
S. WL           *     0     0   150     0 *  AG      0   3.0     .0   9.9
T. EL           *     0     0  -150     0 *  AG    231   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 AM Near T
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   2.0 *   .2   .8   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.0 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   2.1 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.5 *   .1   .7   .0   .0   .0   .0   .0   .0
 6. SE7      *  302. *   1.4 *   .0   .3   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 AM Near T
              RUN: Hour 1            (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                           CONC/LINK
            *                             (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .4   .0   .0   .0   .0   .2   .0   .2   .0   .0   .0
2. SE3      *   .0   .0   .3   .2   .1   .4   .5   .0   .0   .0   .0   .0
3. SW3      *   .3   .0   .0   .0   .0   .0   .8   .1   .0   .0   .0   .0
4. NW3      *   .3  1.3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
5. NE7      *   .0   .4   .0   .0   .0   .0   .2   .0   .1   .0   .0   .0
6. SE7      *   .0   .0   .2   .0   .0   .3   .5   .0   .0   .0   .0   .0
7. SW7      *   .3   .0   .0   .0   .0   .0   .5   .2   .0   .0   .0   .0
8. NW7      *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 PM Near T
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG   1610   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    961   4.3     .0  13.5
C. ND           *     2     0     2   150 *  AG   1271   4.5     .0   9.9
D. NE           *     2   150     2   450 *  AG   1271   2.9     .0  10.5
E. SF           *    -7   450    -7   150 *  AG      0   2.9     .0  10.5
F. SA           *    -7   150    -7     0 *  AG      0   4.0     .0   9.9
G. SD           *    -7     0    -7  -150 *  AG      0   2.7     .0   9.9
H. SE           *    -7  -150    -7  -450 *  AG      0   2.9     .0  10.5
I. WF           *   450     7   150     7 *  AG   2460   2.9     .0  24.0
J. WA           *   150     7     0     7 *  AG   2460   3.5     .0  13.5
K. WD           *     0     0  -150     0 *  AG   2104   2.6     .0  13.5
L. WE           *  -150     0  -450     0 *  AG   2104   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   1913   2.9     .0  24.0
N. EA           *  -150    -2     0    -2 *  AG   1671   3.5     .0   9.9
O. ED           *     0   -11   150   -11 *  AG   2608   2.7     .0   9.9
P. EE           *   150   -11   450   -11 *  AG   2608   2.9     .0  15.0
Q. NL           *     0     0     2  -150 *  AG    649   4.3     .0   9.9
R. SL           *     0     0    -7   150 *  AG      0   4.0     .0   9.9
S. WL           *     0     0   150     0 *  AG      0   3.0     .0   9.9
T. EL           *     0     0  -150     0 *  AG    242   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 PM Near T
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   2.1 *   .2   .6   .3   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.1 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.6 *   .0   .2   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   2.1 *   .0   .0   .2   .0   .0   .0   .0   .0
 5. NE7      *  184. *   1.5 *   .2   .6   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *   1.5 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.3 *   .0   .2   .0   .0   .0   .0   .0   .0
 8. NW7      *   94. *   1.8 *   .0   .0   .2   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: I-5 NB DEL MAR HEIGHTS RD Ph 2 PM Near T
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .4   .0   .0   .0   .0   .2   .0   .3   .0   .0   .0
2. SE3      *   .0   .0   .3   .2   .2   .4   .6   .0   .1   .0   .0   .0
3. SW3      *   .3   .0   .0   .0   .0   .0   .8   .1   .1   .0   .0   .0
4. NW3      *   .3  1.3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
5. NE7      *   .0   .4   .0   .0   .0   .0   .2   .0   .2   .0   .0   .0
6. SE7      *   .0   .0   .3   .0   .0   .3   .5   .0   .1   .0   .0   .0
7. SW7      *   .3   .0   .0   .0   .0   .0   .5   .2   .1   .0   .0   .0
8. NW7      *   .2  1.1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB Del Mar Heights Rd 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1570   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG   1170   2.1     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1230   2.1     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1230   1.2     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   1.2     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   1.9     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   1.4     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   1.2     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2650   1.2     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2650   1.8     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   2250   1.3     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   2250   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   1950   1.2     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1580   1.7     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2690   1.4     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2690   1.2     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    400   1.9     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   1.9     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.5     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    370   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB Del Mar Heights Rd 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   1.0 *   .0   .4   .1   .0   .0   .0   .0   .0
 2. SE3      *  277. *   1.0 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   83. *    .8 *   .0   .1   .0   .0   .0   .0   .0   .0
 4. NW3      *   92. *   1.0 *   .0   .0   .1   .0   .0   .0   .0   .0
 5. NE7      *  184. *    .7 *   .0   .3   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *    .8 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   81. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *   95. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   3

                  JOB: I-5 NB Del Mar Heights Rd 2030 AM NP
                  RUN: Hour 1           (WORST CASE ANGLE)
           POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .2   .0   .0   .0   .0   .0   .0   .1   .0   .0
.0
 2. SE3      *   .0   .0   .2   .0   .0   .2   .3   .0   .0   .0   .0
.0
 3. SW3      *   .1   .0   .0   .0   .0   .0   .4   .0   .0   .0   .0
.0
 4. NW3      *   .1   .7   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .1   .0   .0   .1   .3   .0   .0   .0   .0
.0
 7. SW7      *   .1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 8. NW7      *   .0   .6   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM              ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1510   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    880   2.0     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1380   2.1     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1380   1.2     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   1.2     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   1.9     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   1.4     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   1.2     .0
10.5
 I. WF           *   450     7   150     7 *  AG   1940   1.2     .0
24.0
 J. WA           *   150     7     0     7 *  AG   1940   1.6     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   1970   1.3     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   1970   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2383   1.2     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1633   1.7     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2483   1.4     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2483   1.2     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    630   2.0     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   1.9     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.5     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    750   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  184. *     .9 *   .0   .3   .2   .0   .0   .0   .0   .0
 2. SE3      *  277. *    1.0 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *     .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 5. NE7      *  260. *     .5 *   .0   .0   .2   .0   .0   .0   .0   .0
 6. SE7      *  301. *     .7 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *     .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *   95. *     .7 *   .0   .0   .1   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*-----------------------------------------------------------
-
 1. NE3     *   .0   .2   .0   .0   .0   .0   .0   .0   .2   .0   .0
.0
 2. SE3     *   .0   .0   .2   .0   .0   .2   .3   .0   .0   .0   .0
.0
 3. SW3     *   .1   .0   .0   .0   .0   .0   .4   .0   .0   .0   .0
.0
 4. NW3     *   .0   .5   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
 5. NE7     *   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7     *   .0   .0   .1   .0   .0   .1   .3   .0   .0   .0   .0
.0
 7. SW7     *   .1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 8. NW7     *   .0   .4   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 AM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *                EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1776   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG   1376   2.1     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1275   2.1     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1275   1.2     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   1.2     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   1.9     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   1.4     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   1.2     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2800   1.2     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2800   1.8     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   2355   1.3     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   2355   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2190   1.2     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1820   1.8     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   3136   1.4     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   3136   1.2     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    400   1.9     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   1.9     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.5     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    370   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *       8     19   1.8
 2. SE3      *      12    -14   1.8
 3. SW3      *     -12    -19   1.8
 4. NW3      *     -12     10   1.8
 5. NE7      *      11     23   1.8
 6. SE7      *      16    -18   1.8
 7. SW7      *     -16    -23   1.8
 8. NW7      *     -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   1.1 *   .0   .4   .2   .0   .0   .0   .0   .0
 2. SE3      *  277. *   1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   83. *    .9 *   .0   .1   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   1.1 *   .0   .0   .1   .0   .0   .0   .0   .0
 5. NE7      *  184. *    .8 *   .0   .4   .0   .0   .0   .0   .0   .0
 6. SE7      *  302. *    .9 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   81. *    .7 *   .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *   95. *   1.0 *   .0   .0   .1   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *    I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .2   .0   .0   .0   .0   .1   .0   .1   .0   .0
.0
 2. SE3      *   .0   .0   .2   .0   .0   .2   .3   .0   .0   .0   .0
.0
 3. SW3      *   .1   .0   .0   .0   .0   .0   .5   .0   .0   .0   .0
.0
 4. NW3      *   .1   .7   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
 5. NE7      *   .0   .2   .0   .0   .0   .0   .1   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .1   .0   .0   .2   .3   .0   .0   .0   .0
.0
 7. SW7      *   .1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 8. NW7      *   .0   .6   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG   1724   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG   1094   2.1     .0
13.5
 C. ND           *     2     0     2   150 *  AG   1531   2.1     .0
9.9
 D. NE           *     2   150     2   450 *  AG   1531   1.2     .0
10.5
 E. SF           *    -7   450    -7   150 *  AG      0   1.2     .0
10.5
 F. SA           *    -7   150    -7     0 *  AG      0   1.9     .0
9.9
 G. SD           *    -7     0    -7  -150 *  AG      0   1.4     .0
9.9
 H. SE           *    -7  -150    -7  -450 *  AG      0   1.2     .0
10.5
 I. WF           *   450     7   150     7 *  AG   2443   1.2     .0
24.0
 J. WA           *   150     7     0     7 *  AG   2443   1.7     .0
13.5
 K. WD           *     0     0  -150     0 *  AG   2322   1.3     .0
13.5
 L. WE           *  -150     0  -450     0 *  AG   2322   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2633   1.2     .0
24.0
 N. EA           *  -150    -2     0    -2 *  AG   1883   1.8     .0
9.9
 O. ED           *     0   -11   150   -11 *  AG   2947   1.4     .0
9.9
 P. EE           *   150   -11   450   -11 *  AG   2947   1.2     .0
15.0
 Q. NL           *     0     0     2  -150 *  AG    630   2.0     .0
9.9
 R. SL           *     0     0    -7   150 *  AG      0   1.9     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.5     .0
9.9
 T. EL           *     0     0  -150     0 *  AG    750   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     19   1.8
 2. SE3      *     12    -14   1.8
 3. SW3      *    -12    -19   1.8
 4. NW3      *    -12     10   1.8
 5. NE7      *     11     23   1.8
 6. SE7      *     16    -18   1.8
 7. SW7      *    -16    -23   1.8
 8. NW7      *    -16     14   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  183. *   1.1 *   .0   .3   .2   .0   .0   .0   .0   .0
 2. SE3      *  277. *   1.2 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *    .8 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *   93. *   1.0 *   .0   .0   .1   .0   .0   .0   .0   .0
 5. NE7      *  184. *    .7 *   .0   .3   .0   .0   .0   .0   .0   .0
 6. SE7      *  301. *    .9 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *   95. *    .9 *   .0   .0   .1   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: I-5 NB DEL MAR HEIGHTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .2   .0   .0   .0   .0   .1   .0   .2   .0   .0
.0
 2. SE3      *   .0   .0   .2   .0   .0   .3   .3   .0   .0   .0   .0
.0
 3. SW3      *   .1   .0   .0   .0   .0   .0   .5   .0   .0   .0   .0
.0
 4. NW3      *   .1   .6   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
 5. NE7      *   .0   .2   .0   .0   .0   .0   .0   .0   .1   .0   .0
.0
 6. SE7      *   .0   .0   .1   .0   .0   .2   .3   .0   .0   .0   .0
.0
 7. SW7      *   .1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 8. NW7      *   .0   .5   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    249   2.9     .0
24.0
 B. NA           *     5  -150     5     0 *  AG     54   4.5     .0
9.9
 C. ND           *     0     0     0   150 *  AG    186   4.0     .0
9.9
 D. NE           *     0   150     0   450 *  AG    186   2.9     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    470   2.9     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    360   4.5     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG    832   4.5     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG    832   2.9     .0
15.0
 I. WF           *   450     9   150     9 *  AG   2100   2.9     .0
24.0
 J. WA           *   150     9     0     9 *  AG   1999   3.4     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2429   2.6     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2429   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2546   2.9     .0
28.5
 N. EA           *  -150    -2     0    -2 *  AG   2438   3.2     .0
18.0
 O. ED           *     0   -11   150   -11 *  AG   1918   2.5     .0
13.5
 P. EE           *   150   -11   450   -11 *  AG   1918   2.9     .0
19.5
 Q. NL           *     0     0    -2  -150 *  AG    195   4.5     .0
9.9
 R. SL           *     0     0    -2   150 *  AG    110   4.5     .0
9.9
 S. WL           *     0     0   150     2 *  AG    101   3.0     .0
9.9
 T. EL           *     0     0  -150     2 *  AG    108   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.8 *   .0   .0   .0   .0   .0   .0   .1   .0
 3. SW3      *    4. *   1.5 *   .0   .0   .0   .0   .0   .3   .4   .0
 4. NW3      *   92. *   1.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
 7. SW7      *   83. *   1.1 *   .0   .0   .0   .0   .0   .0   .2   .0
 8. NW7      *  173. *   1.1 *   .0   .0   .0   .0   .0   .0   .4   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .2   .3   .2   .5   .3   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .2   .0   .0   .3   .0   .0   .0   .0   .0
.0
 4. NW3      *   .3  1.0   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .2   .3   .1   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .2   .1   .1   .5   .0   .0   .0   .0   .0
.0
 7. SW7      *   .3   .0   .0   .0   .0   .0   .4   .1   .0   .0   .0
.0
 8. NW7      *   .0   .0   .3   .0   .0   .3   .0   .0   .0   .0   .0
.0
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                  JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM WP
                  RUN: Hour 1           (WORST CASE ANGLE)
            POLLUTANT: Carbon Monoxide


    I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


   II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ---------------*-------------------------*-----------------------------
-
 A. NF          *     5  -450     5  -150 *  AG    841   2.9     .0
24.0
 B. NA          *     5  -150     5     0 *  AG    223   4.4     .0
9.9
 C. ND          *     0     0     0   150 *  AG    376   3.3     .0
9.9
 D. NE          *     0   150     0   450 *  AG    376   2.9     .0
15.0
 E. SF          *    -7   450    -7   150 *  AG    160   2.9     .0
19.5
 F. SA          *    -7   150    -7     0 *  AG    109   4.4     .0
9.9
 G. SD          *    -9     0    -9  -150 *  AG    336   3.3     .0
9.9
 H. SE          *    -9  -150    -9  -450 *  AG    336   2.9     .0
15.0
 I. WF          *   450     9   150     9 *  AG   1977   2.9     .0
24.0
 J. WA          *   150     9     0     9 *  AG   1921   3.2     .0
13.5
 K. WD          *     0     2  -150     2 *  AG   2550   2.6     .0
13.5
 L. WE          *  -150     2  -450     2 *  AG   2550   2.9     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2834   2.9     .0
28.5
 N. EA           *  -150    -2     0    -2 *  AG   2592   3.2     .0
18.0
 O. ED           *     0   -11   150   -11 *  AG   2550   2.6     .0
13.5
 P. EE           *   150   -11   450   -11 *  AG   2550   2.9     .0
19.5
 Q. NL           *     0     0    -2  -150 *  AG    618   4.5     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     51   4.4     .0
9.9
 S. WL           *     0     0   150     2 *  AG     56   3.0     .0
9.9
 T. EL           *     0     0  -150     2 *  AG    242   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
          POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  264. *   1.7 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  263. *   1.3 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .2   .3   .2   .6   .5   .0   .1   .0   .0
.0
 3. SW3      *   .3   .0   .0   .0   .0   .0   .7   .2   .1   .0   .0
.0
 4. NW3      *   .0   .0   .6   .2   .3   .5   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .3   .1   .1   .5   .1   .0   .1   .0   .0
.0
 7. SW7      *   .3   .0   .0   .0   .0   .0   .4   .2   .1   .0   .0
.0
 8. NW7      *   .0   .0   .4   .2   .3   .3   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    218   2.9     .0
24.0
 B. NA           *     5  -150     5     0 *  AG     23   4.5     .0
9.9
 C. ND           *     0     0     0   150 *  AG    177   3.9     .0
9.9
 D. NE           *     0   150     0   450 *  AG    177   2.9     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    439   2.9     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    360   4.5     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG    823   4.5     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG    823   2.9     .0
15.0
 I. WF           *   450     9   150     9 *  AG   1961   2.9     .0
24.0
 J. WA           *   150     9     0     9 *  AG   1869   3.2     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2308   2.6     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2308   2.9     .0
19.5
```

```
 M. EF          *  -450    -2  -150    -2 *  AG   2148   2.9     .0
28.5
 N. EA          *  -150    -2     0    -2 *  AG   2040   3.1     .0
18.0
 O. ED          *     0   -11   150   -11 *  AG   1458   2.5     .0
13.5
 P. EE          *   150   -11   450   -11 *  AG   1458   2.9     .0
19.5
 Q. NL          *     0     0    -2  -150 *  AG    195   4.5     .0
9.9
 R. SL          *     0     0    -2   150 *  AG     79   4.5     .0
9.9
 S. WL          *     0     0   150     2 *  AG     92   3.0     .0
9.9
 T. EL          *     0     0  -150     2 *  AG    108   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *       8     21   1.8
 2. SE3      *      17    -17   1.8
 3. SW3      *     -12    -21   1.8
 4. NW3      *     -17     12   1.8
 5. NE7      *      11     25   1.8
 6. SE7      *      20    -20   1.8
 7. SW7      *     -16    -25   1.8
 8. NW7      *     -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *    1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *    1.5 *   .0   .0   .0   .0   .0   .0   .1   .0
 3. SW3      *    4. *    1.4 *   .0   .0   .0   .0   .0   .3   .4   .0
 4. NW3      *   92. *    1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *     .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  278. *    1.1 *   .0   .0   .0   .0   .0   .0   .1   .0
 7. SW7      *   24. *    1.0 *   .0   .0   .0   .0   .0   .0   .4   .0
 8. NW7      *  173. *    1.0 *   .0   .0   .0   .0   .0   .0   .4   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .2   .2   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .2   .3   .2   .4   .3   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .2   .0   .0   .3   .0   .0   .0   .0   .0
.0
 4. NW3      *   .3   .9   .0   .0   .0   .0   .0   .1   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .2   .2   .1   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .2   .2   .1   .4   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .3   .0   .0   .3   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    817   2.9     .0
24.0
 B. NA           *     5  -150     5     0 *  AG    199   4.3     .0
9.9
 C. ND           *     0     0     0   150 *  AG    335   2.9     .0
9.9
 D. NE           *     0   150     0   450 *  AG    335   2.9     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    136   2.9     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    109   4.3     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG    295   2.9     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG    295   2.9     .0
15.0
 I. WF           *   450     9   150     9 *  AG   1362   2.9     .0
24.0
 J. WA           *   150     9     0     9 *  AG   1347   3.1     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2017   2.6     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2017   2.9     .0
19.5
```

```
 M. EF               *  -450    -2  -150    -2 *  AG   2522   2.9     .0
28.5
 N. EA               *  -150    -2     0    -2 *  AG   2280   3.2     .0
18.0
 O. ED               *     0   -11   150   -11 *  AG   2190   2.6     .0
13.5
 P. EE               *   150   -11   450   -11 *  AG   2190   2.9     .0
19.5
 Q. NL               *     0     0    -2  -150 *  AG    618   4.5     .0
9.9
 R. SL               *     0     0    -2   150 *  AG     27   4.3     .0
9.9
 S. WL               *     0     0   150     2 *  AG     15   3.0     .0
9.9
 T. EL               *     0     0  -150     2 *  AG    242   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.8 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  264. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .2   .2   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .2   .2   .2   .5   .4   .0   .1   .0   .0
.0
 3. SW3      *   .2   .0   .0   .0   .0   .0   .6   .1   .1   .0   .0
.0
 4. NW3      *   .0   .0   .5   .2   .3   .4   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .2   .3   .1   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .2   .1   .1   .5   .1   .0   .1   .0   .0
.0
 7. SW7      *   .2   .0   .0   .0   .0   .0   .4   .2   .1   .0   .0
.0
 8. NW7      *   .0   .0   .3   .2   .3   .3   .0   .0   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 AM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *            EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    251   2.9     .0  24.0
B. NA           *     5  -150     5     0 *  AG     50   4.5     .0   9.9
C. ND           *     0     0     0   150 *  AG    190   4.0     .0   9.9
D. NE           *     0   150     0   450 *  AG    190   2.9     .0  15.0
E. SF           *    -7   450    -7   150 *  AG    479   2.9     .0  19.5
F. SA           *    -7   150    -7     0 *  AG    371   4.5     .0   9.9
G. SD           *    -9     0    -9  -150 *  AG    856   4.5     .0   9.9
H. SE           *    -9  -150    -9  -450 *  AG    856   2.9     .0  15.0
I. WF           *   450     9   150     9 *  AG   2142   2.9     .0  24.0
J. WA           *   150     9     0     9 *  AG   2039   3.4     .0  13.5
K. WD           *     0     2  -150     2 *  AG   2483   2.6     .0  13.5
L. WE           *  -150     2  -450     2 *  AG   2483   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   2561   2.9     .0  28.5
N. EA           *  -150    -2     0    -2 *  AG   2450   3.2     .0  18.0
O. ED           *     0   -11   150   -11 *  AG   1904   2.5     .0  13.5
P. EE           *   150   -11   450   -11 *  AG   1904   2.9     .0  19.5
Q. NL           *     0     0    -2  -150 *  AG    201   4.5     .0   9.9
R. SL           *     0     0    -2   150 *  AG    108   4.5     .0   9.9
S. WL           *     0     0   150     2 *  AG    103   3.0     .0   9.9
T. EL           *     0     0  -150     2 *  AG    111   3.0     .0   9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 AM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *      8     21   1.8
2. SE3      *     17    -17   1.8
3. SW3      *    -12    -21   1.8
4. NW3      *    -17     12   1.8
5. NE7      *     11     25   1.8
6. SE7      *     20    -20   1.8
7. SW7      *    -16    -25   1.8
8. NW7      *    -20     16   1.8


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
1. NE3      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *  276. *   1.8 *   .0   .0   .0   .0   .0   .0   .1   .0
3. SW3      *    4. *   1.5 *   .0   .0   .0   .0   .0   .3   .4   .0
4. NW3      *   92. *   1.6 *   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7      *  279. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
7. SW7      *   83. *   1.1 *   .0   .0   .0   .0   .0   .0   .2   .0
8. NW7      *  173. *   1.1 *   .0   .0   .0   .0   .0   .0   .4   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 AM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .2   .3   .2   .5   .3   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .2   .0   .0   .3   .0   .0   .0   .0   .0   .0
4. NW3      *   .3  1.0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
5. NE7      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .3   .1   .1   .5   .0   .0   .0   .0   .0   .0
7. SW7      *   .3   .0   .0   .0   .0   .0   .3   .1   .0   .0   .0   .0
8. NW7      *   .0   .0   .3   .0   .0   .3   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    864   2.9     .0  24.0
B. NA           *     5  -150     5     0 *  AG    227   4.4     .0   9.9
C. ND           *     0     0     0   150 *  AG    383   3.3     .0   9.9
D. NE           *     0   150     0   450 *  AG    383   2.9     .0  15.0
E. SF           *    -7   450    -7   150 *  AG    162   2.9     .0  19.5
F. SA           *    -7   150    -7     0 *  AG    112   4.4     .0   9.9
G. SD           *    -9     0    -9  -150 *  AG    342   3.3     .0   9.9
H. SE           *    -9  -150    -9  -450 *  AG    342   2.9     .0  15.0
I. WF           *   450     9   150     9 *  AG   1970   2.9     .0  24.0
J. WA           *   150     9     0     9 *  AG   1917   3.2     .0  13.5
K. WD           *     0     2  -150     2 *  AG   2569   2.6     .0  13.5
L. WE           *  -150     2  -450     2 *  AG   2569   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   2889   2.9     .0  28.5
N. EA           *  -150    -2     0    -2 *  AG   2640   3.4     .0  18.0
O. ED           *     0   -11   150   -11 *  AG   2591   2.6     .0  13.5
P. EE           *   150   -11   450   -11 *  AG   2591   2.9     .0  19.5
Q. NL           *     0     0    -2  -150 *  AG    637   4.5     .0   9.9
R. SL           *     0     0    -2   150 *  AG     50   4.4     .0   9.9
S. WL           *     0     0   150     2 *  AG     53   3.0     .0   9.9
T. EL           *     0     0  -150     2 *  AG    249   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 PM
               RUN: Hour 1            (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  262. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   2.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  264. *   1.7 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.4 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  263. *   1.3 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 2 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                          CONC/LINK
           *                            (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*------------------------------------------------------------
1. NE3     *   .0   .0   .3   .2   .3   .3   .0   .0   .0   .0   .0   .0
2. SE3     *   .0   .0   .2   .3   .2   .6   .5   .0   .1   .0   .0   .0
3. SW3     *   .3   .0   .0   .0   .0   .0   .7   .2   .1   .0   .0   .0
4. NW3     *   .0   .0   .6   .2   .3   .5   .0   .0   .0   .0   .0   .0
5. NE7     *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
6. SE7     *   .0   .0   .3   .2   .1   .5   .1   .0   .1   .0   .0   .0
7. SW7     *   .3   .0   .0   .0   .0   .0   .5   .2   .1   .0   .0   .0
8. NW7     *   .0   .0   .4   .2   .3   .3   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 AM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *               EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-----------------------------
A. NF           *     5  -450     5  -150 *  AG    247    2.9     .0  24.0
B. NA           *     5  -150     5     0 *  AG     46    4.5     .0   9.9
C. ND           *     0     0     0   150 *  AG    186    3.9     .0   9.9
D. NE           *     0   150     0   450 *  AG    186    2.9     .0  15.0
E. SF           *    -7   450    -7   150 *  AG    475    2.9     .0  19.5
F. SA           *    -7   150    -7     0 *  AG    371    4.5     .0   9.9
G. SD           *    -9     0    -9  -150 *  AG    852    4.5     .0   9.9
H. SE           *    -9  -150    -9  -450 *  AG    852    2.9     .0  15.0
I. WF           *   450     9   150     9 *  AG   2077    2.9     .0  24.0
J. WA           *   150     9     0     9 *  AG   1978    3.4     .0  13.5
K. WD           *     0     2  -150     2 *  AG   2426    2.6     .0  13.5
L. WE           *  -150     2  -450     2 *  AG   2426    2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG   2506    2.9     .0  28.5
N. EA           *  -150    -2     0    -2 *  AG   2395    3.2     .0  18.0
O. ED           *     0   -11   150   -11 *  AG   1841    2.5     .0  13.5
P. EE           *   150   -11   450   -11 *  AG   1841    2.9     .0  19.5
Q. NL           *     0     0    -2  -150 *  AG    201    4.5     .0   9.9
R. SL           *     0     0    -2   150 *  AG    104    4.5     .0   9.9
S. WL           *     0     0   150     2 *  AG     99    3.0     .0   9.9
T. EL           *     0     0  -150     2 *  AG    111    3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 AM
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.7 *   .0   .0   .0   .0   .0   .0   .1   .0
 3. SW3      *    4. *   1.5 *   .0   .0   .0   .0   .0   .3   .4   .0
 4. NW3      *   92. *   1.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.2 *   .0   .0   .0   .0   .0   .0   .1   .0
 7. SW7      *   83. *   1.0 *   .0   .0   .0   .0   .0   .0   .2   .0
 8. NW7      *  173. *   1.1 *   .0   .0   .0   .0   .0   .0   .4   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 AM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                        CONC/LINK
            *                          (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-------------------------------------------------------------
1. NE3      *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .2   .3   .2   .5   .3   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .2   .0   .0   .3   .0   .0   .0   .0   .0   .0
4. NW3      *   .3  1.0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
5. NE7      *   .0   .0   .2   .2   .3   .1   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .2   .1   .1   .5   .0   .0   .0   .0   .0   .0
7. SW7      *   .3   .0   .0   .0   .0   .0   .3   .1   .0   .0   .0   .0
8. NW7      *   .0   .0   .3   .0   .0   .3   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *             EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG     851   2.9     .0  24.0
B. NA           *     5  -150     5     0 *  AG     214   4.4     .0   9.9
C. ND           *     0     0     0   150 *  AG     371   3.1     .0   9.9
D. NE           *     0   150     0   450 *  AG     371   2.9     .0  15.0
E. SF           *    -7   450    -7   150 *  AG     149   2.9     .0  19.5
F. SA           *    -7   150    -7     0 *  AG     112   4.4     .0   9.9
G. SD           *    -9     0    -9  -150 *  AG     330   3.1     .0   9.9
H. SE           *    -9  -150    -9  -450 *  AG     330   2.9     .0  15.0
I. WF           *   450     9   150     9 *  AG    1791   2.9     .0  24.0
J. WA           *   150     9     0     9 *  AG    1750   3.2     .0  13.5
K. WD           *     0     2  -150     2 *  AG    2414   2.6     .0  13.5
L. WE           *  -150     2  -450     2 *  AG    2414   2.9     .0  19.5
M. EF           *  -450    -2  -150    -2 *  AG    2719   2.9     .0  28.5
N. EA           *  -150    -2     0    -2 *  AG    2470   3.2     .0  18.0
O. ED           *     0   -11   150   -11 *  AG    2395   2.6     .0  13.5
P. EE           *   150   -11   450   -11 *  AG    2395   2.9     .0  19.5
Q. NL           *     0     0    -2  -150 *  AG     637   4.5     .0   9.9
R. SL           *     0     0    -2   150 *  AG      37   4.4     .0   9.9
S. WL           *     0     0   150     2 *  AG      41   3.0     .0   9.9
T. EL           *     0     0  -150     2 *  AG     249   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 PM
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.9 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.3 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  264. *   1.6 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  279. *   1.3 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  263. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: HIGH BLUFF DR DEL MAR HEIGHTS RD Ph 1 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                         CONC/LINK
           *                           (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
2. SE3     *   .0   .0   .2   .3   .2   .5   .4   .0   .1   .0   .0   .0
3. SW3     *   .2   .0   .0   .0   .0   .0   .6   .2   .1   .0   .0   .0
4. NW3     *   .0   .0   .6   .2   .3   .4   .0   .0   .0   .0   .0   .0
5. NE7     *   .0   .0   .2   .2   .3   .2   .0   .0   .0   .0   .0   .0
6. SE7     *   .0   .0   .2   .1   .1   .5   .1   .0   .1   .0   .0   .0
7. SW7     *   .2   .0   .0   .0   .0   .0   .4   .1   .1   .0   .0   .0
8. NW7     *   .0   .0   .4   .2   .3   .3   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    350   1.2     .0
24.0
 B. NA           *     5  -150     5     0 *  AG     60   1.9     .0
9.9
 C. ND           *     0     0     0   150 *  AG    260   1.4     .0
9.9
 D. NE           *     0   150     0   450 *  AG    260   1.2     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    590   1.2     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    470   1.9     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG   1120   2.1     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG   1120   1.2     .0
15.0
 I. WF           *   450     9   150     9 *  AG   2190   1.2     .0
24.0
 J. WA           *   150     9     0     9 *  AG   1980   1.6     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2560   1.3     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2560   1.2     .0
19.5
```

```
 M. EF            *  -450    -2  -150    -2 *  AG    960   1.2     .0
28.5
 N. EA            *  -150    -2     0    -2 *  AG    840   1.5     .0
18.0
 O. ED            *     0   -11   150   -11 *  AG    150   1.2     .0
13.5
 P. EE            *   150   -11   450   -11 *  AG    150   1.2     .0
19.5
 Q. NL            *     0     0    -2  -150 *  AG    290   1.9     .0
9.9
 R. SL            *     0     0    -2   150 *  AG    120   1.9     .0
9.9
 S. WL            *     0     0   150     2 *  AG    210   1.5     .0
9.9
 T. EL            *     0     0  -150     2 *  AG    120   1.5     .0
9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *      8     21   1.8
2. SE3      *     17    -17   1.8
3. SW3      *    -12    -21   1.8
4. NW3      *    -17     12   1.8
5. NE7      *     11     25   1.8
6. SE7      *     20    -20   1.8
7. SW7      *    -16    -25   1.8
8. NW7      *    -20     16   1.8


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
1. NE3      *  187. *    .5 *   .0   .0   .0   .0   .0   .0   .1   .0
2. SE3      *  277. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *    4. *    .7 *   .0   .0   .0   .0   .0   .1   .3   .0
4. NW3      *   91. *    .7 *   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7      *  209. *    .4 *   .0   .0   .0   .0   .0   .0   .1   .0
6. SE7      *  278. *    .4 *   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7      *   25. *    .5 *   .0   .0   .0   .0   .0   .0   .2   .0
8. NW7      *  173. *    .5 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .1   .0   .0   .1   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .1   .5   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    900   1.2     .0
24.0
 B. NA           *     5  -150     5     0 *  AG    220   1.9     .0
9.9
 C. ND           *     0     0     0   150 *  AG    470   1.4     .0
9.9
 D. NE           *     0   150     0   450 *  AG    470   1.2     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    280   1.2     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    240   1.9     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG    360   1.4     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG    360   1.2     .0
15.0
 I. WF           *   450     9   150     9 *  AG   1533   1.2     .0
24.0
 J. WA           *   150     9     0     9 *  AG   1513   1.5     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2243   1.3     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2243   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2768   1.2     .0
28.5
 N. EA           *  -150    -2     0    -2 *  AG   2518   1.6     .0
18.0
 O. ED           *     0   -11   150   -11 *  AG   2408   1.3     .0
13.5
 P. EE           *   150   -11   450   -11 *  AG   2408   1.2     .0
19.5
 Q. NL           *     0     0    -2  -150 *  AG    680   2.1     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     40   1.9     .0
9.9
 S. WL           *     0     0   150     2 *  AG     20   1.5     .0
9.9
 T. EL           *     0     0  -150     2 *  AG    250   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  261. *    .5 *  .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  277. *    .9 *  .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *    .6 *  .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  263. *    .8 *  .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  259. *    .4 *  .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  285. *    .7 *  .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *    .5 *  .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  262. *    .6 *  .0   .0   .0   .0   .0   .0   .0   .0
```

```
                 CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                          JUNE 1989 VERSION
                          PAGE   3

                     JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM NP
                     RUN: Hour 1           (WORST CASE ANGLE)
               POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

              *                          CONC/LINK
              *                            (PPM)
  RECEPTOR    *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .1   .0   .0   .1   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .1   .0   .0   .3   .2   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .3   .0   .1   .3   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .1   .0   .0   .1   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .1   .0   .0   .3   .1   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .2   .0   .1   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    384   1.2     .0
24.0
 B. NA           *     5  -150     5     0 *  AG     94   2.1     .0
9.9
 C. ND           *     0     0     0   150 *  AG    275   1.6     .0
9.9
 D. NE           *     0   150     0   450 *  AG    275   1.2     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    624   1.2     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    470   2.1     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG   1135   2.1     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG   1135   1.2     .0
15.0
 I. WF           *   450     9   150     9 *  AG   2415   1.2     .0
24.0
 J. WA           *   150     9     0     9 *  AG   2190   1.6     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2755   1.3     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2755   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   2900   1.2     .0
28.5
 N. EA           *  -150    -2     0    -2 *  AG   2780   1.6     .0
18.0
 O. ED           *     0   -11   150   -11 *  AG   2158   1.3     .0
13.5
 P. EE           *   150   -11   450   -11 *  AG   2158   1.2     .0
19.5
 Q. NL           *     0     0    -2  -150 *  AG    290   2.1     .0
9.9
 R. SL           *     0     0    -2   150 *  AG    154   2.1     .0
9.9
 S. WL           *     0     0   150     2 *  AG    225   1.5     .0
9.9
 T. EL           *     0     0  -150     2 *  AG    120   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  261. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  277. *    1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *    4. *     .8 *   .0   .0   .0   .0   .0   .2   .3   .0
 4. NW3      *  174. *     .8 *   .0   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  259. *     .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  282. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   82. *     .6 *   .0   .0   .0   .0   .0   .0   .2   .0
 8. NW7      *  172. *     .7 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .1   .0   .0   .3   .2   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .1   .0   .0   .2   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .2   .0   .0   .3   .0   .0   .0   .0   .0
.0
 7. SW7      *   .1   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    936   1.2     .0
24.0
 B. NA           *     5  -150     5     0 *  AG    256   2.0     .0
9.9
 C. ND           *     0     0     0   150 *  AG    520   1.8     .0
9.9
 D. NE           *     0   150     0   450 *  AG    520   1.2     .0
15.0
 E. SF           *    -7   450    -7   150 *  AG    316   1.2     .0
19.5
 F. SA           *    -7   150    -7     0 *  AG    240   2.0     .0
9.9
 G. SD           *    -9     0    -9  -150 *  AG    410   1.5     .0
9.9
 H. SE           *    -9  -150    -9  -450 *  AG    410   1.2     .0
15.0
 I. WF           *   450     9   150     9 *  AG   2288   1.2     .0
24.0
 J. WA           *   150     9     0     9 *  AG   2218   1.6     .0
13.5
 K. WD           *     0     2  -150     2 *  AG   2898   1.4     .0
13.5
 L. WE           *  -150     2  -450     2 *  AG   2898   1.2     .0
19.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG   3232   1.2     .0
28.5
 N. EA           *  -150    -2     0    -2 *  AG   2982   1.6     .0
18.0
 O. ED           *     0   -11   150   -11 *  AG   2944   1.4     .0
13.5
 P. EE           *   150   -11   450   -11 *  AG   2944   1.2     .0
19.5
 Q. NL           *     0     0    -2  -150 *  AG    680   2.1     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     76   2.0     .0
9.9
 S. WL           *     0     0   150     2 *  AG     70   1.5     .0
9.9
 T. EL           *     0     0  -150     2 *  AG    250   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      8     21   1.8
 2. SE3      *     17    -17   1.8
 3. SW3      *    -12    -21   1.8
 4. NW3      *    -17     12   1.8
 5. NE7      *     11     25   1.8
 6. SE7      *     20    -20   1.8
 7. SW7      *    -16    -25   1.8
 8. NW7      *    -20     16   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  260. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  278. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   83. *    .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  263. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  259. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  288. *    .8 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   82. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  261. *    .7 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: HIGH BLUFF DR DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *    I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .2   .0   .0   .4   .3   .0   .0   .0   .0
.0
 3. SW3      *   .1   .0   .0   .0   .0   .0   .4   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .4   .0   .1   .3   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .2   .0   .0   .3   .2   .0   .0   .0   .0
.0
 7. SW7      *   .1   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .3   .0   .1   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM NP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE           VD=   .0 CM/S
       CLAS=     7 (G)            VS=   .0 CM/S
       MIXH= 1000. M             AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     7  -450     7  -150 *  AG    602   2.9     .0
24.0
 B. NA           *     7  -150     7     0 *  AG    602   3.7     .0
18.0
 C. ND           *     7     0     7   150 *  AG   1014   2.6     .0
18.0
 D. NE           *     7   150     7   450 *  AG   1014   2.9     .0
24.0
 E. SF           *    -9   450    -9   150 *  AG    866   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    725   3.7     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG   1034   2.6     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG   1034   2.9     .0
19.5
 I. WF           *   450     5   150     5 *  AG      0   2.9     .0
19.5
 J. WA           *   150     5     0     5 *  AG      0   3.3     .0
18.0
 K. WD           *     0     5  -150     5 *  AG      0   2.6     .0
13.5
 L. WE           *  -150     5  -450     5 *  AG      0   2.9     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   1858   2.9     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1225   4.5     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   1278   3.5     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   1278   2.9     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   3.7     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    141   3.7     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.3     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    633   3.8     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  258. *    .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  274. *   1.6 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *  274. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  174. *    .8 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *    .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  276. *   1.0 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *    7. *    .9 *   .0   .0   .0   .1   .0   .2   .0   .0
 8. NW7      *  174. *    .7 *   .1   .0   .0   .0   .0   .0   .2   .1
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.2
 2. SE3      *   .0   .0   .0   .0   .1   .8   .3   .0   .0   .0   .0
.2
 3. SW3      *   .0   .0   .0   .0   .2  1.1   .0   .0   .0   .0   .0
.2
 4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.1
 5. NE7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.2
 6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0
.2
 7. SW7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF      H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     7  -450     7  -150 *  AG   1305   2.9     .0
24.0
 B. NA           *     7  -150     7     0 *  AG   1305   3.4     .0
18.0
 C. ND           *     7     0     7   150 *  AG   1397   2.6     .0
18.0
 D. NE           *     7   150     7   450 *  AG   1397   2.9     .0
24.0
 E. SF           *    -9   450    -9   150 *  AG    857   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    603   3.3     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    733   2.5     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    733   2.9     .0
19.5
 I. WF           *   450     5   150     5 *  AG      0   2.9     .0
19.5
 J. WA           *   150     5     0     5 *  AG      0   3.7     .0
18.0
 K. WD           *     0     5  -150     5 *  AG      0   2.6     .0
13.5
 L. WE           *  -150     5  -450     5 *  AG      0   2.9     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   1653   2.9     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1131   4.5     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   1685   4.4     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   1685   2.9     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   3.3     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    254   3.4     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.7     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    522   4.0     .0
9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*--------------------
1. NE3      *     19     14   1.8
2. SE3      *     19    -14   1.8
3. SW3      *    -19    -14   1.8
4. NW3      *    -19     14   1.8
5. NE7      *     23     18   1.8
6. SE7      *     23    -18   1.8
7. SW7      *    -23    -18   1.8
8. NW7      *    -23     18   1.8


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *                CONC/LINK
            *  BRG  * CONC  *                  (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
------------*-------*-------*---------------------------------------
1. NE3      *  186. *    .9 *   .1   .4   .0   .0   .0   .0   .0   .1
2. SE3      *  275. *   1.8 *   .0   .2   .0   .0   .0   .0   .0   .0
3. SW3      *   86. *   1.8 *   .0   .2   .0   .0   .0   .0   .1   .0
4. NW3      *  174. *    .8 *   .2   .0   .0   .0   .0   .0   .2   .0
5. NE7      *  187. *    .8 *   .1   .3   .0   .0   .0   .0   .0   .1
6. SE7      *  276. *   1.0 *   .0   .2   .0   .0   .0   .0   .0   .0
7. SW7      *   84. *   1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
8. NW7      *  173. *    .7 *   .2   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .8   .5   .0   .0   .0   .0
.2
 3. SW3      *   .0   .0   .0   .0   .0   .3  1.0   .1   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0
.1
 7. SW7      *   .0   .0   .0   .0   .0   .0   .7   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                  JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM WP
                  RUN: Hour 1           (WORST CASE ANGLE)
            POLLUTANT: Carbon Monoxide


    I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


   II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
  ----------------*------------------------*-----------------------------
-
  A. NF          *     7  -450     7  -150 *  AG    622   2.9     .0
24.0
  B. NA          *     7  -150     7     0 *  AG    622   3.7     .0
18.0
  C. ND          *     7     0     7   150 *  AG   1054   2.6     .0
18.0
  D. NE          *     7   150     7   450 *  AG   1054   2.9     .0
24.0
  E. SF          *    -9   450    -9   150 *  AG    878   2.9     .0
19.5
  F. SA          *    -9   150    -9     0 *  AG    731   3.7     .0
13.5
  G. SD          *    -9     0    -9  -150 *  AG   1040   2.6     .0
13.5
  H. SE          *    -9  -150    -9  -450 *  AG   1040   2.9     .0
19.5
  I. WF          *   450     5   150     5 *  AG     20   2.9     .0
19.5
  J. WA          *   150     5     0     5 *  AG     20   3.3     .0
18.0
  K. WD          *     0     5  -150     5 *  AG      0   2.6     .0
13.5
  L. WE          *  -150     5  -450     5 *  AG      0   2.9     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   1858   2.9     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1225   4.5     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   1284   3.5     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   1284   2.9     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   3.7     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    147   3.7     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   3.3     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    633   3.8     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  258. *    .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  274. *   1.6 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *  274. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  174. *    .8 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *    .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  276. *   1.0 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *    7. *    .9 *   .0   .0   .0   .2   .0   .2   .0   .0
 8. NW7      *  174. *    .7 *   .1   .0   .0   .0   .0   .0   .2   .1
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.2
 2. SE3      *   .0   .0   .0   .0   .1   .8   .3   .0   .0   .0   .0
.2
 3. SW3      *   .0   .0   .0   .0   .2  1.1   .0   .0   .0   .0   .0
.2
 4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.1
 5. NE7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.2
 6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0
.2
 7. SW7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     7  -450     7  -150 *  AG   1321   2.9     .0
24.0
 B. NA           *     7  -150     7     0 *  AG   1321   3.4     .0
18.0
 C. ND           *     7     0     7   150 *  AG   1429   2.6     .0
18.0
 D. NE           *     7   150     7   450 *  AG   1429   2.9     .0
24.0
 E. SF           *    -9   450    -9   150 *  AG    911   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    630   3.3     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    760   2.6     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    760   2.9     .0
19.5
 I. WF           *   450     5   150     5 *  AG     16   2.9     .0
19.5
 J. WA           *   150     5     0     5 *  AG     16   3.7     .0
18.0
 K. WD           *     0     5  -150     5 *  AG      0   2.6     .0
13.5
 L. WE           *  -150     5  -450     5 *  AG      0   2.9     .0
19.5
```

```
 M. EF            *  -450    -9  -150    -9 *  AG   1653   2.9     .0
10.5
 N. EA            *  -150    -9     0    -9 *  AG   1131   4.5     .0
9.9
 O. ED            *     0    -9   150    -9 *  AG   1712   4.4     .0
9.9
 P. EE            *   150    -9   450    -9 *  AG   1712   2.9     .0
10.5
 Q. NL            *     0     0     0  -150 *  AG      0   3.3     .0
9.9
 R. SL            *     0     0    -5   150 *  AG    281   3.4     .0
9.9
 S. WL            *     0     0   150     0 *  AG      0   3.7     .0
9.9
 T. EL            *     0     0  -150    -9 *  AG    522   4.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  186. *     .9 *   .1   .4   .0   .0   .0   .0   .0   .1
 2. SE3      *  275. *    1.9 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *    1.8 *   .0   .2   .0   .0   .0   .0   .1   .0
 4. NW3      *  174. *     .8 *   .2   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  187. *     .8 *   .1   .3   .0   .0   .0   .0   .0   .1
 6. SE7      *  276. *    1.1 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *    1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *  173. *     .7 *   .2   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .8   .5   .0   .0   .0   .0
.2
 3. SW3      *   .0   .0   .0   .0   .0   .3  1.1   .1   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0
.1
 7. SW7      *   .0   .0   .0   .0   .0   .0   .7   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO SR-56 EB Ph 2 AM Near Term
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     7  -450     7  -150 *  AG    636   2.9     .0  24.0
B. NA           *     7  -150     7     0 *  AG    636   3.7     .0  18.0
C. ND           *     7     0     7   150 *  AG   1078   2.6     .0  18.0
D. NE           *     7   150     7   450 *  AG   1078   2.9     .0  24.0
E. SF           *    -9   450    -9   150 *  AG    899   2.9     .0  19.5
F. SA           *    -9   150    -9     0 *  AG    750   3.8     .0  13.5
G. SD           *    -9     0    -9  -150 *  AG   1067   2.7     .0  13.5
H. SE           *    -9  -150    -9  -450 *  AG   1067   2.9     .0  19.5
I. WF           *   450     5   150     5 *  AG     18   2.9     .0  19.5
J. WA           *   150     5     0     5 *  AG     18   3.3     .0  18.0
K. WD           *     0     5  -150     5 *  AG      0   2.6     .0  13.5
L. WE           *  -150     5  -450     5 *  AG      0   2.9     .0  19.5
M. EF           *  -450    -9  -150    -9 *  AG   1911   2.9     .0  10.5
N. EA           *  -150    -9     0    -9 *  AG   1260   4.5     .0   9.9
O. ED           *     0    -9   150    -9 *  AG   1319   3.5     .0   9.9
P. EE           *   150    -9   450    -9 *  AG   1319   2.9     .0  10.5
Q. NL           *     0     0     0  -150 *  AG      0   3.7     .0   9.9
R. SL           *     0     0    -5   150 *  AG    149   3.7     .0   9.9
S. WL           *     0     0   150     0 *  AG      0   3.3     .0   9.9
T. EL           *     0     0  -150    -9 *  AG    651   3.9     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO SR-56 EB Ph 2 AM Near Term
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  258. *     .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  274. *    1.7 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *  275. *    1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  174. *     .9 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *     .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  276. *    1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *    8. *     .9 *   .0   .0   .0   .1   .0   .3   .0   .0
 8. NW7      *  174. *     .7 *   .1   .0   .0   .0   .0   .0   .2   .1
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO SR-56 EB Ph 2 AM Near Term
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                        CONC/LINK
           *                          (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .2
2. SE3     *   .0   .0   .0   .0   .1   .9   .3   .0   .0   .0   .0   .2
3. SW3     *   .0   .0   .0   .0   .1  1.2   .0   .0   .0   .0   .0   .2
4. NW3     *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .1
5. NE7     *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .2
6. SE7     *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0   .2
7. SW7     *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .1
8. NW7     *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO SR-56 EB Ph 2 PM Near Term
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

       U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
     BRG= WORST CASE            VD=   .0 CM/S
    CLAS=     7 (G)             VS=   .0 CM/S
    MIXH= 1000. M              AMB=   .0 PPM
   SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

    LINK       *  LINK COORDINATES (M)   *               EF     H     W
 DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*------------------------*------------------------------
A. NF          *     7  -450     7  -150 *  AG   1356   2.9     .0  24.0
B. NA          *     7  -150     7     0 *  AG   1356   3.4     .0  18.0
C. ND          *     7     0     7   150 *  AG   1466   2.6     .0  18.0
D. NE          *     7   150     7   450 *  AG   1466   2.9     .0  24.0
E. SF          *    -9   450    -9   150 *  AG    930   2.9     .0  19.5
F. SA          *    -9   150    -9     0 *  AG    645   3.3     .0  13.5
G. SD          *    -9     0    -9  -150 *  AG    778   2.6     .0  13.5
H. SE          *    -9  -150    -9  -450 *  AG    778   2.9     .0  19.5
I. WF          *   450     5   150     5 *  AG     15   2.9     .0  19.5
J. WA          *   150     5     0     5 *  AG     15   3.7     .0  18.0
K. WD          *     0     5  -150     5 *  AG      0   2.6     .0  13.5
L. WE          *  -150     5  -450     5 *  AG      0   2.9     .0  19.5
M. EF          *  -450    -9  -150    -9 *  AG   1701   2.9     .0  10.5
N. EA          *  -150    -9     0    -9 *  AG   1164   4.5     .0   9.9
O. ED          *     0    -9   150    -9 *  AG   1758   4.4     .0   9.9
P. EE          *   150    -9   450    -9 *  AG   1758   2.9     .0  10.5
Q. NL          *     0     0     0  -150 *  AG      0   3.3     .0   9.9
R. SL          *     0     0    -5   150 *  AG    285   3.4     .0   9.9
S. WL          *     0     0   150     0 *  AG      0   3.7     .0   9.9
T. EL          *     0     0  -150    -9 *  AG    537   4.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO SR-56 EB Ph 2 PM Near Term
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  186. *   1.0 *   .1   .5   .0   .0   .0   .0   .0   .1
 2. SE3      *  275. *   1.9 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *   1.8 *   .0   .2   .0   .0   .0   .0   .1   .0
 4. NW3      *  174. *    .8 *   .2   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  187. *    .8 *   .1   .3   .0   .0   .0   .0   .0   .1
 6. SE7      *  276. *   1.1 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *  173. *    .7 *   .2   .0   .0   .0   .0   .0   .2   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO SR-56 EB Ph 2 PM Near Term
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                        CONC/LINK
            *                          (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*----------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .8   .5   .0   .0   .0   .0   .2
3. SW3      *   .0   .0   .0   .0   .0   .3  1.1   .1   .0   .0   .0   .0
4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
5. NE7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0   .1
7. SW7      *   .0   .0   .0   .0   .0   .0   .8   .0   .0   .0   .0   .0
8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO SR-56 EB ON RAMP Ph 1 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)  *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *      7  -450     7  -150 *  AG    633   2.9     .0  24.0
B. NA           *      7  -150     7     0 *  AG    633   3.7     .0  18.0
C. ND           *      7     0     7   150 *  AG   1072   2.6     .0  18.0
D. NE           *      7   150     7   450 *  AG   1072   2.9     .0  24.0
E. SF           *     -9   450    -9   150 *  AG    895   2.9     .0  19.5
F. SA           *     -9   150    -9     0 *  AG    748   3.7     .0  13.5
G. SD           *     -9     0    -9  -150 *  AG   1065   2.7     .0  13.5
H. SE           *     -9  -150    -9  -450 *  AG   1065   2.9     .0  19.5
I. WF           *    450     5   150     5 *  AG     15   2.9     .0  19.5
J. WA           *    150     5     0     5 *  AG     15   3.3     .0  18.0
K. WD           *      0     5  -150     5 *  AG      0   2.6     .0  13.5
L. WE           *   -150     5  -450     5 *  AG      0   2.9     .0  19.5
M. EF           *   -450    -9  -150    -9 *  AG   1911   2.9     .0  10.5
N. EA           *   -150    -9     0    -9 *  AG   1260   4.5     .0   9.9
O. ED           *      0    -9   150    -9 *  AG   1317   3.5     .0   9.9
P. EE           *    150    -9   450    -9 *  AG   1317   2.9     .0  10.5
Q. NL           *      0     0     0  -150 *  AG      0   3.7     .0   9.9
R. SL           *      0     0    -5   150 *  AG    147   3.7     .0   9.9
S. WL           *      0     0   150     0 *  AG      0   3.3     .0   9.9
T. EL           *      0     0  -150    -9 *  AG    651   3.9     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO SR-56 EB ON RAMP Ph 1 AM Ne
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*--------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*---------------------------------------
 1. NE3      *  258. *    .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  274. *   1.7 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *  275. *   1.5 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  174. *    .9 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *    .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  276. *   1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *    7. *    .9 *   .0   .0   .0   .2   .0   .2   .0   .0
 8. NW7      *  174. *    .7 *   .1   .0   .0   .0   .0   .0   .2   .1
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO SR-56 EB ON RAMP Ph 1 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .2
2. SE3      *   .0   .0   .0   .0   .1   .9   .3   .0   .0   .0   .0   .2
3. SW3      *   .0   .0   .0   .0   .1  1.2   .0   .0   .0   .0   .0   .2
4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .1
5. NE7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .2
6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0   .2
7. SW7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0   .1
8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO REAL SR-56 EB ON RAMP PH 1 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. NF           *     7   -450     7  -150 *  AG    1347   2.9      .0  24.0
B. NA           *     7   -150     7     0 *  AG    1347   3.4      .0  18.0
C. ND           *     7      0     7   150 *  AG    1448   2.6      .0  18.0
D. NE           *     7    150     7   450 *  AG    1448   2.9      .0  24.0
E. SF           *    -9    450    -9   150 *  AG     916   2.9      .0  19.5
F. SA           *    -9    150    -9     0 *  AG     638   3.3      .0  13.5
G. SD           *    -9      0    -9  -150 *  AG     771   2.6      .0  13.5
H. SE           *    -9   -150    -9  -450 *  AG     771   2.9      .0  19.5
I. WF           *   450      5   150     5 *  AG       6   2.9      .0  19.5
J. WA           *   150      5     0     5 *  AG       6   3.7      .0  18.0
K. WD           *     0      5  -150     5 *  AG       0   2.6      .0  13.5
L. WE           *  -150      5  -450     5 *  AG       0   2.9      .0  19.5
M. EF           *  -450     -9  -150    -9 *  AG    1701   2.9      .0  10.5
N. EA           *  -150     -9     0    -9 *  AG    1164   4.5      .0   9.9
O. ED           *     0     -9   150    -9 *  AG    1751   4.4      .0   9.9
P. EE           *   150     -9   450    -9 *  AG    1751   2.9      .0  10.5
Q. NL           *     0      0     0  -150 *  AG       0   3.3      .0   9.9
R. SL           *     0      0    -5   150 *  AG     278   3.4      .0   9.9
S. WL           *     0      0   150     0 *  AG       0   3.7      .0   9.9
T. EL           *     0      0  -150    -9 *  AG     537   4.0      .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB ON RAMP PH 1 PM
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  186. *   1.0 *   .1   .5   .0   .0   .0   .0   .0   .1
 2. SE3      *  275. *   1.9 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *   1.8 *   .0   .2   .0   .0   .0   .0   .1   .0
 4. NW3      *  174. *    .8 *   .2   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  187. *    .8 *   .1   .3   .0   .0   .0   .0   .0   .1
 6. SE7      *  276. *   1.1 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 8. NW7      *  173. *    .7 *   .2   .0   .0   .0   .0   .0   .2   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO REAL SR-56 EB ON RAMP PH 1 PM
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .8   .5   .0   .0   .0   .0   .2
3. SW3      *   .0   .0   .0   .0   .0   .3  1.1   .1   .0   .0   .0   .0
4. NW3      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
5. NE7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .0   .0   .6   .0   .0   .0   .0   .0   .1
7. SW7      *   .0   .0   .0   .0   .0   .0   .8   .0   .0   .0   .0   .0
8. NW7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0   .0
```

```
                CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                         JUNE 1989 VERSION
                         PAGE   1

                    JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM NP
                    RUN: Hour 1           (WORST CASE ANGLE)
              POLLUTANT: Carbon Monoxide


        I.  SITE VARIABLES

             U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
           BRG= WORST CASE            VD=   .0 CM/S
          CLAS=     7 (G)             VS=   .0 CM/S
          MIXH= 1000. M              AMB=   .0 PPM
         SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


       II.  LINK VARIABLES

          LINK      *  LINK COORDINATES (M)   *                EF     H     W
       DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
    ----------------*-------------------------*-----------------------------
-
     A. NF          *     7  -450     7  -150 *  AG    830   1.2     .0
24.0
     B. NA          *     7  -150     7     0 *  AG    830   1.6     .0
18.0
     C. ND          *     7     0     7   150 *  AG   1310   1.3     .0
18.0
     D. NE          *     7   150     7   450 *  AG   1310   1.2     .0
24.0
     E. SF          *    -9   450    -9   150 *  AG   1630   1.2     .0
19.5
     F. SA          *    -9   150    -9     0 *  AG   1480   1.7     .0
13.5
     G. SD          *    -9     0    -9  -150 *  AG   1790   1.3     .0
13.5
     H. SE          *    -9  -150    -9  -450 *  AG   1790   1.2     .0
19.5
     I. WF          *   450     5   150     5 *  AG      0   1.2     .0
19.5
     J. WA          *   150     5     0     5 *  AG      0   1.7     .0
18.0
     K. WD          *     0     5  -150     5 *  AG      0   1.3     .0
13.5
     L. WE          *  -150     5  -450     5 *  AG      0   1.2     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   2040   1.2     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1240   2.1     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   1400   2.0     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   1400   1.2     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   1.6     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    150   1.6     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.7     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    800   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  258. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  275. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *    .8 *   .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *  174. *    .5 *   .0   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *    .4 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  276. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *    8. *    .6 *   .0   .0   .0   .0   .0   .2   .0   .0
 8. NW7      *  173. *    .4 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.2
 2. SE3      *   .0   .0   .0   .0   .0   .4   .2   .0   .0   .0   .0
.1
 3. SW3      *   .0   .0   .0   .0   .0   .2   .4   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.1
 6. SE7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.1
 7. SW7      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ---------------*-------------------------*-----------------------------
-
 A. NF          *     7  -450     7  -150 *  AG   1920   1.2     .0
24.0
 B. NA          *     7  -150     7     0 *  AG   1920   1.6     .0
18.0
 C. ND          *     7     0     7   150 *  AG   1660   1.2     .0
18.0
 D. NE          *     7   150     7   450 *  AG   1660   1.2     .0
24.0
 E. SF          *    -9   450    -9   150 *  AG   1630   1.2     .0
19.5
 F. SA          *    -9   150    -9     0 *  AG   1280   1.6     .0
13.5
 G. SD          *    -9     0    -9  -150 *  AG   1480   1.3     .0
13.5
 H. SE          *    -9  -150    -9  -450 *  AG   1480   1.2     .0
19.5
 I. WF          *   450     5   150     5 *  AG      0   1.2     .0
19.5
 J. WA          *   150     5     0     5 *  AG      0   1.8     .0
18.0
 K. WD          *     0     5  -150     5 *  AG      0   1.3     .0
13.5
 L. WE          *  -150     5  -450     5 *  AG      0   1.2     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   2147   1.2     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1407   2.1     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   2557   2.1     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   2557   1.2     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   1.6     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    350   1.6     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.8     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    740   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *              CONC/LINK
             *  BRG  * CONC  *                (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  187. *     .6 *   .0   .3   .0   .0   .0   .0   .0   .0
 2. SE3      *  275. *    1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *    1.1 *   .0   .1   .0   .0   .0   .0   .1   .0
 4. NW3      *  173. *     .6 *   .0   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  188. *     .5 *   .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  299. *     .7 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  172. *     .5 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .4   .4   .0   .0   .0   .0
.1
 3. SW3      *   .0   .0   .0   .0   .0   .2   .7   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .4   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .5   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     7  -450     7  -150 *  AG    853   1.2     .0
24.0
 B. NA           *     7  -150     7     0 *  AG    853   1.6     .0
18.0
 C. ND           *     7     0     7   150 *  AG   1333   1.3     .0
18.0
 D. NE           *     7   150     7   450 *  AG   1333   1.2     .0
24.0
 E. SF           *    -9   450    -9   150 *  AG   1650   1.2     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG   1490   1.7     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG   1800   1.3     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG   1800   1.2     .0
19.5
 I. WF           *   450     5   150     5 *  AG      0   1.2     .0
19.5
 J. WA           *   150     5     0     5 *  AG      0   1.7     .0
18.0
 K. WD           *     0     5  -150     5 *  AG      0   1.3     .0
13.5
 L. WE           *  -150     5  -450     5 *  AG      0   1.2     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   2040   1.2     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1240   2.1     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   1410   2.0     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   1410   1.2     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   1.6     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    160   1.6     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.7     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    800   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  258. *    .5 *  .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  275. *    .9 *  .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *    .8 *  .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *  174. *    .5 *  .0   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  257. *    .4 *  .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  276. *    .6 *  .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *    8. *    .6 *  .0   .0   .0   .0   .0   .2   .0   .0
 8. NW7      *  173. *    .4 *  .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.2
 2. SE3      *   .0   .0   .0   .0   .0   .4   .2   .0   .0   .0   .0
.1
 3. SW3      *   .0   .0   .0   .0   .0   .2   .4   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.1
 6. SE7      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.1
 7. SW7      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     7  -450     7  -150 *  AG   1944   1.2     .0
24.0
 B. NA           *     7  -150     7     0 *  AG   1944   1.6     .0
18.0
 C. ND           *     7     0     7   150 *  AG   1684   1.2     .0
18.0
 D. NE           *     7   150     7   450 *  AG   1684   1.2     .0
24.0
 E. SF           *    -9   450    -9   150 *  AG   1698   1.2     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG   1314   1.6     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG   1514   1.3     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG   1514   1.2     .0
19.5
 I. WF           *   450     5   150     5 *  AG      0   1.2     .0
19.5
 J. WA           *   150     5     0     5 *  AG      0   1.8     .0
18.0
 K. WD           *     0     5  -150     5 *  AG      0   1.3     .0
13.5
 L. WE           *  -150     5  -450     5 *  AG      0   1.2     .0
19.5
```

```
 M. EF           *  -450    -9  -150    -9 *  AG   2147   1.2     .0
10.5
 N. EA           *  -150    -9     0    -9 *  AG   1407   2.1     .0
9.9
 O. ED           *     0    -9   150    -9 *  AG   2591   2.1     .0
9.9
 P. EE           *   150    -9   450    -9 *  AG   2591   1.2     .0
10.5
 Q. NL           *     0     0     0  -150 *  AG      0   1.5     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    384   1.6     .0
9.9
 S. WL           *     0     0   150     0 *  AG      0   1.8     .0
9.9
 T. EL           *     0     0  -150    -9 *  AG    740   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     14   1.8
 2. SE3      *     19    -14   1.8
 3. SW3      *    -19    -14   1.8
 4. NW3      *    -19     14   1.8
 5. NE7      *     23     18   1.8
 6. SE7      *     23    -18   1.8
 7. SW7      *    -23    -18   1.8
 8. NW7      *    -23     18   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  187. *     .6 *   .0   .3   .0   .0   .0   .0   .0   .0
 2. SE3      *  275. *    1.2 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   86. *    1.2 *   .0   .1   .0   .0   .0   .0   .1   .0
 4. NW3      *  173. *     .6 *   .0   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  188. *     .5 *   .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  300. *     .7 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  172. *     .5 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL SR-56 EB RAMP 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .4   .4   .0   .0   .0   .0
.1
 3. SW3      *   .0   .0   .0   .0   .0   .2   .7   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .4   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .5   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG    405   2.9     .0
19.5
 B. NA           *     9  -150     9     0 *  AG    178   4.0     .0
18.0
 C. ND           *     9     0     9   150 *  AG    407   2.7     .0
13.5
 D. NE           *     9   150     9   450 *  AG    407   2.9     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    867   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    708   4.0     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    885   2.8     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    885   2.9     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1632   2.9     .0
19.5
 J. WA           *   150     7     0     7 *  AG   1432   3.1     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   1972   2.6     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   1972   2.9     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   1463   2.9     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1249   3.1     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1103   2.4     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1103   2.9     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    227   4.0     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    159   4.0     .0
9.9
 S. WL           *     0     0   150     2 *  AG    200   3.0     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    214   3.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  264. *   1.2 *  .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.1 *  .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *    .9 *  .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *   96. *   1.1 *  .0   .0   .0   .0   .0   .2   .0   .0
 5. NE7      *  264. *    .9 *  .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  277. *    .9 *  .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *    .8 *  .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *   96. *    .9 *  .0   .0   .0   .0   .0   .1   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *    I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .5   .1   .2   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .3   .0   .4   .0   .0   .0   .0   .0
.0
 3. SW3      *   .2   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 4. NW3      *   .1   .5   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
 5. NE7      *   .0   .0   .3   .2   .2   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .2   .0   .3   .0   .0   .0   .0   .0
.0
 7. SW7      *   .2   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7      *   .1   .3   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG   1095   2.9     .0
19.5
 B. NA           *     9  -150     9     0 *  AG    659   3.9     .0
18.0
 C. ND           *     9     0     9   150 *  AG   1024   2.7     .0
13.5
 D. NE           *     9   150     9   450 *  AG   1024   2.9     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    488   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    341   3.9     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    644   2.7     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    644   2.9     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1022   2.9     .0
19.5
 J. WA           *   150     7     0     7 *  AG    917   3.1     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   1368   2.5     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   1368   2.9     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   2179   2.9     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1740   3.3     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1748   2.6     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1748   2.9     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    436   3.9     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    147   3.9     .0
9.9
 S. WL           *     0     0   150     2 *  AG    105   3.1     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    439   3.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *               CONC/LINK
             *  BRG  * CONC  *                 (PPM)
  RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  263. *   1.2 *   .0   .0   .2   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.4 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  171. *   1.0 *   .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  262. *   1.0 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  277. *   1.1 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *    .9 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  170. *    .8 *   .1   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *  .0   .0   .4   .0   .2   .1   .0   .0   .0   .0   .0
.0
 2. SE3      *  .0   .0   .0   .2   .1   .6   .0   .0   .0   .0   .0
.0
 3. SW3      *  .2   .0   .0   .0   .0   .0   .5   .1   .0   .0   .0
.0
 4. NW3      *  .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
 5. NE7      *  .0   .0   .3   .0   .2   .1   .0   .0   .0   .0   .0
.0
 6. SE7      *  .0   .0   .0   .2   .1   .4   .0   .0   .0   .0   .0
.0
 7. SW7      *  .2   .0   .0   .0   .0   .0   .3   .2   .0   .0   .0
.0
 8. NW7      *  .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG    480   2.9     .0
19.5
 B. NA           *     9  -150     9     0 *  AG    196   4.0     .0
18.0
 C. ND           *     9     0     9   150 *  AG    425   2.7     .0
13.5
 D. NE           *     9   150     9   450 *  AG    425   2.9     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    928   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    769   4.2     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG   1088   3.2     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG   1088   2.9     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1927   2.9     .0
19.5
 J. WA           *   150     7     0     7 *  AG   1666   3.2     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   2304   2.6     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   2304   2.9     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   1675   2.9      .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1449   3.1      .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1193   2.4      .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1193   2.9      .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    284   4.0      .0
9.9
 R. SL           *     0     0    -5   150 *  AG    159   4.0      .0
9.9
 S. WL           *     0     0   150     2 *  AG    261   3.0      .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    226   3.0      .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  264. *   1.3 *   .0   .0   .0   .0   .0   .1   .0   .0
 2. SE3      *  276. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
 3. SW3      *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *   96. *   1.3 *   .0   .0   .0   .0   .0   .2   .0   .0
 5. NE7      *  264. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  277. *   1.0 *   .0   .0   .0   .0   .0   .0   .1   .0
 7. SW7      *   83. *    .9 *   .0   .0   .0   .0   .0   .0   .2   .0
 8. NW7      *   96. *   1.0 *   .0   .0   .0   .0   .0   .2   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 AM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .6   .1   .2   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .3   .1   .5   .0   .0   .0   .0   .0
.0
 3. SW3      *   .3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 4. NW3      *   .1   .6   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
 5. NE7      *   .0   .0   .4   .2   .2   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .3   .0   .4   .0   .0   .0   .0   .0
.0
 7. SW7      *   .2   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7      *   .2   .4   .0   .0   .0   .0   .0   .2   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG   1355   2.9     .0
19.5
 B. NA           *     9  -150     9     0 *  AG    740   3.9     .0
18.0
 C. ND           *     9     0     9   150 *  AG   1106   2.9     .0
13.5
 D. NE           *     9   150     9   450 *  AG   1106   2.9     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    536   2.9     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    389   3.9     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    804   2.7     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    804   2.9     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1254   2.9     .0
19.5
 J. WA           *   150     7     0     7 *  AG   1101   3.1     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   1763   2.6     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   1763   2.9     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   2671   2.9     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   2177   3.5     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   2143   2.6     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   2143   2.9     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    615   4.0     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    147   3.9     .0
9.9
 S. WL           *     0     0   150     2 *  AG    153   3.1     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    494   3.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *   1.4 *   .0   .0   .2   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.7 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *  171. *   1.2 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  262. *   1.2 *   .0   .0   .2   .0   .0   .0   .0   .0
 6. SE7      *  277. *   1.4 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  169. *   1.0 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .5   .0   .3   .2   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .2   .2   .8   .0   .0   .0   .0   .0
.0
 3. SW3      *   .2   .0   .0   .0   .0   .0   .6   .1   .0   .0   .0
.0
 4. NW3      *   .0   .0   .3   .0   .0   .3   .0   .0   .1   .0   .0
.0
 5. NE7      *   .0   .0   .4   .0   .3   .2   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .2   .1   .6   .0   .0   .0   .0   .0
.0
 7. SW7      *   .2   .0   .0   .0   .0   .0   .4   .2   .0   .0   .0
.0
 8. NW7      *   .0   .0   .2   .0   .0   .2   .0   .0   .1   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 AM Nea
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     9  -450     9  -150 *  AG    483   2.9     .0  19.5
B. NA           *     9  -150     9     0 *  AG    199   4.0     .0  18.0
C. ND           *     9     0     9   150 *  AG    435   2.7     .0  13.5
D. NE           *     9   150     9   450 *  AG    435   2.9     .0  19.5
E. SF           *    -9   450    -9   150 *  AG    947   2.9     .0  19.5
F. SA           *    -9   150    -9     0 *  AG    783   4.2     .0  13.5
G. SD           *    -9     0    -9  -150 *  AG   1107   3.2     .0  13.5
H. SE           *    -9  -150    -9  -450 *  AG   1107   2.9     .0  19.5
I. WF           *   450     7   150     7 *  AG   1946   2.9     .0  19.5
J. WA           *   150     7     0     7 *  AG   1685   3.2     .0  13.5
K. WD           *     0     7  -150     7 *  AG   2309   2.6     .0  13.5
L. WE           *  -150     7  -450     7 *  AG   2309   2.9     .0  19.5
M. EF           *  -450    -7  -150    -7 *  AG   1691   2.9     .0  19.5
N. EA           *  -150    -7     0    -7 *  AG   1460   3.1     .0  13.5
O. ED           *     0    -7   150    -7 *  AG   1216   2.4     .0  13.5
P. EE           *   150    -7   450    -7 *  AG   1216   2.9     .0  19.5
Q. NL           *     0     0     5  -150 *  AG    284   4.0     .0   9.9
R. SL           *     0     0    -5   150 *  AG    164   4.0     .0   9.9
S. WL           *     0     0   150     2 *  AG    261   3.0     .0   9.9
T. EL           *     0     0  -150    -2 *  AG    231   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 AM Nea
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  264. *   1.3 *   .0   .0   .0   .0   .0   .1   .0   .0
 2. SE3      *  276. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
 3. SW3      *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *   96. *   1.3 *   .0   .0   .0   .0   .0   .2   .0   .0
 5. NE7      *  264. *   1.1 *   .0   .0   .0   .0   .0   .1   .0   .0
 6. SE7      *  277. *   1.0 *   .0   .0   .0   .0   .0   .0   .1   .0
 7. SW7      *   83. *    .9 *   .0   .0   .0   .0   .0   .0   .2   .0
 8. NW7      *   96. *   1.0 *   .0   .0   .0   .0   .0   .2   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 AM Nea
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .6   .1   .2   .0   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .3   .1   .5   .0   .0   .0   .0   .0   .0
3. SW3      *   .3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
4. NW3      *   .1   .6   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
5. NE7      *   .0   .0   .4   .2   .2   .0   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .3   .1   .4   .0   .0   .0   .0   .0   .0
7. SW7      *   .2   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
8. NW7      *   .2   .4   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 PM Nea
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S              Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *             EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*-------------------------------
A. NF           *     9  -450     9  -150 *  AG   1367   2.9     .0  19.5
B. NA           *     9  -150     9     0 *  AG    754   3.9     .0  18.0
C. ND           *     9     0     9   150 *  AG   1130   2.9     .0  13.5
D. NE           *     9   150     9   450 *  AG   1130   2.9     .0  19.5
E. SF           *    -9   450    -9   150 *  AG    547   2.9     .0  19.5
F. SA           *    -9   150    -9     0 *  AG    396   3.9     .0  13.5
G. SD           *    -9     0    -9  -150 *  AG    812   2.7     .0  13.5
H. SE           *    -9  -150    -9  -450 *  AG    812   2.9     .0  19.5
I. WF           *   450     7   150     7 *  AG   1272   2.9     .0  19.5
J. WA           *   150     7     0     7 *  AG   1119   3.1     .0  13.5
K. WD           *     0     7  -150     7 *  AG   1778   2.5     .0  13.5
L. WE           *  -150     7  -450     7 *  AG   1778   2.9     .0  19.5
M. EF           *  -450    -7  -150    -7 *  AG   2706   2.9     .0  19.5
N. EA           *  -150    -7     0    -7 *  AG   2203   3.4     .0  13.5
O. ED           *     0    -7   150    -7 *  AG   2172   2.6     .0  13.5
P. EE           *   150    -7   450    -7 *  AG   2172   2.9     .0  19.5
Q. NL           *     0     0     5  -150 *  AG    613   4.0     .0   9.9
R. SL           *     0     0    -5   150 *  AG    151   3.9     .0   9.9
S. WL           *     0     0   150     2 *  AG    153   3.1     .0   9.9
T. EL           *     0     0  -150    -2 *  AG    503   3.1     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 PM Nea
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *   1.4 *   .0   .0   .2   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.7 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.3 *   .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *  171. *   1.2 *   .1   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  262. *   1.1 *   .0   .0   .2   .0   .0   .0   .0   .0
 6. SE7      *  277. *   1.4 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.1 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  169. *   1.0 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 2 PM Nea
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                        CONC/LINK
           *                          (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .0   .5   .0   .3   .2   .0   .0   .0   .0   .0   .0
2. SE3     *   .0   .0   .0   .2   .2   .8   .0   .0   .0   .0   .0   .0
3. SW3     *   .2   .0   .0   .0   .0   .0   .6   .1   .0   .0   .0   .0
4. NW3     *   .0   .0   .2   .0   .0   .2   .0   .0   .1   .0   .0   .0
5. NE7     *   .0   .0   .4   .0   .3   .2   .0   .0   .0   .0   .0   .0
6. SE7     *   .0   .0   .0   .2   .1   .5   .0   .0   .0   .0   .0   .0
7. SW7     *   .2   .0   .0   .0   .0   .0   .4   .2   .0   .0   .0   .0
8. NW7     *   .0   .0   .2   .0   .0   .2   .0   .0   .1   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 1 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     9  -450     9  -150 *  AG     444   2.9     .0  19.5
B. NA           *     9  -150     9     0 *  AG     196   4.0     .0  18.0
C. ND           *     9     0     9   150 *  AG     427   2.7     .0  13.5
D. NE           *     9   150     9   450 *  AG     427   2.9     .0  19.5
E. SF           *    -9   450    -9   150 *  AG     939   2.9     .0  19.5
F. SA           *    -9   150    -9     0 *  AG     775   4.2     .0  13.5
G. SD           *    -9     0    -9  -150 *  AG    1021   2.8     .0  13.5
H. SE           *    -9  -150    -9  -450 *  AG    1021   2.9     .0  19.5
I. WF           *   450     7   150     7 *  AG    1927   2.9     .0  19.5
J. WA           *   150     7     0     7 *  AG    1629   3.1     .0  13.5
K. WD           *     0     7  -150     7 *  AG    2222   2.6     .0  13.5
L. WE           *  -150     7  -450     7 *  AG    2222   2.9     .0  19.5
M. EF           *  -450    -7  -150    -7 *  AG    1533   2.9     .0  19.5
N. EA           *  -150    -7     0    -7 *  AG    1309   3.1     .0  13.5
O. ED           *     0    -7   150    -7 *  AG    1173   2.4     .0  13.5
P. EE           *   150    -7   450    -7 *  AG    1173   2.9     .0  19.5
Q. NL           *     0     0     5  -150 *  AG     248   4.0     .0   9.9
R. SL           *     0     0    -5   150 *  AG     164   4.0     .0   9.9
S. WL           *     0     0   150     2 *  AG     298   3.0     .0   9.9
T. EL           *     0     0  -150    -2 *  AG     224   3.0     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 1 AM Ne
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  264. *   1.3 *   .0   .0   .0   .0   .0   .1   .0   .0
 2. SE3      *  276. *   1.2 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.0 *   .0   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *   96. *   1.2 *   .0   .0   .0   .0   .0   .2   .0   .0
 5. NE7      *  264. *   1.0 *   .0   .0   .0   .0   .0   .1   .0   .0
 6. SE7      *  277. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   83. *    .9 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *   96. *   1.0 *   .0   .0   .0   .0   .0   .2   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO DEL MAR HEIGHTS RD Ph 1 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                        CONC/LINK
           *                          (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-------------------------------------------------------------
1. NE3     *   .0   .0   .6   .1   .2   .0   .0   .0   .0   .0   .0   .0
2. SE3     *   .0   .0   .0   .3   .1   .5   .0   .0   .0   .0   .0   .0
3. SW3     *   .3   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
4. NW3     *   .1   .6   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
5. NE7     *   .0   .0   .4   .2   .2   .0   .0   .0   .0   .0   .0   .0
6. SE7     *   .0   .0   .0   .3   .0   .3   .0   .0   .0   .0   .0   .0
7. SW7     *   .2   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
8. NW7     *   .2   .4   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: EL CAMINO REAL DEL MAR HEIGHTS RD Ph 1 P
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     9  -450     9  -150 *  AG   1215   2.9     .0  19.5
B. NA           *     9  -150     9     0 *  AG    765   3.9     .0  18.0
C. ND           *     9     0     9   150 *  AG   1106   2.9     .0  13.5
D. NE           *     9   150     9   450 *  AG   1106   2.9     .0  19.5
E. SF           *    -9   450    -9   150 *  AG    520   2.9     .0  19.5
F. SA           *    -9   150    -9     0 *  AG    369   3.9     .0  13.5
G. SD           *    -9     0    -9  -150 *  AG    707   2.7     .0  13.5
H. SE           *    -9  -150    -9  -450 *  AG    707   2.9     .0  19.5
I. WF           *   450     7   150     7 *  AG   1152   2.9     .0  19.5
J. WA           *   150     7     0     7 *  AG   1007   3.1     .0  13.5
K. WD           *     0     7  -150     7 *  AG   1482   2.5     .0  13.5
L. WE           *  -150     7  -450     7 *  AG   1482   2.9     .0  19.5
M. EF           *  -450    -7  -150    -7 *  AG   2462   2.9     .0  19.5
N. EA           *  -150    -7     0    -7 *  AG   1984   3.4     .0  13.5
O. ED           *     0    -7   150    -7 *  AG   2054   2.6     .0  13.5
P. EE           *   150    -7   450    -7 *  AG   2054   2.9     .0  19.5
Q. NL           *     0     0     5  -150 *  AG    450   3.9     .0   9.9
R. SL           *     0     0    -5   150 *  AG    151   3.9     .0   9.9
S. WL           *     0     0   150     2 *  AG    145   3.1     .0   9.9
T. EL           *     0     0  -150    -2 *  AG    478   3.1     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HEIGHTS RD Ph 1 P
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*-----------------------------------------
 1. NE3      *  263. *   1.3 *   .0   .0   .2   .0   .0   .0   .0   .0
 2. SE3      *  276. *   1.5 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *   1.2 *   .0   .1   .0   .0   .0   .0   .1   .0
 4. NW3      *  171. *   1.1 *   .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  262. *   1.1 *   .0   .0   .2   .0   .0   .0   .0   .0
 6. SE7      *  277. *   1.2 *   .0   .1   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *   1.0 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  170. *    .9 *   .1   .0   .0   .0   .0   .0   .2   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: EL CAMINO REAL DEL MAR HEIGHTS RD Ph 1 P
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .4   .0   .3   .2   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .2   .1   .7   .0   .0   .0   .0   .0   .0
3. SW3      *   .2   .0   .0   .0   .0   .0   .6   .1   .0   .0   .0   .0
4. NW3      *   .0   .0   .2   .0   .0   .2   .0   .0   .1   .0   .0   .0
5. NE7      *   .0   .0   .3   .0   .2   .1   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .2   .1   .5   .0   .0   .0   .0   .0   .0
7. SW7      *   .2   .0   .0   .0   .0   .0   .4   .2   .0   .0   .0   .0
8. NW7      *   .0   .0   .2   .0   .0   .2   .0   .0   .0   .0   .0   .0
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   1

                  JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM NP
                  RUN: Hour 1          (WORST CASE ANGLE)
            POLLUTANT: Carbon Monoxide


    I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


   II.  LINK VARIABLES

        LINK      *  LINK COORDINATES (M)   *               EF     H     W
     DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
  ----------------*-------------------------*-----------------------------
-
  A. NF           *     9  -450     9  -150 *  AG    469   1.2     .0
19.5
  B. NA           *     9  -150     9     0 *  AG    234   1.8     .0
18.0
  C. ND           *     9     0     9   150 *  AG    534   1.3     .0
13.5
  D. NE           *     9   150     9   450 *  AG    534   1.2     .0
19.5
  E. SF           *    -9   450    -9   150 *  AG   1120   1.2     .0
19.5
  F. SA           *    -9   150    -9     0 *  AG    950   1.9     .0
13.5
  G. SD           *    -9     0    -9  -150 *  AG   1197   1.5     .0
13.5
  H. SE           *    -9  -150    -9  -450 *  AG   1197   1.2     .0
19.5
  I. WF           *   450     7   150     7 *  AG   1926   1.2     .0
19.5
  J. WA           *   150     7     0     7 *  AG   1690   1.6     .0
13.5
  K. WD           *     0     7  -150     7 *  AG   2215   1.3     .0
13.5
  L. WE           *  -150     7  -450     7 *  AG   2215   1.2     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   1633   1.2     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1399   1.6     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1202   1.2     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1202   1.2     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    235   1.8     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    170   1.8     .0
9.9
 S. WL           *     0     0   150     2 *  AG    236   1.5     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    234   1.5     .0
9.9
```

```
                   CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                            JUNE 1989 VERSION
                            PAGE   2

                       JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM NP
                       RUN: Hour 1           (WORST CASE ANGLE)
                 POLLUTANT: Carbon Monoxide


         III.  RECEPTOR LOCATIONS

                     *    COORDINATES (M)
           RECEPTOR  *    X      Y      Z
         ------------*---------------------
         1. NE3      *     19     17   1.8
         2. SE3      *     19    -17   1.8
         3. SW3      *    -19    -17   1.8
         4. NW3      *    -19     17   1.8
         5. NE7      *     23     20   1.8
         6. SE7      *     23    -20   1.8
         7. SW7      *    -23    -20   1.8
         8. NW7      *    -23     20   1.8


          IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

                     *       * PRED  *               CONC/LINK
                     *  BRG  * CONC  *                 (PPM)
          RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
        -------------*-------*-------*--------------------------------------------
         1. NE3      *  263. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
         2. SE3      *  276. *    .6 *   .0   .0   .0   .0   .0   .0   .0   .0
         3. SW3      *   83. *    .5 *   .0   .0   .0   .0   .0   .0   .1   .0
         4. NW3      *   96. *    .6 *   .0   .0   .0   .0   .0   .1   .0   .0
         5. NE7      *  262. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
         6. SE7      *  278. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
         7. SW7      *    8. *    .5 *   .0   .0   .0   .0   .0   .2   .0   .0
         8. NW7      *   98. *    .5 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

              *                         CONC/LINK
              *                           (PPM)
  RECEPTOR    *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .3   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .1   .0   .3   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 4. NW3      *   .0   .3   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG   1474   1.2     .0
19.5
 B. NA           *     9  -150     9     0 *  AG   1023   1.8     .0
18.0
 C. ND           *     9     0     9   150 *  AG   1420   1.5     .0
13.5
 D. NE           *     9   150     9   450 *  AG   1420   1.2     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    690   1.2     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    500   1.8     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG    803   1.3     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG    803   1.2     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1244   1.2     .0
19.5
 J. WA           *   150     7     0     7 *  AG   1120   1.6     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   1661   1.3     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   1661   1.2     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   2416   1.2     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1936   1.6     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1940   1.3     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1940   1.2     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    451   1.8     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    190   1.8     .0
9.9
 S. WL           *     0     0   150     2 *  AG    124   1.5     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    480   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *     .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  276. *     .7 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *   84. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  171. *     .6 *   .0   .0   .0   .0   .0   .0   .1   .0
 5. NE7      *  262. *     .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  278. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   82. *     .5 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  168. *     .5 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .2   .0   .1   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .1   .0   .0   .1   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .2   .0   .1   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .1   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
                 CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                          JUNE 1989 VERSION
                          PAGE   1

                     JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM WP
                     RUN: Hour 1          (WORST CASE ANGLE)
               POLLUTANT: Carbon Monoxide


         I.  SITE VARIABLES

              U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
            BRG= WORST CASE            VD=   .0 CM/S
           CLAS=     7 (G)             VS=   .0 CM/S
           MIXH= 1000. M              AMB=   .0 PPM
          SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


        II.  LINK VARIABLES

           LINK      *  LINK COORDINATES (M)   *              EF     H     W
        DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
     ----------------*------------------------*-----------------------------
-
     A. NF           *     9  -450     9  -150 *  AG    581   1.2     .0
19.5
     B. NA           *     9  -150     9     0 *  AG    264   1.9     .0
18.0
     C. ND           *     9     0     9   150 *  AG    564   1.3     .0
13.5
     D. NE           *     9   150     9   450 *  AG    564   1.2     .0
19.5
     E. SF           *    -9   450    -9   150 *  AG   1189   1.2     .0
19.5
     F. SA           *    -9   150    -9     0 *  AG   1019   1.9     .0
13.5
     G. SD           *    -9     0    -9  -150 *  AG   1425   1.8     .0
13.5
     H. SE           *    -9  -150    -9  -450 *  AG   1425   1.2     .0
19.5
     I. WF           *   450     7   150     7 *  AG   2257   1.2     .0
19.5
     J. WA           *   150     7     0     7 *  AG   1953   1.6     .0
13.5
     K. WD           *     0     7  -150     7 *  AG   2606   1.3     .0
13.5
     L. WE           *  -150     7  -450     7 *  AG   2606   1.2     .0
19.5
```

```
 M. EF           *  -450    -7  -150    -7 *  AG   1915   1.2     .0
19.5
 N. EA           *  -150    -7     0    -7 *  AG   1661   1.6     .0
13.5
 O. ED           *     0    -7   150    -7 *  AG   1347   1.2     .0
13.5
 P. EE           *   150    -7   450    -7 *  AG   1347   1.2     .0
19.5
 Q. NL           *     0     0     5  -150 *  AG    317   1.9     .0
9.9
 R. SL           *     0     0    -5   150 *  AG    170   1.9     .0
9.9
 S. WL           *     0     0   150     2 *  AG    304   1.5     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG    254   1.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  263. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  276. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *   82. *     .6 *   .0   .0   .0   .0   .0   .0   .1   .0
 4. NW3      *  173. *     .7 *   .0   .0   .0   .0   .0   .0   .3   .0
 5. NE7      *  262. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  278. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   82. *     .5 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  171. *     .6 *   .0   .0   .0   .0   .0   .0   .2   .0
```

```
              CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                       JUNE 1989 VERSION
                       PAGE   3

                  JOB: EL CAMINO REAL DEL MAR HTS RD 2030 AM WP
                  RUN: Hour 1           (WORST CASE ANGLE)
            POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*-----------------------------------------------------------
-
 1. NE3     *   .0   .0   .3   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3     *   .0   .0   .0   .1   .0   .3   .0   .0   .0   .0   .0
.0
 3. SW3     *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 4. NW3     *   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7     *   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7     *   .0   .0   .0   .1   .0   .2   .0   .0   .0   .0   .0
.0
 7. SW7     *   .0   .0   .0   .0   .0   .0   .1   .0   .0   .0   .0
.0
 8. NW7     *   .0   .0   .2   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     9  -450     9  -150 *  AG   1799   1.2     .0
19.5
 B. NA           *     9  -150     9     0 *  AG   1123   1.8     .0
18.0
 C. ND           *     9     0     9   150 *  AG   1520   1.5     .0
13.5
 D. NE           *     9   150     9   450 *  AG   1520   1.2     .0
19.5
 E. SF           *    -9   450    -9   150 *  AG    761   1.2     .0
19.5
 F. SA           *    -9   150    -9     0 *  AG    571   1.8     .0
13.5
 G. SD           *    -9     0    -9  -150 *  AG   1041   1.3     .0
13.5
 H. SE           *    -9  -150    -9  -450 *  AG   1041   1.2     .0
19.5
 I. WF           *   450     7   150     7 *  AG   1588   1.2     .0
19.5
 J. WA           *   150     7     0     7 *  AG   1393   1.6     .0
13.5
 K. WD           *     0     7  -150     7 *  AG   2206   1.3     .0
13.5
 L. WE           *  -150     7  -450     7 *  AG   2206   1.2     .0
19.5
```

```
 M. EF            *  -450    -7  -150    -7 *  AG   3046   1.2     .0
19.5
 N. EA            *  -150    -7     0    -7 *  AG   2499   1.8     .0
13.5
 O. ED            *     0    -7   150    -7 *  AG   2427   1.3     .0
13.5
 P. EE            *   150    -7   450    -7 *  AG   2427   1.2     .0
19.5
 Q. NL            *     0     0     5  -150 *  AG    676   1.8     .0
9.9
 R. SL            *     0     0    -5   150 *  AG    190   1.8     .0
9.9
 S. WL            *     0     0   150     2 *  AG    195   1.5     .0
9.9
 T. EL            *     0     0  -150    -2 *  AG    547   1.6     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     19     17   1.8
 2. SE3      *     19    -17   1.8
 3. SW3      *    -19    -17   1.8
 4. NW3      *    -19     17   1.8
 5. NE7      *     23     20   1.8
 6. SE7      *     23    -20   1.8
 7. SW7      *    -23    -20   1.8
 8. NW7      *    -23     20   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  262. *     .8 *   .0   .0   .1   .0   .0   .0   .0   .0
 2. SE3      *  277. *    1.0 *   .0   .1   .0   .0   .0   .0   .0   .0
 3. SW3      *   83. *     .7 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  171. *     .7 *   .0   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  261. *     .7 *   .0   .0   .1   .0   .0   .0   .0   .0
 6. SE7      *  278. *     .8 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   82. *     .6 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  168. *     .6 *   .0   .0   .0   .0   .0   .0   .1   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: EL CAMINO REAL DEL MAR HTS RD 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*-------------------------------------------------------------
-
 1. NE3     *   .0   .0   .3   .0   .1   .1   .0   .0   .0   .0   .0
.0
 2. SE3     *   .0   .0   .0   .1   .0   .5   .0   .0   .0   .0   .0
.0
 3. SW3     *   .0   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0
.0
 4. NW3     *   .0   .0   .2   .0   .0   .1   .0   .0   .0   .0   .0
.0
 5. NE7     *   .0   .0   .2   .0   .0   .1   .0   .0   .0   .0   .0
.0
 6. SE7     *   .0   .0   .0   .0   .0   .3   .0   .0   .0   .0   .0
.0
 7. SW7     *   .0   .0   .0   .0   .0   .0   .2   .0   .0   .0   .0
.0
 8. NW7     *   .0   .0   .1   .0   .0   .1   .0   .0   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM NP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

        U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE            VD=   .0 CM/S
     CLAS=     7 (G)             VS=   .0 CM/S
     MIXH= 1000. M              AMB=   .0 PPM
    SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    340   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    337   3.0     .0
9.9
 C. ND           *     5     0     5   150 *  AG    272   2.4     .0
9.9
 D. NE           *     5   150     5   450 *  AG    272   2.9     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    942   2.9     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    927   3.1     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG   1134   2.5     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG   1134   2.9     .0
15.0
 I. WF           *   450     2   150     2 *  AG    227   2.9     .0
10.5
 J. WA           *   150     2     0     2 *  AG     27   4.4     .0
9.9
 K. WD           *     0     2  -150     2 *  AG      8   3.3     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG      8   2.9     .0
10.5
```

```
 M. EF            *  -450    -2  -150    -2 *  AG     30   2.9     .0
10.5
 N. EA            *  -150    -2     0    -2 *  AG     20   4.4     .0
9.9
 O. ED            *     0    -2   150    -2 *  AG    125   3.3     .0
9.9
 P. EE            *   150    -2   450    -2 *  AG    125   2.9     .0
10.5
 Q. NL            *     0     0     2  -150 *  AG      3   3.0     .0
9.9
 R. SL            *     0     0    -2   150 *  AG     15   3.0     .0
9.9
 S. WL            *     0     0   150     2 *  AG    200   4.4     .0
9.9
 T. EL            *     0     0  -150    -2 *  AG     10   4.4     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .6 *   .0   .2   .0   .0   .0   .0   .0   .2
 2. SE3      *  355. *    .5 *   .0   .0   .1   .0   .2   .0   .0   .0
 3. SW3      *    5. *    .6 *   .0   .0   .0   .0   .0   .4   .0   .0
 4. NW3      *  175. *    .6 *   .0   .0   .0   .0   .0   .0   .4   .1
 5. NE7      *  186. *    .5 *   .0   .1   .0   .0   .0   .0   .0   .2
 6. SE7      *  354. *    .4 *   .0   .0   .0   .0   .1   .0   .0   .0
 7. SW7      *   84. *    .4 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  175. *    .4 *   .0   .0   .0   .0   .0   .0   .2   .1
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF      H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    845   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    833   3.1     .0
9.9
 C. ND           *     5     0     5   150 *  AG    748   2.4     .0
9.9
 D. NE           *     5   150     5   450 *  AG    748   2.9     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    414   2.9     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    399   3.0     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG    448   2.4     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG    448   2.9     .0
15.0
 I. WF           *   450     2   150     2 *  AG     77   2.9     .0
10.5
 J. WA           *   150     2     0     2 *  AG     22   4.5     .0
9.9
 K. WD           *     0     2  -150     2 *  AG     34   4.5     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG     34   2.9     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG      14   2.9      .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG       9   4.5      .0
9.9
 O. ED           *     0    -2   150    -2 *  AG     120   4.5      .0
9.9
 P. EE           *   150    -2   450    -2 *  AG     120   2.9      .0
10.5
 Q. NL           *     0     0     2  -150 *  AG      12   3.0      .0
9.9
 R. SL           *     0     0    -2   150 *  AG      15   3.0      .0
9.9
 S. WL           *     0     0   150     2 *  AG      55   4.5      .0
9.9
 T. EL           *     0     0  -150    -2 *  AG       5   4.5      .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .6 *   .0   .4   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *    .6 *   .0   .3   .0   .0   .0   .0   .0   .0
 3. SW3      *  175. *    .4 *   .2   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *  175. *    .5 *   .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  186. *    .5 *   .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  186. *    .4 *   .0   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *  174. *    .4 *   .2   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *    .4 *   .1   .0   .0   .0   .0   .0   .1   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                         CONC/LINK
            *                           (PPM)
  RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
 -----------*-----------------------------------------------------------
-
 1. NE3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM WP
              RUN: Hour 1          (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *               EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ---------------*------------------------*-----------------------------
-
 A. NF          *     5  -450     5  -150 *  AG    371   2.9     .0
15.0
 B. NA          *     5  -150     5     0 *  AG    368   3.0     .0
9.9
 C. ND          *     5     0     5   150 *  AG    303   2.4     .0
9.9
 D. NE          *     5   150     5   450 *  AG    303   2.9     .0
15.0
 E. SF          *    -5   450    -5   150 *  AG    951   2.9     .0
15.0
 F. SA          *    -5   150    -5     0 *  AG    936   3.1     .0
9.9
 G. SD          *    -5     0    -5  -150 *  AG   1143   2.5     .0
9.9
 H. SE          *    -5  -150    -5  -450 *  AG   1143   2.9     .0
15.0
 I. WF          *   450     2   150     2 *  AG    227   2.9     .0
10.5
 J. WA          *   150     2     0     2 *  AG     27   4.5     .0
9.9
 K. WD          *     0     2  -150     2 *  AG      8   3.4     .0
9.9
 L. WE          *  -150     2  -450     2 *  AG      8   2.9     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG     30   2.9     .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG     20   4.5     .0
9.9
 O. ED           *     0    -2   150    -2 *  AG    125   3.4     .0
9.9
 P. EE           *   150    -2   450    -2 *  AG    125   2.9     .0
10.5
 Q. NL           *     0     0     2  -150 *  AG      3   3.0     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     15   3.0     .0
9.9
 S. WL           *     0     0   150     2 *  AG    200   4.5     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG     10   4.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .6 *  .0   .2   .0   .0   .0   .0   .0   .2
 2. SE3      *  355. *    .5 *  .0   .0   .1   .0   .2   .0   .0   .0
 3. SW3      *    5. *    .6 *  .0   .0   .0   .0   .0   .4   .0   .0
 4. NW3      *  175. *    .6 *  .0   .0   .0   .0   .0   .0   .4   .1
 5. NE7      *  186. *    .5 *  .0   .1   .0   .0   .0   .0   .0   .2
 6. SE7      *  354. *    .4 *  .0   .0   .0   .0   .1   .0   .0   .0
 7. SW7      *   84. *    .4 *  .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  175. *    .5 *  .0   .0   .0   .0   .0   .0   .2   .1
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                          CONC/LINK
             *                            (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    869   2.9     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    857   3.1     .0
9.9
 C. ND           *     5     0     5   150 *  AG    772   2.4     .0
9.9
 D. NE           *     5   150     5   450 *  AG    772   2.9     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    455   2.9     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    440   3.0     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG    489   2.4     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG    489   2.9     .0
15.0
 I. WF           *   450     2   150     2 *  AG     77   2.9     .0
10.5
 J. WA           *   150     2     0     2 *  AG     22   4.5     .0
9.9
 K. WD           *     0     2  -150     2 *  AG     34   4.5     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG     34   2.9     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG     14   2.9     .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG      9   4.5     .0
9.9
 O. ED           *     0    -2   150    -2 *  AG    120   4.5     .0
9.9
 P. EE           *   150    -2   450    -2 *  AG    120   2.9     .0
10.5
 Q. NL           *     0     0     2  -150 *  AG     12   3.0     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     15   3.0     .0
9.9
 S. WL           *     0     0   150     2 *  AG     55   4.5     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG      5   4.5     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .6 *  .0   .4   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *    .6 *  .0   .3   .0   .0   .0   .0   .0   .1
 3. SW3      *  175. *    .5 *  .2   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *  175. *    .5 *  .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  186. *    .5 *  .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  186. *    .4 *  .1   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *  174. *    .4 *  .2   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *    .4 *  .1   .0   .0   .0   .0   .0   .1   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: CARMEL CREEK RD DEL MAR TRAIL 2015 PM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                        CONC/LINK
             *                          (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK       *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    377   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    374   3.0     .0   9.9
C. ND           *     5     0     5   150 *  AG    307   2.4     .0   9.9
D. NE           *     5   150     5   450 *  AG    307   2.9     .0  15.0
E. SF           *    -5   450    -5   150 *  AG    978   2.9     .0  15.0
F. SA           *    -5   150    -5     0 *  AG    963   3.1     .0   9.9
G. SD           *    -5     0    -5  -150 *  AG   1176   2.5     .0   9.9
H. SE           *    -5  -150    -5  -450 *  AG   1176   2.9     .0  15.0
I. WF           *   450     2   150     2 *  AG    234   2.9     .0  10.5
J. WA           *   150     2     0     2 *  AG     28   4.5     .0   9.9
K. WD           *     0     2  -150     2 *  AG      8   3.4     .0   9.9
L. WE           *  -150     2  -450     2 *  AG      8   2.9     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG     30   2.9     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG     20   4.5     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    128   3.4     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    128   2.9     .0  10.5
Q. NL           *     0     0     2  -150 *  AG      3   3.0     .0   9.9
R. SL           *     0     0    -2   150 *  AG     15   3.0     .0   9.9
S. WL           *     0     0   150     2 *  AG    206   4.5     .0   9.9
T. EL           *     0     0  -150    -2 *  AG     10   4.5     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 AM Ne
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *     .6 *   .0   .2   .0   .0   .0   .0   .0   .2
 2. SE3      *  355. *     .5 *   .0   .0   .1   .0   .2   .0   .0   .0
 3. SW3      *    5. *     .6 *   .0   .0   .0   .0   .0   .4   .0   .0
 4. NW3      *  175. *     .6 *   .0   .0   .0   .0   .0   .0   .4   .1
 5. NE7      *  186. *     .5 *   .0   .1   .0   .0   .0   .0   .0   .2
 6. SE7      *  354. *     .4 *   .0   .0   .0   .0   .1   .0   .0   .0
 7. SW7      *   84. *     .4 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  175. *     .5 *   .0   .0   .0   .0   .0   .0   .2   .1
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 AM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                         CONC/LINK
           *                           (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
-----------*-----------------------------------------------------------
1. NE3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
4. NW3     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
8. NW7     *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 PM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    892   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    880   3.1     .0   9.9
C. ND           *     5     0     5   150 *  AG    792   2.4     .0   9.9
D. NE           *     5   150     5   450 *  AG    792   2.9     .0  15.0
E. SF           *    -5   450    -5   150 *  AG    464   2.9     .0  15.0
F. SA           *    -5   150    -5     0 *  AG    449   3.0     .0   9.9
G. SD           *    -5     0    -5  -150 *  AG    500   2.4     .0   9.9
H. SE           *    -5  -150    -5  -450 *  AG    500   2.9     .0  15.0
I. WF           *   450     2   150     2 *  AG     79   2.9     .0  10.5
J. WA           *   150     2     0     2 *  AG     22   4.5     .0   9.9
K. WD           *     0     2  -150     2 *  AG     34   4.5     .0   9.9
L. WE           *  -150     2  -450     2 *  AG     34   2.9     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG     14   2.9     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG      9   4.5     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    123   4.5     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    123   2.9     .0  10.5
Q. NL           *     0     0     2  -150 *  AG     12   3.0     .0   9.9
R. SL           *     0     0    -2   150 *  AG     15   3.0     .0   9.9
S. WL           *     0     0   150     2 *  AG     57   4.5     .0   9.9
T. EL           *     0     0  -150    -2 *  AG      5   4.5     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 PM Ne
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*----------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *     .7 *   .0   .4   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *     .6 *   .0   .4   .0   .0   .0   .0   .0   .1
 3. SW3      *  175. *     .5 *   .2   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *  175. *     .5 *   .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  186. *     .5 *   .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  186. *     .4 *   .1   .2   .0   .0   .0   .0   .0   .1
 7. SW7      *  174. *     .4 *   .2   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  174. *     .4 *   .1   .0   .0   .0   .0   .0   .1   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 2 PM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                          CONC/LINK
            *                            (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 near
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S            Z0= 100. CM            ALT=     0. (M)
       BRG= WORST CASE           VD=   .0 CM/S
      CLAS=     7 (G)            VS=   .0 CM/S
      MIXH= 1000. M             AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *             EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    373   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    370   3.0     .0   9.9
C. ND           *     5     0     5   150 *  AG    303   2.4     .0   9.9
D. NE           *     5   150     5   450 *  AG    303   2.9     .0  15.0
E. SF           *    -5   450    -5   150 *  AG    974   2.9     .0  15.0
F. SA           *    -5   150    -5     0 *  AG    959   3.1     .0   9.9
G. SD           *    -5     0    -5  -150 *  AG   1172   2.5     .0   9.9
H. SE           *    -5  -150    -5  -450 *  AG   1172   2.9     .0  15.0
I. WF           *   450     2   150     2 *  AG    234   2.9     .0  10.5
J. WA           *   150     2     0     2 *  AG     28   4.5     .0   9.9
K. WD           *     0     2  -150     2 *  AG      8   3.4     .0   9.9
L. WE           *  -150     2  -450     2 *  AG      8   2.9     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG     30   2.9     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG     20   4.5     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    128   3.4     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    128   2.9     .0  10.5
Q. NL           *     0     0     2  -150 *  AG      3   3.0     .0   9.9
R. SL           *     0     0    -2   150 *  AG     15   3.0     .0   9.9
S. WL           *     0     0   150     2 *  AG    206   4.5     .0   9.9
T. EL           *     0     0  -150    -2 *  AG     10   4.5     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 near
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *      12      8   1.8
 2. SE3      *      12     -8   1.8
 3. SW3      *     -12     -8   1.8
 4. NW3      *     -12      8   1.8
 5. NE7      *      16     11   1.8
 6. SE7      *      16    -11   1.8
 7. SW7      *     -16    -11   1.8
 8. NW7      *     -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *     .6 *   .0   .2   .0   .0   .0   .0   .0   .2
 2. SE3      *  355. *     .5 *   .0   .0   .1   .0   .2   .0   .0   .0
 3. SW3      *    5. *     .6 *   .0   .0   .0   .0   .0   .4   .0   .0
 4. NW3      *  175. *     .6 *   .0   .0   .0   .0   .0   .0   .4   .1
 5. NE7      *  186. *     .5 *   .0   .1   .0   .0   .0   .0   .0   .2
 6. SE7      *  354. *     .4 *   .0   .0   .0   .0   .1   .0   .0   .0
 7. SW7      *   84. *     .4 *   .0   .0   .0   .0   .0   .0   .1   .0
 8. NW7      *  175. *     .5 *   .0   .0   .0   .0   .0   .0   .2   .1
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 near
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

           *                         CONC/LINK
           *                           (PPM)
 RECEPTOR  *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*-----------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   1

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 PM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


  I.  SITE VARIABLES

         U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
       BRG= WORST CASE            VD=   .0 CM/S
      CLAS=     7 (G)             VS=   .0 CM/S
      MIXH= 1000. M              AMB=   .0 PPM
     SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


 II.  LINK VARIABLES

      LINK      *  LINK COORDINATES (M)   *              EF     H     W
   DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
----------------*-------------------------*------------------------------
A. NF           *     5  -450     5  -150 *  AG    879   2.9     .0  15.0
B. NA           *     5  -150     5     0 *  AG    867   3.1     .0   9.9
C. ND           *     5     0     5   150 *  AG    779   2.4     .0   9.9
D. NE           *     5   150     5   450 *  AG    779   2.9     .0  15.0
E. SF           *    -5   450    -5   150 *  AG    452   2.9     .0  15.0
F. SA           *    -5   150    -5     0 *  AG    437   3.0     .0   9.9
G. SD           *    -5     0    -5  -150 *  AG    488   2.4     .0   9.9
H. SE           *    -5  -150    -5  -450 *  AG    488   2.9     .0  15.0
I. WF           *   450     2   150     2 *  AG     79   2.9     .0  10.5
J. WA           *   150     2     0     2 *  AG     22   4.5     .0   9.9
K. WD           *     0     2  -150     2 *  AG     34   4.5     .0   9.9
L. WE           *  -150     2  -450     2 *  AG     34   2.9     .0  10.5
M. EF           *  -450    -2  -150    -2 *  AG     14   2.9     .0  10.5
N. EA           *  -150    -2     0    -2 *  AG      9   4.5     .0   9.9
O. ED           *     0    -2   150    -2 *  AG    123   4.5     .0   9.9
P. EE           *   150    -2   450    -2 *  AG    123   2.9     .0  10.5
Q. NL           *     0     0     2  -150 *  AG     12   3.0     .0   9.9
R. SL           *     0     0    -2   150 *  AG     15   3.0     .0   9.9
S. WL           *     0     0   150     2 *  AG     57   4.5     .0   9.9
T. EL           *     0     0  -150    -2 *  AG      5   4.5     .0   9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 PM Ne
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *    A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .6 *   .0   .4   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *    .6 *   .0   .3   .0   .0   .0   .0   .0   .1
 3. SW3      *  175. *    .5 *   .2   .0   .0   .0   .0   .0   .2   .0
 4. NW3      *  175. *    .5 *   .1   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  186. *    .5 *   .0   .2   .0   .0   .0   .0   .0   .0
 6. SE7      *  186. *    .4 *   .1   .2   .0   .0   .0   .0   .0   .0
 7. SW7      *  174. *    .4 *   .2   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *    .4 *   .1   .0   .0   .0   .0   .0   .1   .0
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   3

              JOB: CARMEL CREEK RD DEL MAR TRAIL Ph 1 PM Ne
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

            *                        CONC/LINK
            *                          (PPM)
 RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
------------*------------------------------------------------------------
1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

        U=    .5 M/S            Z0= 100. CM            ALT=     0. (M)
      BRG= WORST CASE           VD=   .0 CM/S
     CLAS=     7 (G)            VS=   .0 CM/S
     MIXH= 1000. M             AMB=   .0 PPM
    SIGTH=    5. DEGREES      TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

     LINK       *  LINK COORDINATES (M)   *              EF     H     W
  DESCRIPTION   *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ---------------*-------------------------*-----------------------------
-
 A. NF          *     5  -450     5  -150 *  AG    333   1.2     .0
15.0
 B. NA          *     5  -150     5     0 *  AG    330   1.5     .0
9.9
 C. ND          *     5     0     5   150 *  AG    267   1.2     .0
9.9
 D. NE          *     5   150     5   450 *  AG    267   1.2     .0
15.0
 E. SF          *    -5   450    -5   150 *  AG    924   1.2     .0
15.0
 F. SA          *    -5   150    -5     0 *  AG    909   1.5     .0
9.9
 G. SD          *    -5     0    -5  -150 *  AG   1112   1.2     .0
9.9
 H. SE          *    -5  -150    -5  -450 *  AG   1112   1.2     .0
15.0
 I. WF          *   450     2   150     2 *  AG    223   1.2     .0
10.5
 J. WA          *   150     2     0     2 *  AG     27   2.0     .0
9.9
 K. WD          *     0     2  -150     2 *  AG      8   1.6     .0
9.9
 L. WE          *  -150     2  -450     2 *  AG      8   1.2     .0
10.5
```

```
 M. EF             *  -450    -2  -150    -2 *  AG     30   1.2     .0
10.5
 N. EA             *  -150    -2     0    -2 *  AG     20   2.0     .0
9.9
 O. ED             *     0    -2   150    -2 *  AG    123   1.6     .0
9.9
 P. EE             *   150    -2   450    -2 *  AG    123   1.2     .0
10.5
 Q. NL             *     0     0     2  -150 *  AG      3   1.5     .0
9.9
 R. SL             *     0     0    -2   150 *  AG     15   1.5     .0
9.9
 S. WL             *     0     0   150     2 *  AG    196   2.0     .0
9.9
 T. EL             *     0     0  -150    -2 *  AG     10   2.0     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *     .2 *  .0   .0   .0   .0   .0   .0   .0   .0
 2. SE3      *  354. *     .2 *  .0   .0   .0   .0   .0   .0   .0   .0
 3. SW3      *    5. *     .3 *  .0   .0   .0   .0   .0   .2   .0   .0
 4. NW3      *  175. *     .3 *  .0   .0   .0   .0   .0   .0   .2   .0
 5. NE7      *  186. *     .2 *  .0   .0   .0   .0   .0   .0   .0   .0
 6. SE7      *  353. *     .2 *  .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *   84. *     .2 *  .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *     .2 *  .0   .0   .0   .0   .0   .0   .1   .0
```

```
                 CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                          JUNE 1989 VERSION
                          PAGE   3

                     JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM NP
                     RUN: Hour 1           (WORST CASE ANGLE)
               POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *               EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    828   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    816   1.5     .0
9.9
 C. ND           *     5     0     5   150 *  AG    733   1.2     .0
9.9
 D. NE           *     5   150     5   450 *  AG    733   1.2     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    406   1.2     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    391   1.5     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG    439   1.2     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG    439   1.2     .0
15.0
 I. WF           *   450     2   150     2 *  AG     76   1.2     .0
10.5
 J. WA           *   150     2     0     2 *  AG     22   2.1     .0
9.9
 K. WD           *     0     2  -150     2 *  AG     34   2.1     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG     34   1.2     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG     14   1.2     .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG      9   2.1     .0
9.9
 O. ED           *     0    -2   150    -2 *  AG    118   2.1     .0
9.9
 P. EE           *   150    -2   450    -2 *  AG    118   1.2     .0
10.5
 Q. NL           *     0     0     2  -150 *  AG     12   1.5     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     15   1.5     .0
9.9
 S. WL           *     0     0   150     2 *  AG     54   2.1     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG      5   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM NP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                   (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *     .3 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *     .3 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *  174. *     .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  175. *     .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  186. *     .2 *   .0   .1   .0   .0   .0   .0   .0   .0
 6. SE7      *  354. *     .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *  174. *     .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *     .2 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
             CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                      JUNE 1989 VERSION
                      PAGE   3

                 JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM NP
                 RUN: Hour 1          (WORST CASE ANGLE)
           POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-------------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE           VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2   * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*------------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    367   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    364   1.5     .0
9.9
 C. ND           *     5     0     5   150 *  AG    301   1.2     .0
9.9
 D. NE           *     5   150     5   450 *  AG    301   1.2     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    939   1.2     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    924   1.5     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG   1127   1.2     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG   1127   1.2     .0
15.0
 I. WF           *   450     2   150     2 *  AG    223   1.2     .0
10.5
 J. WA           *   150     2     0     2 *  AG     27   2.1     .0
9.9
 K. WD           *     0     2  -150     2 *  AG      8   1.6     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG      8   1.2     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG     30   1.2     .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG     20   2.1     .0
9.9
 O. ED           *     0    -2   150    -2 *  AG    123   1.6     .0
9.9
 P. EE           *   150    -2   450    -2 *  AG    123   1.2     .0
10.5
 Q. NL           *     0     0     2  -150 *  AG      3   1.5     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     15   1.5     .0
9.9
 S. WL           *     0     0   150     2 *  AG    196   2.1     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG     10   2.1     .0
9.9
```

```
          CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                   JUNE 1989 VERSION
                   PAGE   2

              JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM WP
              RUN: Hour 1           (WORST CASE ANGLE)
        POLLUTANT: Carbon Monoxide


III.  RECEPTOR LOCATIONS

            *    COORDINATES (M)
  RECEPTOR  *    X      Y      Z
------------*---------------------
1. NE3      *     12      8   1.8
2. SE3      *     12     -8   1.8
3. SW3      *    -12     -8   1.8
4. NW3      *    -12      8   1.8
5. NE7      *     16     11   1.8
6. SE7      *     16    -11   1.8
7. SW7      *    -16    -11   1.8
8. NW7      *    -16     11   1.8


 IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

            *       * PRED  *               CONC/LINK
            *  BRG  * CONC  *                 (PPM)
 RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*--------------------------------------------
1. NE3      *  185. *    .3 *   .0   .0   .0   .0   .0   .0   .0   .0
2. SE3      *  354. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
3. SW3      *    5. *    .3 *   .0   .0   .0   .0   .0   .2   .0   .0
4. NW3      *  175. *    .3 *   .0   .0   .0   .0   .0   .0   .2   .0
5. NE7      *  186. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
6. SE7      *  353. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
7. SW7      *   84. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
8. NW7      *  174. *    .2 *   .0   .0   .0   .0   .0   .0   .1   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 AM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   1

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


   I.  SITE VARIABLES

          U=    .5 M/S             Z0= 100. CM             ALT=     0. (M)
        BRG= WORST CASE            VD=   .0 CM/S
       CLAS=     7 (G)             VS=   .0 CM/S
       MIXH= 1000. M              AMB=   .0 PPM
      SIGTH=    5. DEGREES       TEMP= 15.6 DEGREE (C)


  II.  LINK VARIABLES

       LINK      *  LINK COORDINATES (M)   *              EF     H     W
    DESCRIPTION  *   X1    Y1    X2    Y2  * TYPE  VPH  (G/MI)  (M)   (M)
 ----------------*-------------------------*-----------------------------
-
 A. NF           *     5  -450     5  -150 *  AG    864   1.2     .0
15.0
 B. NA           *     5  -150     5     0 *  AG    852   1.5     .0
9.9
 C. ND           *     5     0     5   150 *  AG    769   1.2     .0
9.9
 D. NE           *     5   150     5   450 *  AG    769   1.2     .0
15.0
 E. SF           *    -5   450    -5   150 *  AG    456   1.2     .0
15.0
 F. SA           *    -5   150    -5     0 *  AG    441   1.5     .0
9.9
 G. SD           *    -5     0    -5  -150 *  AG    489   1.2     .0
9.9
 H. SE           *    -5  -150    -5  -450 *  AG    489   1.2     .0
15.0
 I. WF           *   450     2   150     2 *  AG     76   1.2     .0
10.5
 J. WA           *   150     2     0     2 *  AG     22   2.1     .0
9.9
 K. WD           *     0     2  -150     2 *  AG     34   2.1     .0
9.9
 L. WE           *  -150     2  -450     2 *  AG     34   1.2     .0
10.5
```

```
 M. EF           *  -450    -2  -150    -2 *  AG     14   1.2     .0
10.5
 N. EA           *  -150    -2     0    -2 *  AG      9   2.1     .0
9.9
 O. ED           *     0    -2   150    -2 *  AG    118   2.1     .0
9.9
 P. EE           *   150    -2   450    -2 *  AG    118   1.2     .0
10.5
 Q. NL           *     0     0     2  -150 *  AG     12   1.5     .0
9.9
 R. SL           *     0     0    -2   150 *  AG     15   1.5     .0
9.9
 S. WL           *     0     0   150     2 *  AG     54   2.1     .0
9.9
 T. EL           *     0     0  -150    -2 *  AG      5   2.1     .0
9.9
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   2

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM WP
               RUN: Hour 1           (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


 III.  RECEPTOR LOCATIONS

             *    COORDINATES (M)
   RECEPTOR  *    X      Y      Z
 ------------*---------------------
 1. NE3      *     12      8   1.8
 2. SE3      *     12     -8   1.8
 3. SW3      *    -12     -8   1.8
 4. NW3      *    -12      8   1.8
 5. NE7      *     16     11   1.8
 6. SE7      *     16    -11   1.8
 7. SW7      *    -16    -11   1.8
 8. NW7      *    -16     11   1.8


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE )

             *       * PRED  *                CONC/LINK
             *  BRG  * CONC  *                  (PPM)
  RECEPTOR   * (DEG) * (PPM) *   A    B    C    D    E    F    G    H
-------------*-------*-------*----------------------------------------
 1. NE3      *  185. *    .3 *   .0   .2   .0   .0   .0   .0   .0   .0
 2. SE3      *  185. *    .3 *   .0   .2   .0   .0   .0   .0   .0   .0
 3. SW3      *  174. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 4. NW3      *  175. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 5. NE7      *  186. *    .2 *   .0   .1   .0   .0   .0   .0   .0   .0
 6. SE7      *  354. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 7. SW7      *  174. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
 8. NW7      *  174. *    .2 *   .0   .0   .0   .0   .0   .0   .0   .0
```

```
           CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
                    JUNE 1989 VERSION
                    PAGE   3

               JOB: CARMEL CREEK RD DEL MAR TRAIL 2030 PM WP
               RUN: Hour 1          (WORST CASE ANGLE)
         POLLUTANT: Carbon Monoxide


  IV.  MODEL RESULTS (WORST CASE WIND ANGLE)     (CONT.)

             *                         CONC/LINK
             *                           (PPM)
  RECEPTOR   *   I    J    K    L    M    N    O    P    Q    R    S    T
 ------------*-----------------------------------------------------------
-
 1. NE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 2. SE3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 3. SW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 4. NW3      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 5. NE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 6. SE7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 7. SW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
 8. NW7      *   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0   .0
.0
```

ONE PASEO

Energy Usage

Electricity Usage

		Electricity Usage Rate [a]	Total Electricity Usage		Emission Factors (lbs/MWh) [b]			
					CO_2	CH_4	N_2O	CO_2e
Land Use	**1,000 Sqft**	**(kWh\sq.ft\yr)**	**(KWh\year)**	**(MWh\day)**	**804.54**	**0.0067**	**0.0037**	**21/310[c]**
					Emissions from Electricity (lbs/day)			
Project								
Office	536.0	12.95	6,941,200	19.017	15299.926	0.127	0.070	15324.293
Retail	220.0	13.55	2,981,000	8.167	6570.777	0.055	0.030	6581.232
Hotel/Motel	150.0	9.95	1,492,500	4.089	3289.797	0.027	0.015	3295.014
Restaurant	0.0	47.45	0	0.000	0.000	0.000	0.000	0.000
Food Store	0.0	53.3	0	0.000	0.000	0.000	0.000	0.000
Warehouse	0.0	4.35	0	0.000	0.000	0.000	0.000	0.000
College/University	0.0	11.55	0	0.000	0.000	0.000	0.000	0.000
High School	0.0	10.5	0	0.000	0.000	0.000	0.000	0.000
Elementary School	0.0	5.9	0	0.000	0.000	0.000	0.000	0.000
Hospital	0.0	21.7	0	0.000	0.000	0.000	0.000	0.000
Miscellaneous	40.0	10.5	420,000	1.151	925.772	0.008	0.004	927.180
Residential (DU)	608.0	5,627	3,420,912	9.372	7540.440	0.063	0.035	7552.613
Total Project			**15,255,612**	**41.796**	**33,626.71**	**0.28**	**0.15**	**33,680.33**
Net Emissions From Electricity Usage (lbs/day)					**33626.71**	**0.28**	**0.15**	**33680.33**
Net Emissions From Electricity Usage (MT/yr)					5567.28592	0.046357	0.025496	5567.35777

Natural Gas Usage

		Natural Gas Usage Rate [d]	Total Natural Gas Usage		Emission Factors (kg/MMBtu) [e]			
					CO_2	CH_4	N_2O	CO_2e
Land Use	**1,000 Sqft**	**(cu.ft\sq.ft\mo)**	**(cu.ft\mo)**	**(Btu/day)[f]**	**53.05**	**0.0059**	**0.0001**	**21/310[c]**
					Emissions from Natural Gas (lbs/day)			
Project								
Office	536.0	2.0	**1,072,000**	**36,662,400**	4287.854	0.477	0.008	4300.374
Retail	220.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000
Hotel/Motel	150.0	4.8	**720,000**	**24,624,000**	2879.902	0.320	0.005	2888.311
Restaurant	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000
Food Store	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000
Warehouse	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000
College/University	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000
High School	0.0	2.9	**0**	**0**	0.000	0.000	0.000	0.000
Elementary School	0.0	2.0	**0**	**0**	0.000	0.000	0.000	0.000
Hospital	0.0	4.8	**0**	**0**	0.000	0.000	0.000	0.000
Miscellaneous	40.0	2.9	**116,000**	**3,967,200**	463.984	0.052	0.001	465.339
Residential (Single Family DU)	0.0	6,665	**0**	**0**	0.000	0.000	0.000	0.000
Residential (Multi-Family DU)	608.0	4,012	**2,438,992**	**83,413,526**	9755.637	1.085	0.018	9784.122
Total Project			**4,346,992**	**148,667,126**	**17,387.38**	**1.93**	**0.03**	**17,438.15**
Net Emissions From Natural Gas Usage					**17387.38**	**1.93**	**0.03**	**17438.15**
Net Emissions From Natural Gas Usage (MT/yr)					2878.67874	0.320155	0.005426	2879.00432

Summary of Stationary Emissions

	CO_2	CH_4	N_2O	CO_2e
Total Existing Emissions (lbs/day)	0.00	0.00	0.00	0.00
Total Project Emissions (lbs/day)	51014.09	2.21	0.19	51118.48
Total Net Emissions (lbs/day)	**51014.09**	**2.21**	**0.19**	**51118.48**

[a] Electricity Usage Rates from Table A9-11-A, CEQA Air Quality Handbook, SCAQMD, 1993.

[b] Emission Factors from Table C.1 and Table C.2, General Reporting Protocol, California Climate Action Registry, January 2009.

[c] Global Warming Potential is 21 for CH_4 and 310 for N_2O, General Reporting Protocol, California Climate Action Registry, January 2009.

[d] Natural Gas Usage Rates from Table A9-12-A, CEQA Air Quality Handbook, SCAQMD, 1993.

[e] Emission Factors from Table C.5 and Table C.6, General Reporting Protocol, California Climate Action Registry, January 2009.

[f] 1 Cubic Foot of natural gas = 1,026 Btu. Energy Information Administration. Available http://www.eia.doe.gov/basics/conversion_basics.html

Mobile Sources

	Percent Type	VMT by Type	Emission Factors [a]		CH_4	N_2O	CO_2e
Vehicle Type	100	0	CH_4	N_2O			21/310[b]
Project							
Light Auto	48.5	74662.65085	0.05	0.04	8.230	6.584	2213.873
Light Truck < 3750 lbs	10.8	16625.90988	0.06	0.06	2.199	2.199	727.933
Light Truck 3751-5750 lbs	21.9	33713.65059	0.06	0.06	4.459	4.459	1476.087
Med Truck 5751-8500 lbs	9.7	14932.53017	0.12	0.20	3.950	6.584	2124.001
Lite-Heavy Truck 8501-10,000 lbs	1.7	2617.04137	0.12	0.20	0.692	1.154	372.248
Lite-Heavy Truck 10,001-14,000 lbs	0.7	1077.60527	0.12	0.20	0.285	0.475	153.278
Med-Heavy Truck 14,001-33,000 lbs	1.0	1539.4361	0.06	0.05	0.204	0.170	56.880
Heavy-Heavy Truck 33,001-60,000 lbs	0.9	1385.49249	0.06	0.05	0.183	0.153	51.192
Other Bus	0.1	153.94361	0.06	0.05	0.020	0.017	5.688
Urban Bus	0.1	153.94361	0.06	0.05	0.020	0.017	5.688
Motorcycle	3.5	5388.02635	0.09	0.01	1.069	0.119	59.273
School Bus	0.1	153.94361	0.06	0.05	0.020	0.017	5.688
Motor Home	1.0	1539.4361	0.06	0.06	0.204	0.204	67.401
Total Project			**0.98**	**1.08**	**21.54**	**22.15**	**7,319.23**
Net Emissions From Mobile Sources					**21.54**	**22.15**	**7319.23**
				CO2 (from GHG Reg)			
Net Emissions From Mobile Sources (MT/yr)				12604.16048	3.565724705	3.667425961	1211.782267

[a] Emission factors from Table C.4, General Reporting Protocol, California Climate Action Registry, January 2009.

[b] Global Warming Potential is 21 for CH_4 and 310 for N_2O, General Reporting Protocol, California Climate Action Registry, January 2009.

ONE PASEO

Water Conyenance Analysis

			Water						Emission Factors (lbs/MWh) [b]			
			Usage Rate [a]		Total Water Usage	Total Water Usage	Electrical Usage Rate	Total Electrical Usage	CO_2	CH_4	N_2O	CO_2e
Land Use	**Area/Units**		**(gallons\acre\day)**		**(gallons\day)**	**(gallons\year)**	**(KWh\million gallons)**	**MWh per year**	**804.54**	**0.0067**	**0.0037**	**21/310[c]**
Retail/Commercial	6.20	ac	5,000	gpd/n-acre	27,422	10,009,030	12,700	127.11	102,269	0.852	0.470	102,432
Hotel	2.30	ac	6,555	gpd/n-acre	14,250	5,201,250	12,700	66.06	53,145	0.443	0.244	53,230
Office	12.30	ac	5,730	gpd/n-acre	46,337	16,913,005	12,700	214.80	172,811	1.439	0.795	173,088
Residential	608	du	150	gpd/person	120,129	43,847,085	12,700	556.86	448,015	3.731	2.060	448,731
					208,138	**75,970,370**						
							Net Project Emissions in metric tons per year		352.0966	0.0029	0.0016	352.6601

[a] Water Usage Rates from City of San Diego Public Utilities Department Water Supply Assessment *San Diego Corporate Center On-Site Water Study*, 2011.

[b] Emission Factors from Table C.1 and Table C.2, General Reporting Protocol, California Climate Action Registry, January 2009.

[c] Global Warming Potential is 21 for CH_4 and 310 for N_2O, General Reporting Protocol, California Climate Action Registry, January 2009.

ONE PASEO

Solid Waste Generation Analysis

Surface Landfill Gas	**Number of sq ft**	**Waste Generation Rate** [a]	**CO2 eq** [b]
Existing Condition	0	0	0
Proposed Project	1577900	17041.32	24.36909
Net Project Emisisons		17041.32	24.36909

Collection Trucks Emissions

Existing Condition		**Emissions from Mobile Sources (lbs/day)**			
Vehicle Type		**CO2**	**CH4**	**N2O**	**CO2eq**
Total all Vehicles		0	0	0	0
Lite-Heavy Truck 8501-10,000 lbs	0	0	0	0	0
Lite-Heavy Truck 10,001-14,000 lbs	0	0	0	0	0
Med-Heavy Truck 14,001-33,000 lbs	0	0	0	0	0
Heavy-Heavy Truck 33,001-60,000 lbs	0	0	0	0	0

		Emissions from Mobile Sources (lbs/day)				
Proposed Project		**CO2**	**CH4**	**N2O**	**CO2eq**	
Total all Vehicles		64911.75	--	--	--	
Lite-Heavy Truck 8501-10,000 lbs	1.7	1,103.50	14.54	357.71	1,475.75	
Lite-Heavy Truck 10,001-14,000 lbs	0.7	454.38	5.99	147.29	607.66	
Med-Heavy Truck 14,001-33,000 lbs	1	649.12	4.28	52.60	706.00	
		2,207.00	24.80	557.60	2,789.41	(lbs/day)
		52.06	0.59	13.15	65.79	(MT/yr)

Net Project Emissions in metric tons per year		
	Collection Trucks	65.79
	Landfill Gas	24.37
	Total	90.16

[a] Municipal solid waste factor of 0.0013 tons per sq ft per year from California Recycle 2010.

[b] It was assumed that 75% of the existing landfill gas is collected through landfill gas collection system and piped to external controls. The remaining uncollected landfill gas is emitted at the landfill surface. CO2 equivalent emission factor was obtained from the EPA Greenhouse Gas Emissions from Management of Selected Materials in Municipal Solid Waste 1998.

Appendix G.1

UPDATES TO AIR QUALITY AND GREENHOUSE GAS TECHNICAL REPORT

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

May 5, 2014 KIL-03

Martha Blake
Development Services Department
City of San Diego
1223 First Avenue
San Diego, CA 92101

Subject: Updates to Air Quality and Greenhouse Gas Analysis in the Draft EIR for the One Paseo Project

Dear Ms. Blake:

This memorandum has been prepared to serve as the basis for updating Section 5.5, *Air Quality*, and Section 5.7, *Greenhouse Gas Emissions*, in the Final EIR. This memorandum also includes a qualitative discussion of the potential air quality and greenhouse gas (GHG) impacts associated with the Revised Project proposed by the applicant and evaluated as the Reduced Main Street Alternative in the Recirculated Alternatives section of the Final EIR to provide further support for the conclusion that the air quality and GHG impacts of the Revised Project would be less than the Originally Proposed Project, and would also be less than significant. This analysis is included as Attachment A.

In general, the modifications which have been made involve updating the state and federal regulations, standards, and analysis methods governing criteria pollutants and GHG emissions. Due to the constantly evolving nature of GHG analysis, these regulations and standards change over relatively short periods of time, and some changes have occurred between May 2010, when the air quality and GHG technical studies were initiated, and preparation of the Final EIR. Specifically, updated information exists regarding the State Implementation Plan (SIP), toxic air contaminants (TACs) and the federal standards for certain criteria pollutants.

The impact calculations in Section 5.5 and 5.7 were updated, as appropriate, to reflect the updated regulations and standards. As the following discussion indicates, the changes in policies and regulations, and the associated changes in project emissions do not change the basic results or impact conclusions of the air quality and GHG analyses in the original Draft EIR: impacts remain less than significant.

AIR QUALITY

Regulations and Standards

The following changes have occurred with respect to air quality regulations and standards since the original air quality analysis was completed for the Draft EIR.

State Implementation Plan

The original air quality study based the discussion of the State Implementation Plan (SIP) on the version that was approved in 1994. In June 2007, the San Diego Air Pollution Control District (SDAPCD) submitted a proposed revised SIP for approval by the U.S. EPA (EPA). However, EPA did not take action to approve that 2007 SIP submittal because, also in June 2007, a court ruled that EPA must reconsider its implementation methodology and criteria for foregoing nonattainment classifications in affected regions, including San Diego County. In a rulemaking responding to the court's ruling, EPA classified San Diego County as a moderate ozone nonattainment area for the 1997 ozone standard, and this determination became effective on June 13, 2012. According to the EPA rulemaking, the SDAPCD must submit an SIP addressing moderate ozone nonattainment area control requirements by June 2013.

However, San Diego County attained the ozone NAAQS in 2011, and the SDAPCD has requested the redesignation of San Diego County to attainment of the 1997 ozone NAAQS.

On December 6, 2012, the California Air Resources Board (CARB) approved the *Redesignation Request and Maintenance Plan for the 1997 National Ozone Standard for San Diego County* for submittal to the EPA as an SIP revision, and on March 25, 2013, the EPA approved the redesignation to the 1997 eight-hour ozone attainment/maintenance plan. The SDAPCD has also developed the air basin's input to the SIP, which is required under Federal Clean Air Act for areas that are in nonattainment of air quality standards. The SIP includes the SDAPCD's plans and control measures for attaining the O_3 NAAQS and is also updated on a triennial basis.

Because this request for redesignation was submitted prior to the June 2013 SIP submittal due date, these moderate nonattainment area SIP requirements will not apply after EPA has approved and redesignated San Diego County to attainment for the 1997 ozone NAAQS. The Maintenance Plan, included in this SIP, fulfilled the SIP submittal requirement (SDAPCD 2012).

On May 21, 2012, the EPA designated the San Diego air basin as a non-attainment area for the new 2008 eight-hour ozone standard, and classified it as a marginal area with an attainment date of December 31, 2015. This designation became effective on July 20, 2012.

Air Quality Standards

The National Ambient Air Quality Standards have been updated since the air quality analysis was conducted for the project. Specifically, EPA established a new one-hour standard for NO_2 at a level of 100 ppb (188.68 $\mu g/m^3$), in addition to the existing annual secondary standard

(100 $\mu g/m^3$). On June 2, 2010, the EPA revised the standard for SO_2. A new one-hour SO_2 standard of 75 ppb was established, and the existing 24-hour and annual primary standards were revoked. All other NAAQS remained the same.

With the exception of a new standard for sulfates, the standards for California are unchanged from those presented in the original air quality study. A 24-hour standard of 25 µg/m3 was established for sulfates SOx.

To reflect the changes in the State and National Ambient Air Quality Standards discussed above, Table 5.5-1 of the Final EIR has been adjusted. The updated Table 5.5-1 is provided below.

Table 5.5-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	**Averaging Time**	**California Standards**		**Federal Standards**		
		Concentration	**Method[4]**	**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 (PM^{10})	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 ($PM^{2.5}$)	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	12.0 $\mu g/m^3$	15 $\mu g/m^3$	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/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 $\mu g/m^3$)	Gas Phase Chemiluminescence	0.053 ppm (100 $\mu g/m^3$)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (470 $\mu g/m^3$)		100 ppb (188 $\mu g/m^3$)	None	

Table 5.5-1 (cont.)
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards		Federal Standards		
		Concentration	Method[4]	Primary	Secondary	Method
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 $\mu g/m^3$)		75 ppb (196 $\mu g/m^3$)	-	-
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 kilometers – visibility of 10 miles or more (0.7 kilometers – 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 (SO_X)	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			

ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter; mg/m^3 = milligrams per cubic meter
Source: CARB June 4, 2013(http://www.arb.ca.gov/research/aaqs/aaqs2.pdf)

The new standards do not affect the conclusion of Section 5.1 of the Draft EIR that the proposed development would not exceed the state or federal standards for criteria pollutants.

Criteria Pollutant Impacts

One of the comments received on the Draft EIR expressed concern that the PM_{10} generation levels associated with the project were underestimated because the analysis assumed that no more than 1.5 acres of the site would be under active construction at any one time. In response to this concern, an analysis of the potential impacts of developing the entire property at one time

(Scenario 3) was conducted. By applying the assumption that no more than 25 percent of the site would be under active grading at any one time, the analysis of Scenario 3 was based on 5.75 acres (25 percent of 23 acres). As shown in the updated version of the Table 5.5-7 of the Final EIR below, the proposed development still would not exceed the City's PM_{10} standard under this more conservative construction area assumption. Table 5.5-6 was also updated to reflected additional PM_{10} analysis of Phase 2 which assumed a total grading area of 3 acres. As demonstrated by updated Tables 5.5-6 and 7, construction of the project would not create a significant impact related to PM_{10}, and need not be limited to a maximum of 1.5 acres of grading at any one time.

Table 5.5-6
CONSTRUCTION SCENARIO 2
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS PER YEAR
(lbs/day)

Source	ROG	NOx	CO	SOx	PM_{10}[1]	$PM_{2.5}$[1]
Year 1 Construction Totals						
Phases 1 and 2	8.58	76.21	41.54	0.09	54.55	13.89
Phase 3	--	--	--	--	--	--
Subtotal	**8.58**	**76.21**	**41.54**	**0.09**	**54.55**	**13.89**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 2 Construction Totals						
Phases 1 and 2	16.36	105.68	114.69	0.09	55.17	14.46
Phase 3	--	--	--	--	--	--
Subtotal	**16.36**	**105.68**	**114.69**	**0.09**	**55.17**	**14.46**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 3 Construction Totals						
Phases 1 and 2	116.16	35.02	83.62	0.08	2.87	2.41
Phase 3	--	--	--	--	--	--
Subtotal	**116.16**	**35.02**	**83.62**	**0.08**	**2.87**	**2.41**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Phases 1 and 2	6.10	23.95	67.38	0.08	1.85	1.48
Phase 3	--	--	--	--	--	--
Subtotal	**6.10**	**23.95**	**67.38**	**0.08**	**1.85**	**1.48**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 5 Construction Totals						
Phases 1 and 2	--	--	--	--	--	--
Phase 3	5.98	61.19	28.67	0.13	52.11	12.60
Subtotal	**5.98**	**61.19**	**28.67**	**0.13**	**23.25**	**6.57**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 6 Construction Totals						
Phases 1 and 2	--	--	--	--	--	--
Phase 3	7.38	60.71	44.39	0.13	52.47	12.92
Subtotal	**7.38**	**60.71**	**44.39**	**0.13**	**23.61**	**6.89**

Table 5-5-6 (cont.)
CONSTRUCTION SCENARIO 2
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS PER YEAR
(lbs/day)

Source	ROG	NOx	CO	SOx	PM$_{10}$[1]	PM$_{2.5}$[1]
Year 4 Construction Totals						
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 7 Construction Totals						
Phases 1 and 2	--	--	--	--	--	--
Phase 3	15.89	10.95	33.51	0.05	0.91	0.68
Sub-total	**15.89**	**10.95**	**33.51**	**0.05**	**0.91**	**0.68**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 8 Construction Totals						
Phases 1 and 2	--	--	--	--	--	--
Phase 3	8.38	10.03	31.59	0.05	0.84	0.62
Sub-total	**8.38**	**10.03**	**31.59**	**0.05**	**0.84**	**0.62**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Source: HELIX 2012b

[1] Assumes a maximum grading area at any one time of 3 acres.

Table 5.5-7
CONSTRUCTION SCENARIO 3
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS PER YEAR
(lbs/day)

Source	ROG	NOx	CO	SOx	PM$_{10}$[1]	PM$_{2.5}$[1]
Year 1 Construction Totals						
Phases 1, 2, and 3	12.01	105.92	57.56	0.12	52.56	14.44
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 2 Construction Totals						
Phases 1, 2, and 3	28.48	172.39	208.73	0.25	55.14	16.42
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 3 Construction Totals						
Phases 1, 2, and 3	33.52	44.76	120.08	0.13	2.86	2.24
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No
Year 4 Construction Totals						
Phases 1, 2, and 3	37.47	40.70	112.56	0.13	2.72	2.10
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	No	No	No	No	No	No

Source: HELIX 2012b

[1] Assumes a maximum grading area at any one time of 5.75 acres.

In order to refine previous estimates of the criteria pollutant emissions from construction and operation of the project, the URBEMIS model was re-run using specific mitigation options as project design features and the emission levels from the various development phases were refined. The refined emission projections are reflected in Tables 5.5-8 through 5.5-12 below. These tables confirm the proposed project would not produce emissions that would exceed the standards established by SDAPCD. Thus, the conclusion in the Draft EIR that the project would not result in significant air quality impacts remains unchanged.

Table 5.5-8
ESTIMATED PROJECT OPERATIONAL EMISSIONS – PHASE 1

Emission Source	**Maximum Daily Emissions (lbs/day[1])**					
	VOC	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Area Sources[2]	2.89	3.79	8.06	0	0.03	0.03
Vehicular Sources[2]	21.94	26.93	209.31	0.25	26.71	5.92
Total	24.83	30.63	217.37	0.25	26.74	5.95
Daily Threshold	137	250	550	250	100	55
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[2] Maximum pounds per day for summer or winter from URBEMIS model.
Source: HELIX 2012b

Table 5.5-9
ESTIMATED PROJECT OPERATIONAL EMISSIONS - PHASES 1 AND 2

Emission Source	**Maximum Daily Emissions (lbs/day[1])**					
	VOC	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Area Sources[2]	12.06	5.72	10.15	0	0.05	0.05
Vehicular Sources[2]	37.80	48.20	371.61	0.43	44.13	12.85
Total	49.86	53.92	381.76	0.43	44.18	12.90
Daily Threshold	137	250	550	250	100	55
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[2] Maximum pounds per day for summer or winter from URBEMIS model.
Source: HELIX 2012b

Table 5.5-10
ESTIMATED PROJECT OPERATIONAL EMISSIONS – PROJECT BUILDOUT

Emission Source	Maximum Daily Emissions (lbs/day[1])					
	VOC	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Area Sources[2]	36.60	11.52	14.02	0	0.17	0.17
Vehicular Sources[2]	49.97	54.51	462.16	0.72	73.93	14.67
Total	86.57	66.03	476.18	0.72	74.10	14.84
Daily Threshold	137	250	550	250	100	55
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[2] Maximum pounds per day for summer or winter from URBEMIS model.
Source: HELIX 2012b

Table 5.5-11
COMBINED PHASE 2 CONSTRUCTION AND PHASE 1 OPERATIONAL EMISSIONS (lbs/day[1])

	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Phase 2 Construction						
Mass Grading Dust	0.00	0.00	0.00	0.00	46.26	9.66
Mass Grading Off-Road Diesel	2.26	10.50	10.40	0	1.50	1.38
Mass Grading On-Road Diesel	3.23	45.07	15.37	0.01	2.28	1.91
Mass Grading Worker Trips	0.02	0.04	0.65	0	0.01	0.01
Building Off-Road Diesel	2.40	12.04	9.62	0	0.76	0.70
Building On-Road Diesel	0.26	3.09	2.68	0.01	0.15	0.12
Building Worker Trips	0.53	1.02	16.09	0.02	0.19	0.10
Architectural Coatings Off-Gas	21.25	0	0.00	0	0	0
Architectural Coatings Worker Trips	0.01	0.01	0.16	0	0	0
Asphalt Off-Gas	0.11	0	0	0	0	0
Asphalt Off-Road Diesel	2.20	13.65	9.82	0	1.11	1.02
Asphalt On-Road Diesel	0.01	0.21	0.07	0	0.01	0.01
Asphalt Worker Trips	0.05	0.09	1.47	0	0.02	0.01
Construction Subtotal	*32.33*	*85.72*	*66.33*	*0.04*	*52.50*	*12.95*
Area Sources[2]	2.89	3.79	8.06	0.00	0.03	0.03
Vehicular Emissions[2]	21.94	26.93	209.31	0.25	26.71	5.92
Operation Subtotal	*24.83*	*30.72*	*217.37*	*0.25*	*26.74*	*5.95*
Combined Total	**57.16**	**116.44**	**28.37**	**0.29**	**79.24**	**18.9**
Daily Threshold	137	250	550	250	100	55
Exceed Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[2] Maximum pounds per day for summer or winter from URBEMIS model.
Source: HELIX 2012b

Table 5.5-12
COMBINED PHASE 3 CONSTRUCTION AND PHASES 1 AND 2 OPERATIONAL EMISSIONS
(lbs/day[1])

	ROG	**NOx**	**CO**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Phase 3 Construction						
Mass Grading Dust	0.00	0.00	0.00	0.00	47.32	9.88
Off-Road Diesel	2.13	9.64	10.09	0	2.10	1.93
Mass Grading On-Road Diesel	3.83	51.51	17.97	0.13	3.12	2.62
Mass Grading Worker Trips	0.02	0.04	0.61	0	0.02	0.01
Building Off-Road Diesel	1.98	6.24	9.21	0	0.45	0.41
Building On-Road Diesel	0.40	4.36	4.15	0.02	0.23	0.17
Building Worker Trips	0.71	1.38	22.06	0.03	0.30	0.16
Architectural Coatings Off-Gas	1.15	0	0	0	0	0
Architectural Coatings Worker Trips	0.01	0.01	0.22	0	0	0
Asphalt Off-Gas	0.12	0	0	0	0	0
Asphalt Off-Road Diesel	1.66	6.11	7.79	0	0.61	0.56
Asphalt On-Road Diesel	0.01	0.18	0.06	0	0.01	0.01
Asphalt Worker Trips	0.04	0.07	1.12	0	0.02	0.01
Construction Subtotal	*12.06*	*79.54*	*73.28*	*0.18*	*55.14*	*16.42*
Phases 1 and 2 Operations						
Area Sources[2]	12.06	5.72	10.15	0	0.05	0.05
Vehicular Emissions[2]	37.80	48.20	371.61	0.43	44.13	12.85
Operation Subtotal	*49.86*	*53.92*	*181.76*	*0.43*	*44.18*	*12.90*
Combined Total	**62.02**	**163.46**	**255.04**	**0.61**	**99.32**	**29.32**
Daily Threshold	137	250	550	250	100	55
Exceeds Threshold?	*No*	*No*	*No*	*No*	*No*	*No*

[1] Fugitive dust measures were applied to control PM_{10} and $PM_{2.5}$ dust emissions in the URBEMIS model.
[2] Maximum pounds per day for summer or winter from URBEMIS model.
Source: HELIX 2012b

GREENHOUSE GAS EMISSIONS

Regulations and Standards

Since the GHG analysis for the Draft EIR was prepared, some changes have occurred with respect to the regulations and standards related to GHG controls. The substantive changes are described below.

<u>Senate Bill 1368</u>

The original analysis indicated that the California Energy Commission (CEC) was required to adopt a GHG emission standards by February 1, 2007. On November 14, 2011, the Natural Resources Defense Council (NRDC) and Sierra Club jointly filed a petition requesting the California Energy Commission (CEC) initiate a rulemaking proceeding to ensure the current practices of California publicly owned utilities (POUs) meet the requirements of Senate Bill 1368 and California's Emission Performance Standard. On January 12, 2012, the CEC adopted the Emission Performance Standard that established 1,100 pounds of CO_2 per megawatt-hour of electricity delivered as the threshold.

Executive Order S-03-05

Although the Executive Order has not changed since the Draft EIR was circulated for public review, the interpretation of the Executive Order in relationship to reducing GHG emissions by the year 2050 has been the subject of a recent court case related to the 2050 Regional Transportation Plan (RTP) prepared by the San Diego Association of Governments (SANDAG). On December 3, 2012, the San Diego County Superior Court issued a ruling in Cleveland National Forest v. San Diego Association of Governments, Case No. 2011-001001593, finding the RTP inadequate for failing to address the RTP's consistency with Executive Order's S-03-05's year 2050 emissions reduction goals. This case is currently pending on appeal. Even though the Executive Order is a goal and not a mandate, in light of the trial court's ruling the following discussion of the consistency of the proposed project with the goals of Executive Order S-03-05 is provided.

The proposed project is consistent with the achievement of long-term emissions reduction goals set forth in Executive Order S-3-05. Executive Order S-3-05 includes a goal of reducing GHG emissions to 80 percent below 1990 levels by 2050. According to current science, these levels are necessary to stabilize the climate. The Legislature did not include Executive Order S-3-05's 2050 goals in AB 32 and the CEQA Guidelines, and again declined to use these goals in adopting SB 375. The 2020 target is the core of AB 32, but the 2050 target remains an additional goal stated by the Executive Order.

Over time, additional GHG-reducing control measures are likely to be introduced and implemented by various governmental agencies. Some of these measures are likely to reduce the proposed project's GHG emissions. The proposed project will be developed in phases, and will be required to use the most current technologies and best practices available and feasible at the time of each phase of development. Moreover, as buildings or other components of the proposed project are updated or replaced over time, they will be subject to the then-existing requirements for GHG emissions reductions, including those set forth to ensure compliance with Executive Order S-3-05 or any applicable interim policy, and will use then-existing technologies and best practices to achieve applicable emissions reductions, which could include retrofitting buildings so that they are more energy efficient or even result in net-zero emissions; increased use of low-carbon biofuels or zero-emission vehicles; and/or procurement of electricity from renewable sources. Further, impacts from off-site transportation and on-site energy usage will be affected by broader policies related to increases in electric vehicle and mass transit usage as well as decreases in electricity demand and the amount of carbon associated with electricity generation.

While there is no specific plan for reaching the 2050 goals of Executive Order S-3-05, the proposed project will not impede the policies described the California Air Resources Board's Scoping Plan Update, or others, that will help achieve these goals. In fact, as described on page 3-11 of the Final EIR, the proposed project includes a number of sustainable features which would reduce GHG emissions.

In addition, the California Air Resources Board's Scoping Plan determined that implementing AB 32 in accordance with the Scoping Plan would put California on a path to meet the 2050 emissions goals of Executive Order S-3-05. California Air Resources Board, Scoping Plan, 117 (Dec. 2008) (available at www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm). The Scoping Plan stated, "Full implementation of the Scoping Plan will put California on a path toward [Executive Order S-3-05's goals]. Just as importantly, it will put into place many of the measures needed to keep us on that path." The Draft Update, released in February 2014, notes that a number of scientific studies conclude "the 2050 emissions target is achievable, mostly with technologies that are commercially available today[,]" and states that the benefits of existing policies put California on track to meet the goals of Executive Order S-3-05. California Air Resources Board, Proposed First Update to the Climate Change Scoping Plan: Building on the Framework, 36-37, 39 (Feb. 2014) (available at www.arb.ca.gov/cc/scopingplan/2013_update/draft_proposed_first_update.pdf). The Scoping Plan update states, "[I]f California realizes the expected benefits of existing policy goals . . . it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050. The Draft Scoping Plan Update also suggests setting a mid-term target to maintain and continue GHG emissions reductions beyond 2020. Because the proposed project would reduce emissions consistent with AB 32, and would continue to incorporate additional emissions reducing measures as may be required by future laws, regulations or policies, it would not impede the achievement of Executive Order S-3-05's 2050 goals or other interim goals that may be established.

According to the Discussion Draft of the Draft Scoping Plan Update ("Discussion Draft Update"), meeting California's 2050 GHG emissions reduction goals "will require ongoing changes in the way electricity is generated, transmitted, and consumed; the way vehicles, fuels, and systems move people and goods throughout California and its economy; the way we approach energy and water consumption, and waste in our homes and businesses; and the way we plan our communities, manage our natural resources and natural lands, and continue to grow our agricultural sector." CARB, Scoping Plan Discussion Draft Update, 74 (Oct. 2013) (available at www.arb.ca.gov/cc/scopingplan/document/updatedscopingplan2013.htm). Some of these measures will occur outside of the City's jurisdiction, at the state or regional level. Specific policies recommended in the Scoping Plan Discussion Draft Update and February 2014 Draft Scoping Plan Update include measures by CARB to improve vehicle emission fuel standards and efforts to put 1.5 million zero-emissions vehicles on the road by 2025 pursuant to Executive Order B-16-2012; measures to increase the use of renewable energy by public utilities; increasing energy efficiency in building stock; conserving agricultural lands, reducing the amount of electricity and natural gas used to convey, treat, and heat water; and managing forests, wetlands, and rangelands for carbon storage. In addition, the CARB's Cap-and-Trade program, which sets a hard and declining cap, is intended and anticipated to further long-term reduction of GHG emissions, and a portion of the resulting revenues are dedicated to the purpose of reducing GHG emissions.

It is expected that these agencies can and will implement these measures to reduce and control GHG emissions in furtherance of both the 2020 goals of AB 32 and 2050 goals of Executive

Order S-3-05. Specifically, it is reasonable to assume that CARB will continue its existing programs, implement planned programs, and take further action to reduce vehicle emissions, and that, in accordance with CARB and other programs, the California CPUC and the CEC will take action to further reduce the per-megawatt greenhouse gas burden of energy used in the project, as set forth in the Scoping Plan, Discussion Draft Update, and Draft Update. Assuming that such measures are implemented, the conclusion in the Draft EIR that the proposed project would not result in a direct or cumulative greenhouse gas impact remains valid.

Executive Order S-01-07 (Low Carbon Fuel Standard)

With respect to Executive Order S-01-07 (Low Carbon Fuel Standard [LCFS]), the Draft EIR acknowledged that a preliminary injunction blocking California Air Resources Board (CARB) from implementing LCFS for the remainder of the Rocky Mountain Farmers Union litigation was initiated in December 2011. However, in January 2012, CARB appealed that decision to the Ninth Circuit Court of Appeals (Ninth Circuit), and then moved to stay the injunction pending resolution of the appeal. On April 23, 2012, the Ninth Circuit granted the CARB's motion for a stay of the injunction while it continued to consider CARB's appeal of the lower court's decision. Consequently, the LCFS enforcement injunction was lifted, and CARB is continuing to implement the LCFS statewide.

Regional Transportation Plan

The Draft EIR included a discussion of the 2050 Regional Transportation Plan (RTP) prepared by the San Diego Association of Area Governments (SANDAG). However, on December 20, 2012, the San Diego Superior Court entered a judgment that invalidated the EIR that was prepared for the 2050 Regional Transportation Plan (RTP) because it did not adequately address GHG emissions in the year 2050. However, the effect of the judgment, and the ultimate disposition of the RTP and its EIR remains uncertain, as SANDAG has appealed the judgment.

CARB Scoping Plan

The GHG analysis in the Draft EIR was based on a Scoping Plan prepared by CARB (2008 Scoping Plan). A supplement to the 2008 Scoping Plan was prepared by CARB in 2011. The 2011 supplement to the Scoping Plan takes into account the fact that growth in California is slower than anticipated due to the recession. The 2011 supplement to the Scoping Plan includes a revised 2020 BAU projection to account for the economic downturn and other factors in the Supplement to the AB 32 Scoping Plan Functional Equivalent Document prepared by CARB. CARB's revised estimate calculated that BAU 2020 emissions would be approximately 507 MMT CO_2e per year. Thus, in order to reach the 1990 emissions level of 427 MMT CO2e, an 80 MMT CO_2e (16 percent) reduction was determined to be needed by 2020. The 2008 Scoping Plan assumed that a reduction of 174 MMT CO_2e (28.3 percent) would be required to achieve the 1990 goal.

The 2011 supplement to the Scoping Plan anticipates that the new regulations (Pavley I) would reduce GHG emissions from California passenger vehicles by about 31.7 MMT CO_2e (or

18 percent) counted toward the total statewide reduction target (CARB 2008). However, the revised 2011 projections estimate that Pavley I will reduce GHG emissions from passenger vehicles by about 29.9 MMT CO_2e (or 17 percent), for 37 percent of the total 80 MMT CO_2e reduction target.

CARB has adopted a second, more stringent, phase of the Pavley regulations, termed “Pavley II” [now known as “Low Emission Vehicle (LEV) III”], that covers model years 2017 to 2025. Pavley II was estimated in 2008 to add an additional 4.0 MMT CO_2e. The revised 2011 projections estimate that Pavley II will reduce GHG emissions from passenger vehicles by 3.8 MMT CO_2e. These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives.

The 18 percent reduction in the intensity of transportation fuels is expected to equate to a reduction of 16.5 MMT CO_2e in 2020 (based on the original 2008 Scoping Plan estimates). However, in order to account for possible overlap of benefits between LCFS and the Pavley GHG standards, CARB has discounted the contribution of LCFS to 15 MMT CO_2e (CARB 2008).

Despite the update that occurred in 2011, reliance on the 2008 Scoping Plan does not invalidate the results and conclusions of the GHG in the Draft EIR. The 2008 Scoping Plan and the 28.3 percent GHG reduction target are the considered by the City to be the most appropriate thresholds for analysis because they provide a conservative estimate of GHG emissions and design features required to achieve the target reduction on a project-level. In support of the City’s position, it should be noted that on June 19, 2012, the California Court of Appeal ruled that the 2008 Climate Change Scoping Plan adopted by the CARB does comply with the requirements of the Global Warming Solutions Act of 2006 (AB 32).

To further support the fact that the conclusion of the Draft EIR that the project would not result in significant GHG impacts, the GHG emissions associated with the project were re-assessed based on the 2011 supplement to the Scoping Plan. The results of this analysis are presented in Attachment B to this memorandum. As illustrated in Attachment B, the GHG emissions related to the proposed project would be consistent with attaining the reductions specified in AB 32 by the year 2020.

In order to better illustrate the GHG reduction measures recommended in the 2008 Scoping Plan, a new table (Table 5.7-1) has been added to the Final EIR. This table summarizes the GHG reductions anticipated from state regulations that would apply to operations of the proposed development.

Table 5.7-1
CARB 2008 SCOPING PLAN RECOMMENDED GHG REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted Towards 2020 Target In MMT CO_2e	
	MMT	% of Total
California Light-Duty Vehicle Greenhouse Gas Standards • Implement Pavley I Standards • Develop Pavley II light-duty vehicle standards	31.7	18.22
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 GWh • Solar Water Heating (AB 1470 goal)	26.3	15.11
Renewables Portfolio Standard (33% by 2020)	21.3	12.24
Low Carbon Fuel Standard	15	8.62
Regional Transportation-Related GHG Targets[1]	5	2.87
Vehicle Efficiency Measures	4.5	2.59
Goods Movement • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.7	2.13
Million Solar Roofs	2.1	1.21
Medium/Heavy Duty Trucks • Heavy-Duty Vehicle Greenhouse Gas Emissions Reduction (Aerodynamic Efficiency) • Medium- and Heavy-Duty Vehicle Hybridization	1.4	0.80
High Speed Rail	1.0	< 1.0
Industrial Measures (for sources covered under cap and trade program) • Refinery Measures • Energy Efficiency and Co-Benefits Audits	0.3	< 0.5
Additional Reductions Necessary to Achieve the Cap	34.4	20.0
Industrial Measures (for sources not covered under cap and trade program) • Oil and Gas Extraction and Transmission	1.1	<1.0
High Global Warming Potential Gas Measures	20.2	12.0
Sustainable Forests	5.0	3.0
Recycling and Waste (landfill methane capture)	1.0	0.60
TOTAL ESTIMATED REDUCTIONS COUNTED TOWARDS 2020 TARGET	174	100[2]

TABLE 5.7-1 (Cont.)
CARB 2008 SCOPING PLAN RECOMMENDED GHG REDUCTION MEASURES

Other Recommended Measures	Estimated 2020 Reductions (MMT CO_2e)	
	MMT	% of Total
State Government Operations	1	2.0
Local Government Operations	TBD	TBD
Green Building	26	14.94
Recycling and Waste	9	5.17
Water Sector Measures	4.8	2.76
Methane Capture at Large Dairies	1.0	< 1.0

Source: CARB 2008

[1] This number represents an estimate of what may be achieved from local land use changes. It is not the SB 375 regional target. CARB will establish regional targets for each Metropolitan Planning Organization following input of the Regional Targets Advisory Committee and a public stakeholders consultation process per SB 375.

[2] Percentages are relative to the total of 174 MMT CO_2e, and may not total 100 due to rounding.

California Green Building Standards Code

The 2013 updates to the 2010 California Green Building Standards Code referred to as CalGreen became effective in January 2014.

GHG Impact Thresholds

The original GHG analysis relied upon a GHG threshold of 900 MT established by the California Air Pollution Control Officers Association (CAPCOA). The City of San Diego (City) released an updated memorandum dated August 18, 2010, titled *Addressing Greenhouse Gas Emissions from Projects Subject to CEQA*. As indicated in the memorandum, the City is also using an annual generation rate of 900 MT as a conservative screening threshold for requiring further GHG analysis and mitigation. This threshold provides the basis for the GHG analysis in the Draft EIR.

GHG Assessment Method

Since the original GHG analysis was completed in May 2010, a new emissions model known as CalEEMod version 2011.1 was released in February 2011. Although the CalEEMod methodology has been developed more recently than URBEMIS 2007 version 9.2.4, and includes some features that make it easier to use, it has not superseded URBEMIS.

URBEMIS uses emission factors and equation methodologies which are similar to CalEEMod. Emission factors from the California Air Resources Board’s 2007 motor vehicle emission factors model (EMFAC2007) and 2007 off-road heavy duty equipment emission factor model (OFFROAD2007) are used in both the models. Both models use trip generation rates defined by the Institute of Transportation Engineers (ITE) to calculate operational emissions and total vehicle trips. Lastly, both use the OFFROAD2007 equipment emission factors, load factors, and horsepower ratings to calculate construction-related emissions.

It is also important to note that the GHG calculations for operational emissions included in Appendix G of the Final EIR supplemented the URBEMIS model to account for the fact that, unlike CalEEMod, the URBEMIS model does not take into account GHG emissions related to N_2O and CH_4. As discussed on pages 54-56 of Appendix G, the calculation of GHG emissions included additional analysis based on the California Climate Action Registry, General Reporting Protocol, Reporting Entity-Wide Greenhouse Gas Emissions, version 3.1. This protocol was used to supplement URBEMIS and account for N_2O and CH_4. Furthermore, the current CalEEMod (version 1013.2.2) is based on EMFAC 2011 while the General Reporting Protocol was based on EMFAC 2007. Since the EMFAC 2011 assumes lower vehicle emissions due to cleaner cars, the analysis in the Final EIR represents a more conservative approach to calculating GHG emissions. Thus, the estimates included in the Final EIR, as supplemented with the General Reporting Protocol, would not underestimate GHG emissions in comparison with the CalEEMod. In fact, given the lower vehicle emissions assumptions used in CalEEMod, the GHG emissions estimated in the Final EIR could be greater that CalEEMod would estimate.
In addition to not factoring in N_2O and CH_4 for operational GHG emission estimates, URBEMIS does not take these factors into account in estimating GHG emissions relate to construction. However, as indicated on page 53 of Appendix G, inclusion of these two factors would not result in an substantial change in the GHG emissions associated with project construction.

On the basis of the factors discussed above, the use of URBEMIS, supplemented by the General Reporting Protocol, is an adequate means of evaluating GHG impacts associate with the proposed project.

Project GHG Emissions

Given the changes discussed above, GHG emissions anticipated to be generated by the project have changed from those projected in the Draft EIR. Tables 5.7-6 through 5.7-8 in the Final EIR (included below) reflect the updated GHG emissions related to the project. The emissions identified in these tables are based on the land uses included in the Originally Proposed Project. As the Revised Project would result in less land use intensity than the Originally Proposed Project, the GHG emissions related to the Revised Project would be less than depicted in Tables 5.7-6 through 5.7-8.

Based on more recent information on electricity consumption rates contained in the California Energy Commission's 2006 California Commercial End-Use Survey and the 2004 California Statewide Residential Appliance Saturation Survey, the GHG emissions related to electric energy use have been updated in Table 5.7-6 of the Final EIR. As result, the annual GHG emissions related to electricity consumption increased from 5,576 to 6,293 metric tons CO_2e. As shown in the revised Table 5.7-6, this change does not alter the conclusions of the Draft EIR.

With respect to indirect GHG emission sources from operation of the project, the analysis in the Draft EIR has been updated to reflect the Revised Project and to include energy consumption and solid waste emissions which were not included in the analysis completed for the Draft EIR. In order to assure that GHG emissions related to these indirect sources were factored into the overall GHG estimate for project operations, GHG emissions from these sources were calculated separately and included in Table 5.6-6.

In reviewing the way the Draft EIR evaluated the GHG emission reductions resulting from LCFS, it was determined that the vehicular use percentages summarized on page 5.7-22 of the Draft EIR were not comprehensive. As a result, the Draft EIR presented incorrectly low percentage reductions for the state-mandated vehicle standards, thereby overstating the impact of the proposed development. The amount of GHG reduction anticipated by implementation of state transportation-related measures was increased from 2,940 to 4,573 MT CO_2e, and included in the vehicular use emissions included in Table 5.7-6 of the Final EIR.

Table 5.7-6
TOTAL ESTIMATED OPERATIONAL GHG EMISSIONS
UNDER BAU CONDITIONS

Emission Source	Annual Net Emissions (MT/year)			
	CO_2	CH_4	N_2O	CO_2 Equivalents
Electricity Use Emissions	6,266	0.02614	0.0702	6,293
Natural Gas Use Emissions	2,880	0.3203	0.0054	2,889
Water Consumption Emissions	448	0.0187	0.0050	450
Solid Waste Emissions	90	0.0003	0.0002	90
Vehicular Use Emissions	12,604	3.5657	3.6674	13,816
Global Warming Potential Factor	1	21	310	--
TOTAL CO_2 Equivalent Emissions				**23,538**

Source: HELIX 2012b

As a result of the updated analysis of operational and construction emissions, the total project GHG emissions increased slightly in each of the construction scenarios from that identified in the Draft EIR. The largest increase was 744 MT/year in Construction Scenario 3, which increased by 4 percent from 23,036 to 23,780 MT/year. The revised total project emissions are illustrated in Table 5.7-7 of the Final EIR. However, even with this increase, the Draft EIR conclusion that GHG impacts would be less than significant remains unchanged.

Table 5.7-7
TOTAL PROJECT GHG EMISSIONS
(MT per Year)

Emissions Source	Construction Scenario 1	Construction Scenario 2	Construction Scenario 3
Amortized Construction	174	173	242
Operations	23,538	23,538	23,538
TOTAL	**23,712**	**23,711**	**23,780**

GHG Emission Reductions Resulting From State Regulations

Based on the Table 5.7-1, the percent reductions in GHG emissions resulting from the implementation of existing state programs and regulations have been updated from those reflected in Table 5.7-7 of the Draft EIR. The revised reduction estimates are provided in Table 5.7-8 of the Final EIR which is included below. Based on the updated analysis, the estimated GHG emission reductions related to state regulations would increase by 24 percent from 5,946.76 to 7,742.17 MT/year.

Table 5.7-8
EXISTING STATE MEASURES FOR GREENHOUSE GAS EMISSIONS REDUCTIONS
(MT per Year)

Measure	Sector	Percent Reduction from BAU (Sector Specific)[1]	BAU CO_2e/Sector[2]	CO_2e Reduced[3]
Million Solar Roof	Energy Use	1.21%	6,293	76.15
Energy Efficiency (AB 32)	Energy Use	15.11%	6,293	950.87
Renewable Portfolio Standard (33% by 2020)	Energy Use	12.24%	6,293	770.26
Title 24 Energy Code Requirements (Green Buildings)	Natural Gas/ Energy Use	14.94%	9,182	1,371.79
Assembly Bill 1493 (Pavley Standards)	Transportation	18.22%	13,816	2,517.28
Executive Order S-1-07 (Low Carbon Fuel Standard)	Transportation	8.62%	13,816	1,190.94
Medium/Heavy Duty Vehicles (Aerodynamic Efficiency and Vehicle Hybridization)	Transportation	0.80%	13,816	110.53
Regional Transportation-related GHG Targets	Transportation	2.87%	13,816	396.52
Vehicle Efficiency Measures	Transportation	2.59%	13,816	357.83
			Subtotal – MT of CO_2e Reduced	**7,742.17**

[1] Percent Reduction from BAU calculated based on the CARB Scoping Plan reductions for sector-specific activity (e.g., LCFS Reductions Counted Towards 2020 Target is 15 MMT CO_2e and Projected 2020 BAU emissions are 174 MMT CO_2e, therefore 15 MMT $CO_2e \div 174$ MMT CO_2e = 8.62%). *CARB Scoping Plan, December 2008*

[2] Emissions available from Table 10, by sector: Total Greenhouse Gas Emissions (Annual) BAU without Consideration of Project Design Features and/or State and Federal Mandates.

[3] CO_2e Reduction is quantified by multiplying the Percent Reduction from BAU (Sector Specific) by the BAU CO_2e/Sector mtpy value.

Source: HELIX 2012b

Based on state standards, emissions from vehicles would be reduced by 18.22 percent through implementation of the Pavley standards, 8.62 percent through LCFS, 2.87 percent through regional transportation-related GHG targets, 2.59 percent vehicle efficiency measures, and 0.80 percent by the light/heavy vehicle aerodynamic efficiency/hybridization standard.

Emissions from vehicles would therefore be reduced by as much as 33 percent from state programs by the year 2020.

Based on the information in the 2008 Scoping Plan, presented in Table 5.7-1, emissions from energy use would be reduced by 12.24 percent through Renewable Portfolio Standards, 15.11 percent through energy efficiency (building/appliance efficiency, increase HP generation, and solar water heating), 14.94 percent through Green Buildings, and 1.21 percent through the million solar roof program. Emissions from energy use would, therefore, be reduced by as much as 44 percent by the year 2020.

In summary, as indicated in Table 5.7-8 of the Final EIR, a total reduction of approximately 7,742 MT per year of GHG emissions would occur from implementation of the state measures (including the LCFS reduction). Without the LCFS reduction, a total reduction of approximately 6,551 MT per year would occur.

GHG Emission Reductions Resulting from Project-level Measures

In order to more accurately estimate the GHG reductions resulting from complying with the latest CalGreen building requirements related to energy and water use, more detailed calculations were prepared. As a result of this more detailed analysis, the GHG reductions related to energy and water use increased from 2,511.96 to 6,037.80. Table 5.7-9 of the Final EIR provides the updated estimate of GHG reductions resulting from project-level measures.

Conclusion

Accounting for the state reduction measures and potential project GHG reduction features discussed above, a total reduction of approximately 13,780 MT per year of CO_2e emissions would occur (including the LCFS reduction). As shown in Table 5.7-10, this equates to a 58.11 percent reduction in emissions below BAU levels for construction Scenarios 1 and 2, and 57.95 percent reduction for construction Scenario 3. As a result, the conclusion that the project would not result in significant GHG impacts remains valid. With the modifications discussed above, the GHG reductions would be approximately 58 percent which would substantially exceed the 28.3 percent threshold established by the 2008 Scoping Plan. As discussed earlier, the GHG emissions would be proportionately less with the project applicant's intent to pursue the Revised Project.

Table 5.7-9
PROJECT-LEVEL GHG REDUCTION FEATURES FOR GREENHOUSE GAS EMISSIONS REDUCTIONS
(MT Per Year)

Category - Feature	Sector	2010 CAPCOA Report Measure	Percent Reduction from BAU (Sector Specific)	BAU CO_2e/Sector	CO_2e Reduced
Building Energy Use – Energy efficient features	Natural Gas/ Energy Use	BE-1	20%	9,182	1,836.40
Water Use – Water conservation features	Water Use Related Emissions	WUW-1	30%	450	135
Solid Waste Generation – Waste management practices	Municipal Solid Waste Generation	SW-1 and SW-2	5%	90	4.50
Mixed-use Developments – Reduced VMT	Transportation	LUT-3	29.4%	13,816	4,061.90
				Subtotal – MT of CO_2e Reduced	**6,037.80**

Note: CO_2e Reduction is quantified by multiplying the Percent Reduction from BAU (Sector Specific) after the implementation of the state measure BAU CO_2e/Sector mtpy value found in Table 5.7-8.
Source: HELIX 2012b

Table 5.7-10
SUMMARY OF ESTIMATED TOTAL PROJECT GREENHOUSE GAS EMISSIONS WITH GHG REDUCTIONS
(MT per Year)

	Construction Scenario 1	Construction Scenario 2	Construction Scenario 3
BAU Total Project Emissions	23,712	23,711	23,780
State Measures Emissions Reductions	-6,038	-6,038	-6,038
GHG Reduction Features Emissions Reductions	-7,742	-7,742	-7,742
Total Reduced Emissions	**9,932**	**9,931**	**10,000**
Percent Reduction	**58.11**	**58.11**	**57.95**

Source: HELIX 2012b

Please contact me if you have any questions or would like clarifications regarding the information contained in this memorandum.

Sincerely,

Joanne M. Dramko, AICP
Environmental Planning Group Manager
Senior Air Quality Specialist

Enclosures:

Attachment A: Air Quality and GHG Impacts Related to the Revised Project
Attachment B: GHG Analysis Pursuant to 2011 Supplement to the 2008 Scoping Plan

Attachment A

Air Quality and Greenhouse Gas Impacts Related to the Revised Project

INTRODUCTION

In response to comments received during the public review period for the Draft Environmental Impact Report (EIR), the project applicant, Kilroy Realty Corporation, reduced the density and intensity of the proposed development. For comparison purposes, the new plan is referred to as the "Revised Project" while the plan analyzed in the Draft EIR is referred to as the "Originally Proposed Project."

This document discusses how the Revised Project currently proposed by the project applicant relates to the results and conclusions of air quality and GHG analysis prepared for the Originally Proposed Project in the Draft EIR. As discussed below, the Revised Project would not generate criteria pollutants, diesel particulate matter, or greenhouse gas (GHG) in greater volumes than the Originally Proposed Project, for which the Draft EIR analysis determined that GHG impacts were less than significant. Thus, the following discussion is qualitative rather than quantitative.

The land use components of the Revised Project are illustrated in Table 1.

Table 1
REVISED PROJECT

Block	Commercial Retail[1] (Square Feet)		Commercial Office[3] (Square Feet)		Multi-family Residential (Dwelling Units)
	Retail	Cinema[2]	Corporate Office	Professional Office[4]	
A	47,353	---	---	---	165
B	38,000	---	---	---	337
C	12,611	---	---	---	106
D	70,100	48,000	221,000	21,000	
E	30,254		242,000		
Total	**198,500**	**48,000**	**463,000**	**21,000**	**608**

All areas are considered gross leasable because all retail space may be leasable.
Cinema consists of up to 1,200 seats with 400 seats in Phases 1 & 2 and 1,200 seats in Phase 3.
Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.
Professional Office (located on Main Street).

As shown in Table 2, the most substantial land use differences between the Revised Project and Originally Proposed Project include elimination of the proposed 150-room, 100,000 square-foot hotel, and a nearly 22 percent reduction in the commercial GFA, including the hotel, from 930,000 GFA to 714,729 GFA. The reduction in the total commercial square footage would include a 14 percent reduction in the amount of office space and a 10 percent reduction in the amount of retail. Although the size of the cinema would decrease by 2,000 sf, it would still include 1,200 seats. Although the number of residential units would remain at 608 multi-family units, the overall square footage devoted to residential uses would be reduced by approximately 215,000 GFA.

Table 2
LAND USE COMPARISON OF THE ORIGINALLY PROPOSED PROJECT WITH REVISED PROJECT (GROSS FLOOR AREA[1])

Project	Commercial Retail (Square Feet)		Commercial Office (Square Feet)		Hotel (Square Feet)	Multi-Family Residential (Dwelling Units)		Total	
	Retail	Cinema[2]	Corporate	Professional		Units	Square Feet	Square Feet	FAR
Originally Proposed Project	220,000	50,000	535,600	21,840	100,000	608	930,000	1,857,440	1.8
Revised Project	198,500	48,000	471,000	21,840	0	608	714,729	1,454,069	1.4
Net Change with Revised Project	**-21,500**	**-2,000**	**-64,600**	**0**	**-100,000**	**0**	**-215,271**	**-403,371**	**-1.0**

[1] Gross Floor Area calculations per Land Development Code.
[2] Cinema of up to 1,200 seats.

The amount of grading would be reduced with the Revised Project. The total amount of cut would be reduced from 528,000 cubic yards (cy) to 483,400 cy, and fill would slightly increase from 30,400 to 31,200 cy. The reduced grading would be reduce soil export from 498,400 cy to 452,200 cy.

AIR QUALITY AND GREENHOUSE GAS IMPACTS

As discussed below, the air quality and GHG impacts associated with long-term operations of the Revised Project would be reduced in comparison with Originally Proposed Project due to the reduction in the number of automobile trips and square footage of proposed buildings. However, the impacts during construction would be comparable.

Construction Impacts

Criteria Pollutants

The Draft EIR concluded, in Section 5.5.3, that construction activities associated with the Originally Proposed Project would not result in significant air quality impacts related to criteria pollutants (i.e., VOC, NOx, CO, SOx, PM_{10} or $PM_{2.5}$). The generation of criteria pollutants, GHG and diesel particulates during construction from the Revised Project would be comparable to that of the Originally Proposed Project because the emission levels are based on the surface area to be graded and the number of pieces of construction equipment operating at a time. These factors would remain essentially unchanged between the Originally Proposed Project and the Revised Project. Therefore, the conclusions of the Draft EIR would remain unchanged.

Toxic Air Contaminants

The Draft EIR concluded, in Section 5.5.4, that construction activities associated with the Originally Proposed Project would not result in significant air quality impacts related to diesel particulates. As with criteria pollutants, the similar construction equipment usage under the Revised Project would generate diesel particulates comparable to the Originally Proposed Project. Therefore, the conclusions of the Draft EIR would remain unchanged.

Greenhouse Gases

The Draft EIR concluded, in Section 5.7.2, that construction activities associated with the Originally Proposed Project would not result in significant GHG emissions. As with criteria pollutants and diesel particulates, the similarity in construction equipment usage would generate GHGs comparable to the Originally Proposed Project. Therefore, the conclusions of the Draft EIR would remain unchanged.

Long-term Operational Impacts

Criteria Pollutants

The Draft EIR concluded, in Section 5.5.3, that operations associated with the Originally Proposed Project would not result in significant air quality impacts related to criteria pollutants. Because the reduced square footage of the Revised Project would reduce average daily vehicle trips (ADT) by approximately 13 percent compared to the Originally Proposed Project, as well as reduce the demand for energy, the Revised Project would result in lower emissions of criteria pollutants than the Originally Proposed Project. Therefore, the conclusions of the Draft EIR would remain unchanged.

Toxic Air Contaminants

The Draft EIR concluded, in Section 5.5.4, that operations associated with the Originally Proposed Project, would not result in significant levels of toxic air contaminants (TACs) related to diesel particulates and heating and ventilation associated with operation of the proposed development. The Revised Project would reduce the square footage of buildings requiring heating and ventilation, reducing TACs associated with this source compared to the Originally Proposed Project. Similarly, the reduction in the retail development would reduce the number of trucks providing deliveries, which would proportionately reduce diesel particulates. Therefore, the conclusions of the Draft EIR would remain unchanged.

Greenhouse Gases

The Draft EIR concluded, in Section 5.7.2, that operations associated with the Originally Proposed Project would not result in a significant impact regarding GHG emissions. Because the Revised Project would reduce ADT by approximately 13 percent compared to the Originally Proposed Project, as well as reduce the demand for energy, the Revised Project would generate less GHG than the Originally Proposed Project. Therefore, the conclusions of the Draft EIR would remain unchanged.

CONCLUSION

As discussed in each of the analyses above, the Revised Project would result in the same or reduced emissions of criteria pollutants, diesel particulates, and GHGs. Therefore, as the Draft EIR concluded that the Originally Proposed Project would not result in significant project or cumulative impacts with respect to criteria pollutants, diesel particulates, or GHGs during construction or operation of the proposed development, the Revised Project also would not result in any project or cumulative impacts for any of those emissions, and the conclusions of the Draft EIR remain unchanged.

Attachment B

Project GHG Emissions Based on the 2011 Supplement to the 2008 Scoping Plan

The following analysis of GHG emissions related to the Originally Proposed Project is based on the 2011 Supplement to the 2008 Scoping Plan (2011 Scoping Plan) prepared by the California Air Resources Board (CARB) and the land uses included in the Revised Project being pursued by the project applicant. GHG emissions were estimated through the use of the URBEMIS model which was used for the original analysis. As with the 2008 Scoping Plan, the analysis under the 2011 supplement to the Scoping Plan concludes that the proposed development would not result in a significant GHG impact. As the Revised Project would result in less land use intensity than the Originally Proposed Project, the GHG emissions related to the Revised Project would be less than depicted in Tables 1 and 3.

As shown in Table 1, the total estimated operational GHG emissions associated with the Originally Proposed Project under unmitigated BAU conditions (pursuant to the reduced growth assumptions of the 2011 supplement to the Scoping Plan) would be 23,538 MT of CO_2e emissions per year.

Table 1
TOTAL ESTIMATED OPERATIONAL GHG EMISSIONS ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT UNDER UNMITIGATED BAU CONDITIONS[1]

	Annual Net Emissions (MT per Year)			
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2 Equivalents**
Electricity Use	6,266	0.02614	0.0702	6,293
Natural Gas Use	2,880	0.3203	0.0054	2,889
Water Consumption	448	0.0187	0.0050	450
Solid Waste	90	0.0003	0.0002	90
Vehicular Use	12,604	3.5657	3.6674	13,816
Global Warming Potential Factor	1	21	310	--
			TOTAL	**23,538**

[1] Based on the 2011 supplement to the Scoping Plan

The unmitigated emissions would be reduced by implementation of state-level measures implementing AB 32. Table 2 presents the GHG emissions reductions anticipated to result from implementing AB32 measures with the associated with the Originally Proposed Project. As identified in Table 2, a total reduction of approximately 3,288 MT per year of GHG emissions would occur from state-level mandates (without the LCFS reduction).

Table 2 GHG REDUCTIONS ACHIEVED BY IMPLEMENTATION OF EXISTING AB32 MEASURES APPLIED TO UNMITIGATED GHG EMISSIONS ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT				
Measure	**Sector**	**Reduction from BAU (Sector Specific) (%)**	**BAU CO_2e/Sector (MT per Year)**	**CO_2e Reduction (MT per Year)**
Renewable Portfolio Standard (33% by 2020)	Energy Use	12.24	6,293	770.26
Assembly Bill 1493 (Pavley Standards)	Transportation	18.22	13,816	2,517.28
			TOTAL	**3,287.54**

Source: CARB 2008

Thus, when the reductions from state-mandated GHG emissions (3,287.54 MT per year) are subtracted from the total anticipated annual GHG emissions (23,538 MT per year), the net emissions associated with the Originally Proposed Project are anticipated to be 20,251 MT per year.

The total unmitigated GHG emissions expected from the Originally Proposed Project including construction and operational emissions are summarized in Table 3.

Table 3 TOTAL PROJECT UNMITIGATED GHG EMISSIONS[1] ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT			
Emissions Source	**Construction Scenario 1 (MT per Year)**	**Construction Scenario 2 (MT per Year)**	**Construction Scenario 3 (MT per Year)**
Amortized Construction	174	173	242
Operations	20,251	20,251	20,251
TOTAL	**20,425**	**20,424**	**20,493**

Based on the *Recommended Greenhouse Gas Reduction Measures* in the adopted 2008 Scoping Plan, the percent reductions in GHG emissions anticipated through implementation of the Federal CAFE standards, LCFS, and AB 1493 fuel efficiency standard (analogous to the Federal CAFE standard), as well as the effect of light/heavy vehicle efficiency/hybridization programs can be estimated. Based on state standards, emissions from vehicles would be reduced by 8.62 percent through LCFS, 2.87 percent through regional transportation-related GHG targets, 2.59 percent vehicle efficiency measures, and 0.80 percent by the light/heavy vehicle aerodynamic efficiency/hybridization standard. Emissions from energy use would be reduced by 15.11 percent through energy efficiency (building/appliance efficiency, increase HP generation, and solar water heating), 14.94 percent through Green Buildings, and 1.21 percent through million solar roof programs. Emissions from energy use would, therefore, be reduced by as much as 44 percent by the year 2020. Table 4 presents the GHG emissions reduction due to existing state measures associated with the Originally Proposed Project.

Table 4
GREENHOUSE GAS EMISSIONS REDUCTIONS BASED ON EXISTING STATE MEASURES ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT

Measure	Sector	Reduction from BAU (Sector Specific) (%)	BAU CO_2e/Sector (MT per Year)	CO_2e Reduction (MT per Year)
Million Solar Roof	Energy Use	1.21%	5,523	66.83
Energy Efficiency (AB 32)	Energy Use	15.11%	5,523	834.53
Title 24 Energy Code Requirements (Green Buildings)	Natural Gas/ Energy Use	14.94%	8,412	1,256.75
Executive Order S-1-07 (Low Carbon Fuel Standard)	Transportation	8.62%	11,299	973.97
Medium/Heavy Duty Vehicles (Aerodynamic Efficiency and Vehicle Hybridization)	Transportation	0.80%	11,299	90.39
Regional Transportation-related GHG Targets	Transportation	2.87%	11,299	324.28
Vehicle Efficiency Measures	Transportation	2.59%	11,299	292.64
			TOTAL	**3,839.39**

[1] Percent Reduction from BAU calculated based on the CARB 2008 Scoping Plan reductions for sector-specific activity (e.g., LCFS Reductions Counted Towards 2020 Target is 15 MMT CO_2e and Projected 2020 BAU emissions are 174 MMT CO_2e, therefore 15 MMT CO_2e ÷ 174 MMT CO_2e = 8.62%). C*ARB Scoping Plan, December 2008*

[2] Emissions available from Table 10, by sector: Total Greenhouse Gas Emissions (Annual) BAU without Consideration of Project Design Features and/or State and Federal Mandates.

[3] CO_2e Reduction is quantified by multiplying the Percent Reduction from BAU (Sector Specific) by the BAU CO_2e/Sector mtpy value.

As illustrated in Table 5, with implementation of the State-mandated reduction standards, the Originally Proposed Project would be reduce GHG emissions by approximately 18 percent over BAU under the 2011 supplement to the Scoping Plan.

Table 5 SUMMARY OF ESTIMATED TOTAL GHG REDUCTIONS ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT			
Source	**Construction Scenario 1 (%)**	**Construction Scenario 2 (%)**	**Construction Scenario 3 (%)**
Project Emissions[1]	20,425	20,424	20,493
State Measures Emissions Reductions[2]	-3,839	-3,839	-3,839
Total Reduced Emissions	16,586	16,585	16,654
TOTAL	**18.8**	**18.8**	**18.7**

[1] As derived from Table 4.

[2] As derived from Table 2.

Implementation of project-level design features identified in Table 6 would further reduce the project's GHG emission contributions. As indicated in Table 7, the combined effect of the state-mandated reductions and project-level design features, the GHG emissions would be reduced by over 43 percent over BAU under the 2011 supplement to the Scoping Plan. This would more than achieve the 16 percent goal of the 2011 supplement to the Scoping Plan.

Table 6 GHG REDUCTION FEATURES FOR GREENHOUSE GAS EMISSIONS REDUCTIONS FROM DESIGN FEATURES ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT					
Category - Feature	**Sector**	**2010 CAPCOA Report Measure**	**Reduction from BAU (Sector Specific) (%)**	**BAU CO_2e/Sector (MT per Year)**	**CO_2e Reduction (MT per Year)**
Building Energy Use – Energy efficient features	Natural Gas/ Energy Use	BE-1	20%	8,412	1,682.40
Water Use – Water conservation features	Water Use Related Emissions	WUW-1	30%	450	135.00
Solid Waste Generation – Waste management practices	Municipal Solid Waste Generation	SW-1 and SW-2	5%	90	4.50
Mixed-use Developments – Reduced VMT	Transportation	LUT-3	29.4%	11,299	3,321.91
				TOTAL	**5,143.81**

Table 7
SUMMARY OF ESTIMATED TOTAL GHG REDUCTIONS ASSOCIATED WITH THE ORIGINALLY PROPOSED PROJECT

	Construction Scenario 1 (%)	**Construction Scenario 2 (%)**	**Construction Scenario 3 (%)**
Total Project Emissions	20,425	20,424	20,493
State-Mandated Measure Reductions	-3,839	-3,839	-3,839
Project Feature Reductions	-5,143	-5,143	-5,143
Total Reduced Emissions	-11,443	-11,442	-11,511
PERCENTAGE TOTAL	**43.98**	**44.25**	**43.83**

Thus, it is concluded that the proposed project would be in compliance with AB 32 under both the 2008 Scoping Plan and the 2011 Supplement to the 2008 Scoping Plan.

THIS PAGE LEFT INTENTIONALLY BLANK

Appendix H

DRAINAGE STUDY

PRELIMINARY DRAINAGE STUDY

FOR

ONE PASEO

PTS# 193036, IO# 24000155

Prepared For:

Kilroy Realty Inc.
3611 Valley Centre Drive, Suite 550
San Diego, CA 92130
(858) 523-0300

Prepared By:

Leppert Engineering Corporation
5190 Governor Drive, Suite 205
San Diego, CA 92122
(858) 597-2001
L.E.C. Job No. NCW 14.01-09.08

November 14, 2012

By: John D. Leppert
RCE 26283
Exp. 3/31/14

REGISTERED PROFESSIONAL ENGINEER
JOHN D. LEPPERT
C 26283
CIVIL
STATE OF CALIFORNIA

Leppert Engineering
CORPORATION

TABLE OF CONTENTS

FIGURES:

Appendices:

Map Pockets:

1.0 INTRODUCTION

1.1 Project Description

This drainage report presents the preliminary hydrologic analysis for the proposed San Diego Corporate Center Lots 1 & 2 (hereafter referred to as "the project"). The project is located southwest of the intersection of Del Mar Heights Road and El Camino Real, in the City of San Diego and specifically on Parcels 1 & 2 of Map 15061 and Parcel 2 of Map 19130. (See Figure 1, Vicinity Map, located at the end of Section 1.0) The planned 24 acre development will include a mixed-use center directly across from Del Mar Highlands. The proposed center will include office and retail space, 608 residential units, a cinema, two commercial office towers on the lowest elevation of the site and a 25,000- to 30,000-square-foot full service market, such as Whole Foods or Gelson's. The plan would also include public improvements to Del Mar Heights Road which include median and widening work in addition to adding two new signal lights on Del Mar Heights Road to provide safe ingress and egress to the center.

1.1.1 Land Use and Drainage Characteristics

<u>Pre-Project Drainage Characteristics</u>

The pre-project condition for the project consists of an undeveloped, mass graded site per grading plan DWG No. 23217-D. There are two major drainage basins (i.e. western basin and eastern basin) that outlet into the public storm drain along El Camino Real via separate points of connection.

The western basin drains in a southerly direction toward El Camino Real. This basin is further subdivided approximately in half and designed to drain into two temporary sediment basins which outlet the site into the public storm drain along El Camino Real via a temporary private storm drain system.

The eastern basin also drains in a southerly direction toward El Camino Real. This basin is further subdivided approximately in half and designed to drain into two temporary sediment basins which outlet the site into the public storm drain along El Camino Real via a temporary private storm drain system.

Both temporary on-site private storm drains discharge into the existing 66-inch public storm drain in El Camino Real which flows southwesterly into a regional detention basin as described in “Drainage Study, North City West Employment Center, Entire Precise Plan Area, dated February, 1984 by Rick Engineering Company.”

Post-Project Drainage Characteristics

The proposed development will be a mixed-use center consisting of office, retail, commercial, and residential buildings, underground/aboveground parking structures, private roadways, “hardscape” and “softscape” landscaping, and public improvements to Del Mar Heights Road and El Camino Real.

In the post-project condition, there are three major drainage basins (i.e. northern, western, and eastern basins) that outlet into the public storm drain along El Camino Real via separate points of connection.

The western basin consists of approximately 9.39 acres and drains in a southeasterly direction toward El Camino Real. The upper portion of this basin consists of off-site public roadway drainage which will enter the private on-site storm drain system at Third Avenue. The on-site private storm drain system will be designed to convey the off-site roadway drainage and private on-site runoff from throughout the drainage basin.

The northern basin consists of approximately 9.31 acres and drains in an easterly direction toward El Camino Real. This drainage basin consists of a drainage system similar to that described above except that the off-site roadway drainage will enter the private system at First Avenue. The on-site private storm drain system will be designed to convey the off-site roadway drainage and private on-site runoff from throughout the drainage basin.

The eastern basin consists of approximately 3.52 acres and drains in a easterly direction toward El Camino Real. The on-site private storm drain system will be designed to convey the private on-site runoff from throughout the drainage basin.

1.2 Hydrology and Hydraulics

Hydrology is discussed in detail in Section 2.0 of this report. Note that the hydrology results have been used to provide preliminary pipe sizes for the proposed on-site storm drain systems. Detailed hydraulic calculations will take place during final engineering of this project to determine inlet sizes and establish hydraulic grade lines (HGL's) throughout the proposed storm drains, and are not included in this report.

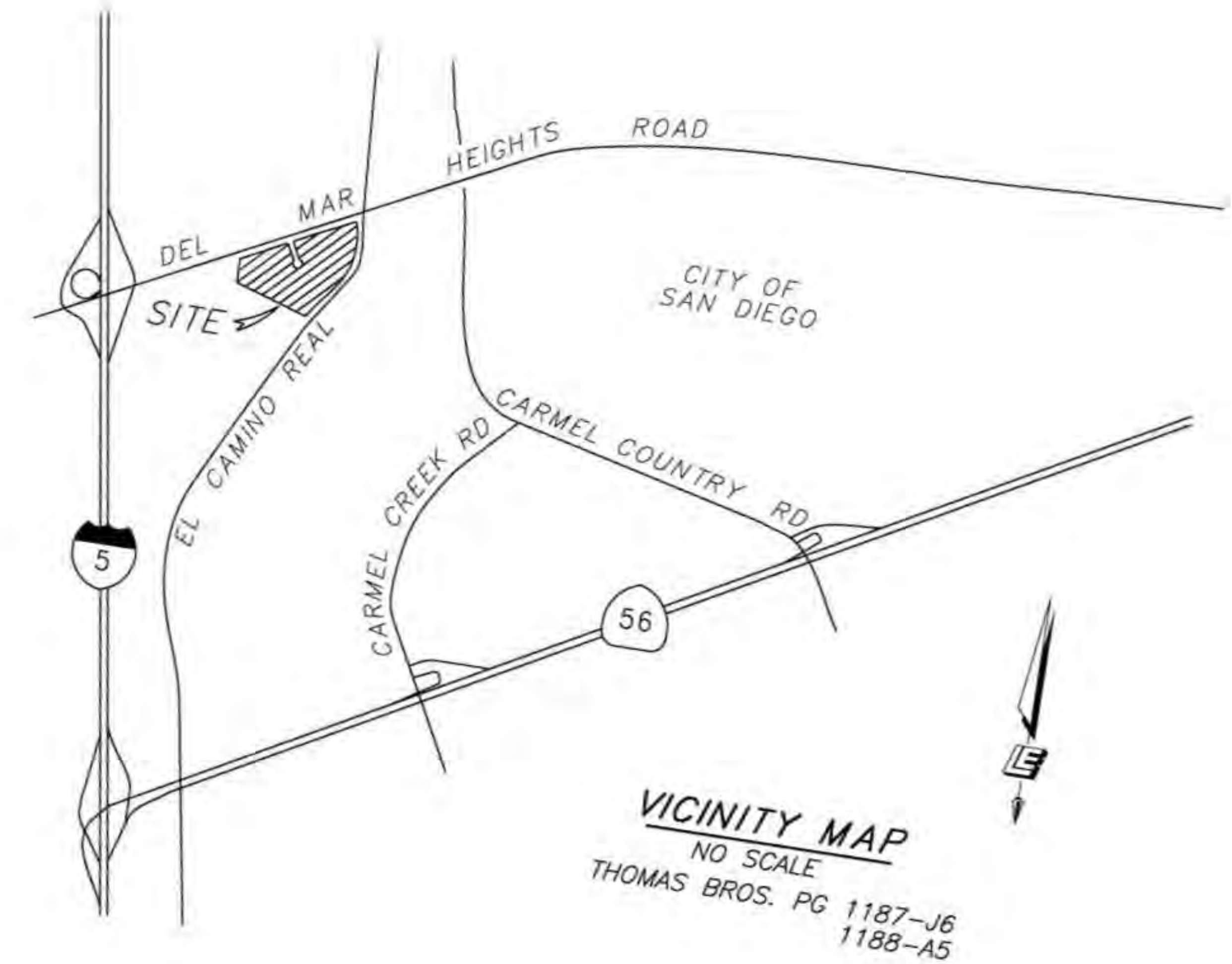
1.3 Detention

The City of San Diego Land Development Manual - Storm Water Standards Manual (herein referred to as Storm Water Standards Manual), dated January, 2011, requires that all priority projects implement a hydromodification management plan, unless the project is exempt. Hydromodification controls are required to be implemented for the proposed project in accordance with the HMP Decision Matrix from the Storm Water Standards Manual. The method chosen to meet the hydromodification requirement is detention vaults. See the "Water Quality Technical Report for One Paseo" dated November 14, 2012, prepared by Leppert Engineering Corporation, for further detail.

1.4 Water Quality

Post-project storm water runoff will be treated per the Storm Water Standards Manual and will be discussed in the report titled; “Water Quality Technical Report for One Paseo” dated November 14, 2012, prepared by Leppert Engineering Corporation.

Figure 1: Vicinity Map



2.0 Hydrology

2.1 Methodology

The *City of San Diego Drainage Design Manual April 1984* requires that the Rational Method be used for hydrologic analysis of a watershed up to but not exceeding 1.0 square-mile (640 acres). The total drainage area is approximately 26.0 acres. The post-project 100-year storm event peak flow rates have been computed in this report to meet the City of San Diego's criteria and support sizing for the storm drain system. Autodesk Storm and Sanitary Analysis 2013 software was used for this study because it satisfies the City of San Diego's design criteria.

2.1.1 Autodesk Storm and Sanitary Analysis 2011 Rational Method Computer Model

Autodesk Storm and Sanitary Analysis is a link-node based model that performs hydrology, hydraulic, and water quality analysis of storm water and wastewater drainage systems, including sewage treatment plants and water quality control devices. A link represents a hydraulic element (i.e., a pipe, channel, pump, standpipe, culvert, or weir) that transports flow and constituents. A node can represent the junction of two or more links, a storm drain catch basin inlet, the location of a flow or pollutant input into the system, or a storage element (such as a detention pond, retention pond, settling pond, or lake).

Drainage basin boundaries, flow patterns, and topographic elevations are shown on the drainage exhibits located in the map pockets.

2.2 Criteria

The hydrologic conditions were analyzed in accordance with the City of San Diego's design criteria as follows:

Design Storm: 100-year

Runoff Coefficients:

Industrial (Paved) C = 0.95
Natural/Landscaped C = 0.65

Soil Type: D

Rainfall Intensity: Based on Intensity – Duration – Frequency Curves per City of San Diego Drainage Manual Appendix I-B

Time of Concentration: Based on Urban Areas Overland Time of Flow Curves per City of San Diego Drainage Manual Appendix I-E

2.3 Hydrologic Results

Rational Method Results

The 100-year peak flow rates for the post-project conditions can be found below. Watershed boundaries, Rational Method node numbers, flow patterns, and areas can be found on the exhibits titled, "Drainage Basin Map for One Paseo Proposed Condition." Rational Method computer output for the proposed condition can be found in Appendix A.

Pre-Project Conditions

As stated in the introduction of this report, the existing public storm drain system within El Camino Real was designed for the ultimate build-out of this site. Based on this, pre-project hydrology calculations have not been provided, however a pre-project basin map has been included to identify existing watershed boundaries.

Post-Project Conditions

The western drainage basin is comprised of 11.69 acres, the northern drainage basin is comprised of 10.04 acres, and the eastern basin is comprised of 3.73 acres. The project area that includes on-site and off-site improvements is conveyed into the existing 66-inch storm drain system in both pre- and post-project conditions. Please see the exhibit, titled "Drainage Basin Map for One Paseo Proposed Condition" located in Map Pocket 2 of this report.

The proposed drainage facilities within the project site will be private and shall be maintained by the owner of the project. A summary table of the 100-year post-project condition hydrological analyses for the project as been included below:

POST-PROJECT-100-YR PEAK RUNOFF RATES

	Area (Ac)	Peak Runoff (CFS)
Link-83	10.04	68.6
Link-100	3.73	21.94
Link-42	11.69	87.24

3.0 CONCLUSION

This drainage report presents the 100-year post-project hydrologic analysis for One Paseo project. The post-project condition peak discharge rates were determined using the Rational Method based on the hydrologic methodology and criteria described in the City of San Diego Drainage Manual April 1984.

Since the public storm drain within El Camino Real was designed for ultimate build-out, the results above are provided to size the on-site system and points of connection into the existing 66-inch system in El Camino Real.

Pertaining to the Del Mar Heights roadway improvements, additional impervious areas are proposed as a result of the roadway widening. This will create increased run-off within the roadway for both off-site drainage areas. However, these off-site drainage areas will be collected through proposed curb inlets and conveyed through the private on-site storm drain system, discharging into the same public system downstream of the original location. Subsequently, this will reduce the flows within the existing system upstream of the proposed points of connection, while the existing downstream has been designed for ultimate build-out.

Post-project storm water runoff will be treated per the Storm Water Standards Manual. Please refer to the report titled, Water Quality Technical Report for One Paseo" dated November 14, 2012, prepared by Leppert Engineering Corporation, for more information with regards to water quality.

APPENDIX A

Rational Method Analysis (100-year)

[Post-Project]

Project Description

File Name	SSA Drainage Analysis.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	Rational
Time of Concentration (TOC) Method	User-Defined
Link Routing Method	Steady Flow
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	Nov 12, 2012	00:00:00
End Analysis On	Nov 13, 2012	00:00:00
Start Reporting On	Nov 12, 2012	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	30	seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins	57
Nodes	108
Junctions	50
Outfalls	1
Flow Diversions	0
Inlets	57
Storage Nodes	0
Links	121
Channels	14
Pipes	107
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period	100 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Sub-01	0.63	0.9500	0.37	0.35	0.22	2.62	0 00:05:00
2	Sub-02	0.11	0.6500	0.37	0.24	0.03	0.33	0 00:05:00
3	Sub-03	0.14	0.6500	0.37	0.24	0.03	0.40	0 00:05:00
4	Sub-04	0.09	0.9500	0.37	0.35	0.03	0.39	0 00:05:00
5	Sub-05	0.27	0.7000	0.37	0.26	0.07	0.84	0 00:05:00
6	Sub-06	0.16	0.7000	0.37	0.26	0.04	0.50	0 00:05:00
7	Sub-07	0.51	0.8500	0.37	0.31	0.16	1.89	0 00:05:00
8	Sub-08	0.13	0.6500	0.37	0.24	0.03	0.38	0 00:05:00
9	Sub-09	1.41	0.9500	0.37	0.35	0.49	5.88	0 00:05:00
10	Sub-10	0.21	0.6500	0.37	0.24	0.05	0.60	0 00:05:00
11	Sub-11	0.15	0.8000	0.37	0.29	0.04	0.53	0 00:05:00
12	Sub-12	0.97	0.9500	0.37	0.35	0.34	4.05	0 00:05:00
13	Sub-13	0.26	0.9500	0.37	0.35	0.09	1.08	0 00:05:00
14	Sub-14	0.43	0.9500	0.37	0.35	0.15	1.81	0 00:05:00
15	Sub-15	0.16	0.6500	0.37	0.24	0.04	0.46	0 00:05:00
16	Sub-16	0.59	0.9500	0.37	0.35	0.21	2.46	0 00:05:00
17	Sub-17	1.39	0.9500	0.37	0.35	0.48	5.82	0 00:05:00
18	Sub-18	0.69	0.9500	0.37	0.35	0.24	2.89	0 00:05:00
19	Sub-19	0.70	0.9500	0.37	0.35	0.24	2.94	0 00:05:00
20	Sub-20	0.09	0.8000	0.37	0.29	0.03	0.33	0 00:05:00
21	Sub-21	0.03	0.6500	0.37	0.24	0.01	0.08	0 00:05:00
22	Sub-22	0.13	0.6500	0.37	0.24	0.03	0.38	0 00:05:00
23	Sub-23	0.08	0.6500	0.37	0.24	0.02	0.23	0 00:05:00
24	Sub-24	0.75	0.9500	0.37	0.35	0.26	3.13	0 00:05:00
25	Sub-25	0.78	0.9500	0.37	0.35	0.27	3.25	0 00:05:00
26	Sub-26	0.67	0.9500	0.37	0.35	0.23	2.79	0 00:05:00
27	Sub-27	1.32	0.9500	0.37	0.35	0.46	5.50	0 00:05:00
28	Sub-28	0.05	0.6500	0.37	0.24	0.01	0.15	0 00:05:00
29	Sub-29	0.22	0.9500	0.37	0.35	0.08	0.93	0 00:05:00
30	Sub-30	1.09	0.9500	0.37	0.35	0.38	4.54	0 00:05:00
31	Sub-31	0.84	0.9500	0.37	0.35	0.29	3.51	0 00:05:00
32	Sub-32	0.13	0.8000	0.37	0.29	0.04	0.46	0 00:05:00
33	Sub-33	0.40	0.9500	0.37	0.35	0.14	1.69	0 00:05:00
34	Sub-34	0.21	0.9500	0.37	0.35	0.07	0.86	0 00:05:00
35	Sub-35	0.16	0.9500	0.37	0.35	0.06	0.67	0 00:05:00
36	Sub-36	0.46	0.7500	0.37	0.28	0.13	1.52	0 00:05:00
37	Sub-37	0.98	0.9500	0.37	0.35	0.34	4.11	0 00:05:00
38	Sub-38	0.30	0.7500	0.37	0.28	0.08	0.98	0 00:05:00
39	Sub-39	0.72	0.9500	0.37	0.35	0.25	3.02	0 00:05:00
40	Sub-40	1.00	0.9500	0.37	0.35	0.35	4.18	0 00:05:00
41	Sub-41	0.41	0.9500	0.37	0.35	0.14	1.72	0 00:05:00
42	Sub-42	0.46	0.9500	0.37	0.35	0.16	1.93	0 00:05:00
43	Sub-43	0.13	0.9500	0.37	0.35	0.05	0.55	0 00:05:00
44	Sub-44	0.45	0.9500	0.37	0.35	0.16	1.88	0 00:05:00
45	Sub-45	0.41	0.9500	0.37	0.35	0.14	1.70	0 00:05:00
46	Sub-46	0.09	0.9500	0.37	0.35	0.03	0.36	0 00:05:00
47	Sub-47	0.06	0.7000	0.37	0.26	0.02	0.19	0 00:05:00
48	Sub-48	0.02	0.7500	0.37	0.28	0.01	0.06	0 00:05:00
49	Sub-49	0.12	0.7000	0.37	0.26	0.03	0.36	0 00:05:00
50	Sub-50	0.72	0.9500	0.37	0.35	0.25	3.01	0 00:05:00
51	Sub-51	0.57	0.9500	0.37	0.35	0.20	2.37	0 00:05:00
52	Sub-52	0.70	0.9500	0.37	0.35	0.24	2.94	0 00:05:00
53	Sub-53	0.13	0.9500	0.37	0.35	0.04	0.53	0 00:05:00
54	Sub-54	0.10	0.9500	0.37	0.35	0.03	0.40	0 00:05:00
55	Sub-55	0.17	0.9500	0.37	0.35	0.06	0.72	0 00:05:00
56	Sub-56	0.58	0.9500	0.37	0.35	0.20	2.44	0 00:05:00
57	Sub-57	1.35	0.9500	0.37	0.35	0.47	5.66	0 00:05:00

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	237.50	240.00	0.00	6.00	0.00	0.52	237.70	0.00	2.30	0 00:00	0.00	0.00
2	Jun-02	Junction	221.49	228.17	0.00	6.00	0.00	3.23	221.88	0.00	6.29	0 00:00	0.00	0.00
3	Jun-03	Junction	217.17	223.67	0.00	6.00	0.00	3.23	217.56	0.00	6.11	0 00:00	0.00	0.00
4	Jun-04	Junction	212.02	219.26	0.00	6.00	0.00	5.30	212.53	0.00	6.73	0 00:00	0.00	0.00
5	Jun-05	Junction	209.79	217.29	0.00	6.00	0.00	6.67	210.57	0.00	6.72	0 00:00	0.00	0.00
6	Jun-06	Junction	208.15	215.78	0.00	6.00	0.00	6.67	208.93	0.00	6.85	0 00:00	0.00	0.00
7	Jun-07	Junction	206.11	213.31	0.00	6.00	0.00	6.67	206.87	0.00	6.44	0 00:00	0.00	0.00
8	Jun-08	Junction	226.00	229.00	0.00	6.00	0.00	2.08	226.27	0.00	2.73	0 00:00	0.00	0.00
9	Jun-09	Junction	214.00	217.00	0.00	6.00	0.00	2.08	214.29	0.00	2.71	0 00:00	0.00	0.00
10	Jun-10	Junction	207.89	215.09	0.00	6.00	0.00	2.08	208.18	0.00	6.91	0 00:00	0.00	0.00
11	Jun-11	Junction	194.26	215.00	0.00	6.00	0.00	9.18	195.35	0.00	19.65	0 00:00	0.00	0.00
12	Jun-12	Junction	192.00	214.91	0.00	6.00	0.00	10.10	193.09	0.00	21.82	0 00:00	0.00	0.00
13	Jun-13	Junction	190.00	213.28	0.00	6.00	0.00	10.77	191.03	0.00	22.25	0 00:00	0.00	0.00
14	Jun-14	Junction	188.93	212.93	0.00	6.00	0.00	19.09	189.84	0.00	23.09	0 00:00	0.00	0.00
15	Jun-15	Junction	180.12	191.00	0.00	6.00	0.00	23.21	181.21	0.00	9.79	0 00:00	0.00	0.00
16	Jun-16	Junction	167.26	182.00	0.00	6.00	0.00	26.89	170.58	0.00	11.42	0 00:00	0.00	0.00
17	Jun-17	Junction	166.78	182.00	0.00	6.00	0.00	26.89	168.54	0.00	13.46	0 00:00	0.00	0.00
18	Jun-18	Junction	166.04	173.48	0.00	6.00	0.00	27.75	167.80	0.00	5.68	0 00:00	0.00	0.00
19	Jun-19	Junction	172.65	179.85	0.00	6.00	0.00	0.40	172.84	0.00	7.01	0 00:00	0.00	0.00
20	Jun-20	Junction	167.26	177.60	0.00	6.00	0.00	0.40	167.45	0.00	10.15	0 00:00	0.00	0.00
21	Jun-21	Junction	166.48	174.83	0.00	6.00	0.00	9.47	167.58	0.00	7.25	0 00:00	0.00	0.00
22	Jun-22	Junction	165.81	174.39	0.00	6.00	0.00	32.45	167.49	0.00	6.90	0 00:00	0.00	0.00
23	Jun-23	Junction	165.70	174.50	0.00	6.00	0.00	32.45	167.38	0.00	7.12	0 00:00	0.00	0.00
24	Jun-24	Junction	165.63	174.60	0.00	6.00	0.00	32.45	167.31	0.00	7.29	0 00:00	0.00	0.00
25	Jun-25	Junction	164.88	177.54	0.00	6.00	0.00	32.45	166.56	0.00	10.98	0 00:00	0.00	0.00
26	Jun-26	Junction	160.80	173.00	158.30	173.00	0.00	564.71	164.87	0.00	8.13	0 00:00	0.00	0.00
27	Jun-27	Junction	204.16	211.36	0.00	6.00	0.00	10.75	205.26	0.00	6.10	0 00:00	0.00	0.00
28	Jun-28	Junction	202.24	209.44	0.00	6.00	0.00	15.11	203.34	0.00	6.10	0 00:00	0.00	0.00
29	Jun-29	Junction	199.67	206.87	0.00	6.00	0.00	23.07	200.88	0.00	5.99	0 00:00	0.00	0.00
30	Jun-30	Junction	198.21	205.41	0.00	6.00	0.00	23.07	199.51	0.00	5.90	0 00:00	0.00	0.00
31	Jun-31	Junction	196.19	203.39	0.00	6.00	0.00	23.46	197.49	0.00	5.90	0 00:00	0.00	0.00
32	Jun-32	Junction	200.57	204.07	0.00	6.00	0.00	19.18	201.67	0.00	2.40	0 00:00	0.00	0.00
33	Jun-33	Junction	190.98	198.18	0.00	6.00	0.00	31.02	192.85	0.00	5.33	0 00:00	0.00	0.00
34	Jun-34	Junction	187.23	197.73	0.00	0.00	0.00	38.05	189.24	0.00	8.49	0 00:00	0.00	0.00
35	Jun-35	Junction	182.33	201.24	0.00	0.00	0.00	44.80	184.35	0.00	16.89	0 00:00	0.00	0.00
36	Jun-36	Junction	182.19	203.42	0.00	0.00	0.00	44.80	184.21	0.00	19.21	0 00:00	0.00	0.00
37	Jun-37	Junction	181.07	202.81	0.00	0.00	0.00	44.80	183.07	0.00	19.74	0 00:00	0.00	0.00
38	Jun-38	Junction	174.50	195.50	174.50	195.50	0.00	407.33	195.50	0.00	0.00	0 00:06	2.39	8.00
39	Jun-39	Junction	190.84	199.18	0.00	0.00	0.00	1.18	191.10	0.00	8.08	0 00:00	0.00	0.00
40	Jun-40	Junction	199.50	202.60	0.00	0.00	0.00	15.88	200.47	0.00	2.13	0 00:00	0.00	0.00
41	Jun-41	Junction	198.00	201.00	0.00	0.00	0.00	15.88	199.08	0.00	1.92	0 00:00	0.00	0.00
42	Jun-42	Junction	185.10	194.10	0.00	0.00	0.00	16.64	195.18	0.00	0.42	0 00:00	0.00	0.00
43	Jun-43	Junction	184.38	192.50	0.00	0.00	0.00	21.94	185.99	0.00	6.51	0 00:00	0.00	0.00
44	Jun-44	Junction	184.31	192.40	0.00	0.00	0.00	21.94	185.92	0.00	6.48	0 00:00	0.00	0.00
45	Jun-45	Junction	183.72	190.75	0.00	0.00	0.00	21.94	185.31	0.00	5.44	0 00:00	0.00	0.00
46	Jun-46	Junction	175.20	185.00	0.00	0.00	0.00	21.94	176.22	0.00	8.78	0 00:00	0.00	0.00
47	Jun-47	Junction	170.03	185.50	170.03	185.50	0.00	390.54	185.50	0.00	0.00	0 00:05	0.34	6.00
48	Jun-48	Junction	181.00	198.00	181.00	198.00	0.00	363.58	185.45	0.00	12.55	0 00:00	0.00	0.00
49	Jun-49	Junction	168.53	181.90	168.53	181.90	0.00	478.61	174.03	0.00	7.87	0 00:00	0.00	0.00
50	Jun-60	Junction	174.97	196.10	174.97	196.10	0.00	363.58	179.42	0.00	16.68	0 00:00	0.00	0.00
51	Out-01	Outfall	154.39					564.71	158.46					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-001	Pipe	Inlet-01	Inlet-02	55.58	238.00	237.50	0.9000	12.000	0.0130	0.59	3.38	0.18	3.23	0.28	0.28	0.00	Calculated
2	Link-002	Pipe	Inlet-02	Inlet-04	113.65	237.50	232.00	4.8400	12.000	0.0130	0.92	7.84	0.12	6.66	0.23	0.23	0.00	Calculated
3	Link-003	Pipe	Inlet-03	Jun-01	17.26	238.00	237.50	2.9000	12.000	0.0130	0.52	6.06	0.09	4.72	0.20	0.20	0.00	Calculated
4	Link-004	Pipe	Jun-01	Inlet-04	38.35	237.50	232.00	14.3400	12.000	0.0130	0.52	13.49	0.04	8.27	0.13	0.13	0.00	Calculated
5	Link-005	Pipe	Inlet-04	Jun-02	83.65	232.00	221.49	12.5600	12.000	0.0130	1.83	12.63	0.14	11.45	0.26	0.26	0.00	Calculated
6	Link-006	Pipe	Inlet-05	Jun-02	58.80	226.45	221.49	8.4400	18.000	0.0130	1.40	30.51	0.05	8.80	0.22	0.15	0.00	Calculated
7	Link-007	Pipe	Jun-02	Jun-03	98.45	221.49	217.17	4.3900	18.000	0.0130	3.23	22.00	0.15	8.90	0.39	0.26	0.00	Calculated
8	Link-008	Pipe	Jun-03	Jun-04	116.67	217.17	212.02	4.4100	18.000	0.0130	3.23	22.07	0.15	8.92	0.39	0.26	0.00	Calculated
9	Link-009	Pipe	Inlet-06	Jun-04	8.25	212.10	212.02	0.9700	18.000	0.0130	2.07	10.34	0.20	4.57	0.46	0.30	0.00	Calculated
10	Link-010	Pipe	Jun-04	Jun-05	52.76	212.02	209.79	4.2300	18.000	0.0130	5.30	21.60	0.25	10.09	0.51	0.34	0.00	Calculated
11	Link-011	Pipe	Inlet-07	Jun-05	28.25	210.27	209.79	1.7000	18.000	0.0130	1.37	13.69	0.10	4.96	0.32	0.21	0.00	Calculated
12	Link-012	Pipe	Jun-05	Jun-06	114.02	209.79	208.15	1.4400	18.000	0.0130	6.67	12.60	0.53	7.23	0.78	0.52	0.00	Calculated
13	Link-013	Pipe	Jun-06	Jun-07	131.40	208.15	206.11	1.5500	18.000	0.0130	6.67	13.09	0.51	7.44	0.76	0.51	0.00	Calculated
14	Link-014	Pipe	Jun-07	Jun-14	30.08	206.11	188.93	57.1100	18.000	0.0130	6.67	79.39	0.08	27.31	0.29	0.20	0.00	Calculated
15	Link-015	Pipe	Inlet-08	Inlet-09	69.16	237.50	236.50	1.4500	12.000	0.0130	0.38	4.28	0.09	3.36	0.20	0.20	0.00	Calculated
16	Link-016	Pipe	Inlet-09	Inlet-10	45.66	236.50	236.00	1.1000	12.000	0.0130	0.76	3.73	0.20	3.73	0.31	0.31	0.00	Calculated
17	Link-017	Pipe	Inlet-10	Inlet-11	75.35	236.00	235.00	1.3300	12.000	0.0130	1.60	4.10	0.39	4.90	0.43	0.43	0.00	Calculated
18	Link-018	Pipe	Inlet-11	Jun-08	66.03	235.00	226.00	13.6300	12.000	0.0130	2.08	13.15	0.16	12.23	0.27	0.27	0.00	Calculated
19	Link-019	Pipe	Jun-08	Jun-09	40.66	226.00	214.00	29.5100	18.000	0.0130	2.08	57.07	0.04	15.34	0.20	0.13	0.00	Calculated
20	Link-020	Pipe	Jun-09	Jun-10	97.25	214.00	207.89	6.2800	18.000	0.0130	2.08	26.33	0.08	8.91	0.29	0.19	0.00	Calculated
21	Link-021	Pipe	Jun-10	Jun-12	17.00	207.89	192.00	93.4700	18.000	0.0130	2.08	101.56	0.02	22.00	0.15	0.10	0.00	Calculated
22	Link-022	Pipe	Inlet-12	Jun-11	38.85	194.65	194.26	1.0000	18.000	0.0130	9.18	10.52	0.87	6.71	1.08	0.72	0.00	Calculated
23	Link-023	Pipe	Jun-11	Jun-12	226.46	194.26	192.00	1.0000	18.000	0.0130	9.18	10.49	0.87	6.69	1.09	0.72	0.00	Calculated
24	Link-024	Pipe	Jun-12	Jun-13	144.08	192.00	190.00	1.3900	18.000	0.0130	10.10	12.38	0.82	7.81	1.03	0.69	0.00	Calculated
25	Link-025	Pipe	Inlet-13	Jun-13	16.79	206.29	189.28	101.3100	18.000	0.0130	1.18	103.47	0.01	19.50	0.11	0.08	0.00	Calculated
26	Link-026	Pipe	Jun-13	Jun-14	48.04	190.00	188.93	2.2300	18.000	0.0130	10.77	15.68	0.69	9.55	0.91	0.61	0.00	Calculated
27	Link-027	Pipe	Inlet-14	Jun-14	38.44	205.20	188.93	42.3300	18.000	0.0130	9.00	68.34	0.13	26.81	0.37	0.25	0.00	Calculated
28	Link-028	Pipe	Jun-14	Jun-15	133.50	188.93	180.12	6.6000	30.000	0.0130	19.09	105.37	0.18	16.23	0.72	0.29	0.00	Calculated
29	Link-029	Pipe	Inlet-15	Jun-15	175.28	181.85	180.12	0.9900	18.000	0.0130	9.14	10.44	0.88	6.65	1.09	0.73	0.00	Calculated
30	Link-030	Pipe	Jun-15	Jun-16	191.94	180.12	169.41	5.5800	30.000	0.0130	23.21	96.89	0.24	16.20	0.83	0.33	0.00	Calculated
31	Link-031	Pipe	Inlet-16	Jun-16	216.71	169.41	167.26	0.9900	18.000	0.0130	9.25	10.46	0.88	6.68	1.10	0.73	0.00	Calculated
32	Link-032	Pipe	Jun-16	Jun-17	122.48	169.41	166.78	2.1500	30.000	0.0130	26.89	60.11	0.45	11.90	1.17	0.47	0.00	Calculated
33	Link-033	Pipe	Jun-17	Jun-18	123.23	166.78	166.04	0.6000	30.000	0.0130	26.89	31.79	0.85	7.26	1.76	0.71	0.00	Calculated
34	Link-034	Pipe	Inlet-17	Inlet-18	64.61	209.50	184.90	38.0700	12.000	0.0130	0.33	21.98	0.01	10.13	0.09	0.09	0.00	Calculated
35	Link-035	Pipe	Inlet-18	Inlet-19	154.66	184.90	174.00	7.0500	12.000	0.0130	0.40	9.46	0.04	6.01	0.14	0.14	0.00	Calculated
36	Link-036	Pipe	Inlet-19	Inlet-20	94.52	174.00	170.50	3.7000	12.000	0.0130	0.55	6.86	0.08	5.25	0.19	0.19	0.00	Calculated
37	Link-037	Pipe	Inlet-20	Jun-18	18.56	170.50	166.04	24.0300	12.000	0.0130	2.57	17.47	0.15	15.91	0.26	0.26	0.00	Calculated
38	Link-038	Pipe	Jun-18	Jun-22	23.47	166.04	165.81	0.9800	30.000	0.0130	27.75	40.60	0.68	8.90	1.52	0.61	0.00	Calculated
39	Link-039	Pipe	Inlet-21	Jun-19	12.78	172.80	172.65	1.1700	18.000	0.0130	0.40	11.38	0.04	3.03	0.19	0.13	0.00	Calculated
40	Link-040	Pipe	Jun-19	Jun-20	176.50	172.65	167.26	3.0500	18.000	0.0130	0.40	18.36	0.02	4.00	0.16	0.11	0.00	Calculated
41	Link-041	Pipe	Jun-20	Jun-21	67.35	167.26	166.48	1.1600	18.000	0.0130	0.40	11.30	0.04	3.02	0.19	0.13	0.00	Calculated
42	Link-042	Pipe	Inlet-22	Jun-21	173.64	168.20	166.48	0.9900	18.000	0.0130	9.25	10.45	0.88	6.68	1.10	0.73	0.00	Calculated
43	Link-043	Pipe	Jun-21	Jun-22	12.67	166.48	165.81	5.2900	18.000	0.0130	9.47	24.16	0.39	12.83	0.65	0.44	0.00	Calculated
44	Link-044	Pipe	Inlet-23	Jun-22	8.62	167.33	165.81	17.6300	18.000	0.0130	1.35	44.11	0.03	11.29	0.18	0.12	0.00	Calculated
45	Link-045	Pipe	Jun-22	Jun-23	11.02	165.81	165.70	1.0000	30.000	0.0130	32.45	40.98	0.79	9.26	1.68	0.67	0.00	Calculated
46	Link-046	Pipe	Jun-23	Jun-24	6.68	165.70	165.63	1.0500	30.000	0.0130	32.45	41.99	0.77	9.44	1.65	0.66	0.00	Calculated
47	Link-047	Pipe	Jun-24	Jun-25	75.00	165.63	164.88	1.0000	30.000	0.0130	32.45	41.02	0.79	9.27	1.68	0.67	0.00	Calculated
48	Link-048	Pipe	Jun-25	Inlet-24	56.74	164.88	161.78	5.4600	30.000	0.0130	32.45	95.87	0.34	17.63	1.00	0.40	0.00	Calculated
49	Link-049	Pipe	Inlet-24	Jun-26	24.42	161.78	161.30	1.9700	36.000	0.0130	87.24	93.51	0.93	15.02	2.30	0.77	0.00	Calculated
50	Link-050	Pipe	Inlet-25	Jun-27	31.28	211.20	204.16	22.5100	18.000	0.0130	2.02	49.83	0.04	13.82	0.21	0.14	0.00	Calculated
51	Link-051	Pipe	Inlet-26	Jun-27	112.71	205.27	204.16	0.9800	18.000	0.0130	9.24	10.42	0.89	6.66	1.10	0.73	0.00	Calculated
52	Link-052	Pipe	Jun-27	Jun-28	120.19	204.16	202.24	1.6000	18.000	0.0130	10.75	13.28	0.81	8.36	1.02	0.68	0.00	Calculated
53	Link-053	Pipe	Inlet-27	Jun-28	187.56	204.10	202.24	0.9900	18.000	0.0130	9.25	10.46	0.88	6.68	1.10	0.73	0.00	Calculated
54	Link-054	Pipe	Jun-28	Jun-29	193.82	202.24	199.67	1.3300	24.000	0.0130	15.11	26.05	0.58	8.59	1.09	0.55	0.00	Calculated
55	Link-055	Pipe	Inlet-28	Jun-29	149.83	201.15	199.67	0.9900	18.000	0.0130	9.22	10.44	0.88	6.67	1.10	0.73	0.00	Calculated
56	Link-056	Pipe	Inlet-29	Jun-29	30.75	202.74	199.67	9.9800	18.000	0.0130	2.56	33.19	0.08	11.14	0.28	0.19	0.00	Calculated
57	Link-057	Pipe	Jun-29	Jun-30	64.91	199.67	198.21	2.2500	24.000	0.0130	23.07	33.93	0.68	11.60	1.21	0.61	0.00	Calculated
58	Link-058	Pipe	Jun-30	Jun-31	110.75	198.21	196.19	1.8200	24.000	0.0130	23.07	30.55	0.75	10.69	1.30	0.65	0.00	Calculated

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
59	Link-059	Pipe	Inlet-30	Jun-31	7.25	196.69	196.19	6.9000	18.000	0.0130	0.54	27.59	0.02	5.95	0.15	0.10	0.00	Calculated
60	Link-060	Pipe	Jun-31	Jun-33	179.75	196.19	190.98	2.9000	24.000	0.0130	23.46	38.51	0.61	12.85	1.13	0.56	0.00	Calculated
61	Link-061	Pipe	Inlet-31	Inlet-32	127.53	212.00	210.43	1.2300	18.000	0.0130	9.09	11.66	0.78	7.29	1.00	0.66	0.00	Calculated
62	Link-062	Pipe	Inlet-32	Inlet-33	126.91	210.43	206.67	2.9600	18.000	0.0130	9.48	18.08	0.52	10.35	0.77	0.51	0.00	Calculated
63	Link-063	Pipe	Inlet-33	Jun-32	125.83	206.67	200.57	4.8500	18.000	0.0130	9.80	23.13	0.42	12.55	0.68	0.45	0.00	Calculated
64	Link-064	Pipe	Inlet-34	Jun-32	98.51	201.55	200.57	0.9900	18.000	0.0130	9.24	10.48	0.88	6.69	1.10	0.73	0.00	Calculated
65	Link-065	Pipe	Inlet-35	Jun-32	10.48	200.89	200.57	3.0500	18.000	0.0130	0.23	18.36	0.01	3.59	0.12	0.08	0.00	Calculated
66	Link-066	Pipe	Jun-32	Inlet-36	98.83	200.57	191.80	8.8700	18.000	0.0130	19.18	31.29	0.61	18.59	0.85	0.57	0.00	Calculated
67	Link-067	Pipe	Inlet-36	Jun-33	19.25	191.80	190.98	4.2600	18.000	0.0130	19.56	21.68	0.90	13.88	1.12	0.74	0.00	Calculated
68	Link-068	Pipe	Jun-33	Inlet-37	7.25	190.98	190.93	0.6900	30.000	0.0130	31.02	34.06	0.91	7.86	1.87	0.75	0.00	Calculated
69	Link-069	Pipe	Inlet-37	Inlet-38	32.50	190.93	190.70	0.7100	30.000	0.0130	31.53	34.51	0.91	7.97	1.88	0.75	0.00	Calculated
70	Link-070	Pipe	Inlet-38	Inlet-40	243.45	190.70	189.00	0.7000	30.000	0.0130	31.74	34.28	0.93	7.93	1.90	0.76	0.00	Calculated
71	Link-071	Pipe	Inlet-39	Inlet-40	204.13	191.03	189.00	0.9900	18.000	0.0130	9.18	10.48	0.88	6.68	1.09	0.73	0.00	Calculated
72	Link-072	Pipe	Inlet-40	Jun-34	197.21	189.00	187.23	0.9000	30.000	0.0130	38.05	38.86	0.98	9.02	2.00	0.80	0.00	Calculated
73	Link-073	Pipe	Jun-34	Inlet-42	87.10	187.23	186.45	0.9000	30.000	0.0130	38.05	38.82	0.98	9.01	2.01	0.80	0.00	Calculated
74	Link-074	Pipe	Inlet-41	Inlet-42	141.31	187.85	186.45	0.9900	18.000	0.0130	9.25	10.46	0.88	6.68	1.10	0.73	0.00	Calculated
75	Link-075	Pipe	Inlet-42	Inlet-43	173.88	186.45	184.46	1.1400	30.000	0.0130	43.67	43.88	1.00	10.19	2.04	0.82	0.00	Calculated
76	Link-076	Pipe	Inlet-43	Inlet-45	94.56	184.46	183.33	1.2000	30.000	0.0130	44.46	44.84	0.99	10.41	2.03	0.81	0.00	Calculated
77	Link-077	Pipe	Inlet-44	Inlet-45	50.21	183.82	183.33	0.9800	18.000	0.0130	0.36	10.38	0.03	2.74	0.19	0.13	0.00	Calculated
78	Link-078	Pipe	Inlet-45	Inlet-46	52.80	183.33	182.67	1.2500	30.000	0.0130	44.77	45.86	0.98	10.64	2.00	0.80	0.00	Calculated
79	Link-079	Pipe	Inlet-46	Jun-35	27.22	182.67	182.33	1.2500	30.000	0.0130	44.80	45.84	0.98	10.64	2.00	0.80	0.00	Calculated
80	Link-080	Pipe	Jun-35	Jun-36	11.46	182.33	182.19	1.2200	30.000	0.0130	44.80	45.34	0.99	10.53	2.02	0.81	0.00	Calculated
81	Link-081	Pipe	Jun-36	Jun-37	89.60	182.19	181.07	1.2500	30.000	0.0130	44.80	45.86	0.98	10.64	2.00	0.80	0.00	Calculated
82	Link-082	Pipe	Jun-37	Inlet-47	75.85	181.07	179.20	2.4700	30.000	0.0130	44.80	64.40	0.70	14.17	1.54	0.61	0.00	Calculated
83	Link-083	Pipe	Inlet-47	Jun-38	24.25	179.20	175.48	15.3400	30.000	0.0130	46.54	160.65	0.29	28.33	0.92	0.37	0.00	Calculated
84	Link-084	Pipe	Inlet-48	Jun-39	65.11	194.45	190.84	5.5400	18.000	0.0130	1.18	24.73	0.05	7.21	0.22	0.15	0.00	Calculated
85	Link-085	Pipe	Jun-39	Inlet-51	147.47	190.84	186.30	3.0800	18.000	0.0130	1.18	18.43	0.06	5.79	0.26	0.17	0.00	Calculated
86	Link-086	Pipe	Inlet-49	Inlet-50	69.53	191.96	191.27	0.9900	18.000	0.0130	0.54	10.46	0.05	3.12	0.23	0.15	0.00	Calculated
87	Link-087	Pipe	Inlet-50	Inlet-51	39.76	191.27	186.30	12.5000	18.000	0.0130	0.90	37.14	0.02	8.19	0.17	0.11	0.00	Calculated
88	Link-088	Pipe	Inlet-51	Inlet-56	32.49	186.30	184.62	5.1700	18.000	0.0130	4.66	23.89	0.19	10.47	0.45	0.30	0.00	Calculated
89	Link-089	Pipe	Inlet-52	Inlet-53	81.17	207.55	206.75	0.9900	18.000	0.0130	9.12	10.43	0.87	6.65	1.09	0.73	0.00	Calculated
90	Link-090	Pipe	Inlet-53	Jun-40	120.67	206.75	199.50	6.0100	18.000	0.0130	15.88	25.75	0.62	15.32	0.85	0.57	0.00	Calculated
91	Link-091	Pipe	Jun-40	Jun-41	37.45	199.50	198.00	4.0100	18.000	0.0130	15.88	21.02	0.76	13.07	0.97	0.65	0.00	Calculated
92	Link-092	Pipe	Jun-41	Jun-42	129.75	198.00	194.10	3.0100	18.000	0.0130	15.88	18.21	0.87	11.61	1.08	0.72	0.00	Calculated
93	Link-093	Pipe	Inlet-54	Inlet-55	29.87	187.40	186.70	2.3400	18.000	0.0130	0.71	16.08	0.04	4.60	0.21	0.14	0.00	Calculated
94	Link-094	Pipe	Inlet-55	Jun-42	153.76	186.70	185.10	1.0400	18.000	0.0130	1.23	10.72	0.11	4.02	0.34	0.23	0.00	Calculated
95	Link-095	Pipe	Jun-42	Inlet-56	48.47	185.10	184.62	0.9900	24.000	0.0130	16.64	22.51	0.74	7.84	1.28	0.64	0.00	Calculated
96	Link-096	Pipe	Inlet-56	Jun-43	23.96	184.62	184.38	1.0000	24.000	0.0130	21.94	22.64	0.97	8.21	1.59	0.79	0.00	Calculated
97	Link-097	Pipe	Jun-43	Jun-44	7.15	184.38	184.31	0.9800	24.000	0.0130	21.94	22.38	0.98	8.12	1.61	0.80	0.00	Calculated
98	Link-098	Pipe	Jun-44	Jun-45	59.00	184.31	183.72	1.0000	24.000	0.0130	21.94	22.62	0.97	8.20	1.59	0.79	0.00	Calculated
99	Link-099	Pipe	Jun-45	Jun-46	145.17	183.72	175.20	5.8700	24.000	0.0130	21.94	54.80	0.40	16.48	0.88	0.44	0.00	Calculated
100	Link-100	Pipe	Jun-46	Jun-47	48.21	175.20	173.53	3.4600	24.000	0.0130	21.94	42.10	0.52	13.54	1.02	0.51	0.00	Calculated
101	Link-101	Pipe	Inlet-57	Jun-48	18.19	182.00	181.00	5.5000	18.000	0.0130	6.58	24.63	0.27	11.80	0.53	0.35	0.00	Calculated
102	Link-102	Pipe	Jun-48	Jun-60	501.00	181.00	174.97	1.2000	66.000	0.0130	363.58	368.41	0.99	17.67	4.45	0.81	0.00	Calculated
103	Link-103	Pipe	Jun-38	Jun-47	371.00	174.50	170.03	1.2000	66.000	0.0130	368.60	368.60	1.00	17.69	5.50	1.00	8.00	SURCHARGED
104	Link-104	Pipe	Jun-47	Jun-49	118.00	170.03	168.53	1.2700	66.000	0.0130	378.61	378.61	1.00	18.17	5.50	1.00	4.00	SURCHARGED
105	Link-105	Pipe	Jun-49	Jun-26	220.00	168.53	160.80	3.5100	66.000	0.0130	478.61	629.46	0.76	29.16	3.59	0.65	0.00	Calculated
106	Link-106	Pipe	Jun-26	Out-01	182.00	160.80	154.39	3.5200	66.000	0.0130	564.71	630.21	0.90	29.98	4.07	0.74	0.00	Calculated
107	Link-121	Pipe	Jun-60	Jun-38	39.20	174.97	174.50	1.2000	66.000	0.0130	363.58	367.70	0.99	17.64	4.45	0.81	0.00	Calculated
108	Link-107	Channel	Inlet-05	Inlet-06	269.49	231.97	219.64	4.5800	6.000	0.0320	1.22	13.85	0.09	2.22	0.11	0.22	0.00	
109	Link-108	Channel	Inlet-06	Inlet-07	59.13	219.64	216.84	4.7400	6.000	0.0320	0.23	14.09	0.02	1.16	0.04	0.08	0.00	
110	Link-109	Channel	Inlet-07	Inlet-25	218.27	216.84	207.20	4.4200	6.000	0.0320	0.66	10.41	0.06	1.47	0.09	0.18	0.00	
111	Link-110	Channel	Inlet-13	Inlet-14	61.99	213.49	212.40	1.7600	6.000	0.0320	0.71	8.59	0.08	1.34	0.11	0.21	0.00	
112	Link-111	Channel	Inlet-23	Inlet-20	42.00	174.53	173.50	2.4500	6.000	0.0320	1.09	10.14	0.11	1.75	0.12	0.25	0.00	
113	Link-112	Channel	Inlet-25	Inlet-29	315.67	207.20	206.74	0.1500	6.000	0.0320	1.11	8.52	0.13	1.59	0.14	0.28	0.00	
114	Link-113	Channel	Inlet-29	Inlet-56	368.16	206.74	192.87	3.7700	6.000	0.0320	1.34	12.57	0.11	2.17	0.12	0.25	0.00	
115	Link-114	Channel	Inlet-30	Inlet-38	184.49	203.89	197.90	3.2500	6.000	0.0320	0.12	11.67	0.01	0.80	0.03	0.06	0.00	
116	Link-115	Channel	Inlet-37	Inlet-38	51.26	198.54	197.90	1.2500	6.000	0.0320	0.16	7.24	0.02	0.67	0.05	0.09	0.00	

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
117	Link-116	Channel	Inlet-43	Inlet-47	300.26	199.24	195.32	1.3100	6.000	0.0320	0.60	7.40	0.08	1.14	0.10	0.21	0.00	
118	Link-117	Channel	Inlet-47	Inlet-51	73.54	195.32	193.50	2.4700	6.000	0.0320	0.68	10.19	0.07	1.46	0.09	0.19	0.00	
119	Link-118	Channel	Inlet-48	Inlet-51	197.18	194.45	193.50	0.4800	6.000	0.0320	0.71	13.17	0.05	1.74	0.08	0.16	0.00	
120	Link-119	Channel	Inlet-51	Inlet-56	44.38	193.50	192.87	1.4200	6.000	0.0320	0.74	7.72	0.10	1.27	0.12	0.23	0.00	
121	Link-120	Channel	Inlet-56	Inlet-24	678.72	192.87	174.85	2.6500	6.000	0.0320	2.40	10.55	0.23	2.44	0.20	0.39	0.00	

Inlet Summary

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Initial Water Elevation (ft)	Ponded Area (ft²)	Peak Flow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Allowable Spread (ft)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)
1	Inlet-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	238.00	240.00	0.00	10.00	0.60	N/A	N/A	N/A	7.00	1.20	240.17
2	Inlet-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	237.50	240.00	0.00	10.00	0.33	N/A	N/A	N/A	7.00	0.66	240.10
3	Inlet-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	238.00	240.00	0.00	10.00	0.53	N/A	N/A	N/A	7.00	1.06	240.15
4	Inlet-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	232.00	234.00	0.00	10.00	0.40	N/A	N/A	N/A	7.00	0.80	234.11
5	Inlet-05	FHWA HEC-22 GENERIC	N/A	On Grade	1	226.45	231.97	0.00	N/A	2.62	1.40	1.22	53.42	7.00	9.61	232.25
6	Inlet-06	FHWA HEC-22 GENERIC	N/A	On Grade	1	212.10	219.64	0.00	N/A	1.08	0.85	0.23	78.76	7.00	6.35	219.85
7	Inlet-07	FHWA HEC-22 GENERIC	N/A	On Grade	1	210.27	216.84	0.00	N/A	1.81	1.14	0.66	63.35	7.00	8.11	217.09
8	Inlet-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	237.50	240.00	0.00	10.00	0.38	N/A	N/A	N/A	7.00	0.76	240.11
9	Inlet-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	236.50	240.00	0.00	10.00	0.39	N/A	N/A	N/A	7.00	0.78	240.11
10	Inlet-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	236.00	240.00	0.00	10.00	0.84	N/A	N/A	N/A	7.00	1.67	240.24
11	Inlet-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	235.00	240.00	0.00	10.00	0.50	N/A	N/A	N/A	7.00	0.99	240.14
12	Inlet-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	194.65	215.00	0.00	10.00	5.88	N/A	N/A	N/A	7.00	18.43	215.98
13	Inlet-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	206.29	213.49	0.00	N/A	1.89	1.18	0.71	62.32	7.00	8.32	213.74
14	Inlet-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	205.20	212.40	0.00	10.00	4.05	N/A	N/A	N/A	7.00	20.71	213.81
15	Inlet-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	181.85	191.00	0.00	10.00	5.82	N/A	N/A	N/A	7.00	18.25	191.93
16	Inlet-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	169.41	180.00	0.00	10.00	5.50	N/A	N/A	N/A	7.00	17.38	181.06
17	Inlet-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	209.50	212.50	0.00	10.00	0.33	N/A	N/A	N/A	7.00	0.65	212.60
18	Inlet-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	184.90	187.90	0.00	10.00	0.08	N/A	N/A	N/A	7.00	0.15	187.92
19	Inlet-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	174.00	180.00	0.00	10.00	0.15	N/A	N/A	N/A	7.00	0.30	180.04
20	Inlet-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	170.50	173.50	0.00	10.00	0.93	N/A	N/A	N/A	7.00	1.87	173.77
21	Inlet-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	172.80	180.00	0.00	10.00	0.40	N/A	N/A	N/A	7.00	3.00	180.16
22	Inlet-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	168.20	180.00	0.00	10.00	4.54	N/A	N/A	N/A	7.00	14.64	181.06
23	Inlet-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	167.33	174.53	0.00	N/A	2.44	1.35	1.09	55.27	7.00	9.31	174.80
24	Inlet-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	161.78	174.85	0.00	10.00	5.66	N/A	N/A	N/A	7.00	11.53	177.17
25	Inlet-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	211.20	207.20	0.00	N/A	2.46	1.36	1.11	54.99	7.00	9.35	212.47
26	Inlet-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	205.27	214.00	0.00	10.00	2.94	N/A	N/A	N/A	7.00	9.66	215.04
27	Inlet-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	204.10	210.00	0.00	10.00	3.51	N/A	N/A	N/A	7.00	11.49	211.05
28	Inlet-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	201.15	210.00	0.00	10.00	3.25	N/A	N/A	N/A	7.00	10.66	211.02
29	Inlet-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	202.74	206.74	0.00	N/A	2.79	1.45	1.34	51.87	7.00	9.89	207.02
30	Inlet-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	196.69	203.89	0.00	N/A	0.67	0.54	0.12	81.76	7.00	4.11	204.03
31	Inlet-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	212.00	214.00	0.00	10.00	2.89	N/A	N/A	N/A	7.00	9.47	214.88
32	Inlet-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	210.43	217.93	0.00	10.00	0.46	N/A	N/A	N/A	7.00	0.91	218.06
33	Inlet-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	206.67	209.67	0.00	10.00	0.38	N/A	N/A	N/A	7.00	0.76	209.78
34	Inlet-34	FHWA HEC-22 GENERIC	N/A	On Sag	1	201.55	210.00	0.00	10.00	3.13	N/A	N/A	N/A	7.00	10.28	211.05
35	Inlet-35	FHWA HEC-22 GENERIC	N/A	On Sag	1	200.89	203.89	0.00	10.00	0.23	N/A	N/A	N/A	7.00	0.46	203.96
36	Inlet-36	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.80	199.00	0.00	10.00	0.46	N/A	N/A	N/A	7.00	3.38	199.18
37	Inlet-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	190.93	198.54	0.00	N/A	0.86	0.70	0.16	81.76	7.00	5.30	198.72
38	Inlet-38	FHWA HEC-22 GENERIC	N/A	On Sag	1	190.70	197.90	0.00	10.00	1.69	N/A	N/A	N/A	7.00	10.41	198.72
39	Inlet-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.03	204.50	0.00	10.00	4.11	N/A	N/A	N/A	7.00	13.40	205.48
40	Inlet-40	FHWA HEC-22 GENERIC	N/A	On Sag	1	189.00	195.50	0.00	10.00	1.52	N/A	N/A	N/A	7.00	1.96	196.04
41	Inlet-41	FHWA HEC-22 GENERIC	N/A	On Sag	1	187.85	203.80	0.00	10.00	3.02	N/A	N/A	N/A	7.00	9.92	204.85
42	Inlet-42	FHWA HEC-22 GENERIC	N/A	On Sag	1	186.45	200.45	0.00	10.00	0.98	N/A	N/A	N/A	7.00	0.28	200.70
43	Inlet-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	184.46	199.24	0.00	N/A	1.70	1.10	0.60	64.82	7.00	7.85	199.48
44	Inlet-44	FHWA HEC-22 GENERIC	N/A	On Sag	1	183.82	204.00	0.00	10.00	0.36	N/A	N/A	N/A	7.00	0.72	204.10
45	Inlet-45	FHWA HEC-22 GENERIC	N/A	On Sag	1	183.33	199.33	0.00	10.00	0.19	N/A	N/A	N/A	7.00	0.05	199.38
46	Inlet-46	FHWA HEC-22 GENERIC	N/A	On Sag	1	182.67	195.67	0.00	10.00	0.06	N/A	N/A	N/A	7.00	0.02	195.69
47	Inlet-47	FHWA HEC-22 GENERIC	N/A	On Grade	1	179.20	195.32	0.00	N/A	3.01	2.33	0.68	77.36	7.00	10.25	195.61
48	Inlet-48	FHWA HEC-22 GENERIC	N/A	On Grade	1	194.45	201.65	0.00	N/A	1.88	1.18	0.71	62.39	7.00	8.30	201.90
49	Inlet-49	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.96	204.00	0.00	10.00	0.55	N/A	N/A	N/A	7.00	1.10	204.16
50	Inlet-50	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.27	194.27	0.00	10.00	0.36	N/A	N/A	N/A	7.00	0.72	194.37
51	Inlet-51	FHWA HEC-22 GENERIC	N/A	On Grade	1	186.30	193.50	0.00	N/A	1.93	1.19	0.74	61.85	7.00	8.42	193.75
52	Inlet-52	FHWA HEC-22 GENERIC	N/A	On Sag	1	207.55	210.00	0.00	10.00	2.94	N/A	N/A	N/A	7.00	9.64	210.92
53	Inlet-53	FHWA HEC-22 GENERIC	N/A	On Sag	1	206.75	209.75	0.00	10.00	2.37	N/A	N/A	N/A	7.00	7.61	210.73
54	Inlet-54	FHWA HEC-22 GENERIC	N/A	On Sag	1	187.40	190.40	0.00	10.00	0.72	N/A	N/A	N/A	7.00	1.43	190.61
55	Inlet-55	FHWA HEC-22 GENERIC	N/A	On Sag	1	186.70	190.70	0.00	10.00	0.53	N/A	N/A	N/A	7.00	1.06	190.85
56	Inlet-56	FHWA HEC-22 GENERIC	N/A	On Grade	1	184.62	192.87	0.00	N/A	4.18	1.77	2.40	42.45	7.00	11.74	193.19
57	Inlet-57	FHWA HEC-22 GENERIC	N/A	On Sag	1	182.00	197.80	0.00	10.00	1.72	N/A	N/A	N/A	7.00	10.56	198.64

Junction Input

SN	Element ID	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Ground/Rim (Max) Offset (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Surcharge Elevation (ft)	Surcharge Depth (ft)	Ponded Area (ft²)	Minimum Pipe Cover (in)
1	Jun-01	237.50	240.00	2.50	0.00	-237.50	6.00	-234.00	0.00	0.00
2	Jun-02	221.49	228.17	6.68	0.00	-221.49	6.00	-222.17	0.00	0.00
3	Jun-03	217.17	223.67	6.50	0.00	-217.17	6.00	-217.67	0.00	0.00
4	Jun-04	212.02	219.26	7.24	0.00	-212.02	6.00	-213.26	0.00	0.00
5	Jun-05	209.79	217.29	7.50	0.00	-209.79	6.00	-211.29	0.00	0.00
6	Jun-06	208.15	215.78	7.63	0.00	-208.15	6.00	-209.78	0.00	0.00
7	Jun-07	206.11	213.31	7.20	0.00	-206.11	6.00	-207.31	0.00	0.00
8	Jun-08	226.00	229.00	3.00	0.00	-226.00	6.00	-223.00	0.00	0.00
9	Jun-09	214.00	217.00	3.00	0.00	-214.00	6.00	-211.00	0.00	0.00
10	Jun-10	207.89	215.09	7.20	0.00	-207.89	6.00	-209.09	0.00	0.00
11	Jun-11	194.26	215.00	20.74	0.00	-194.26	6.00	-209.00	0.00	0.00
12	Jun-12	192.00	214.91	22.91	0.00	-192.00	6.00	-208.91	0.00	0.00
13	Jun-13	190.00	213.28	23.28	0.00	-190.00	6.00	-207.28	0.00	0.00
14	Jun-14	188.93	212.93	24.00	0.00	-188.93	6.00	-206.93	0.00	0.00
15	Jun-15	180.12	191.00	10.88	0.00	-180.12	6.00	-185.00	0.00	0.00
16	Jun-16	167.26	182.00	14.74	0.00	-167.26	6.00	-176.00	0.00	0.00
17	Jun-17	166.78	182.00	15.22	0.00	-166.78	6.00	-176.00	0.00	0.00
18	Jun-18	166.04	173.48	7.44	0.00	-166.04	6.00	-167.48	0.00	0.00
19	Jun-19	172.65	179.85	7.20	0.00	-172.65	6.00	-173.85	0.00	0.00
20	Jun-20	167.26	177.60	10.34	0.00	-167.26	6.00	-171.60	0.00	0.00
21	Jun-21	166.48	174.83	8.35	0.00	-166.48	6.00	-168.83	0.00	0.00
22	Jun-22	165.81	174.39	8.58	0.00	-165.81	6.00	-168.39	0.00	0.00
23	Jun-23	165.70	174.50	8.80	0.00	-165.70	6.00	-168.50	0.00	0.00
24	Jun-24	165.63	174.60	8.97	0.00	-165.63	6.00	-168.60	0.00	0.00
25	Jun-25	164.88	177.54	12.66	0.00	-164.88	6.00	-171.54	0.00	0.00
26	Jun-26	160.80	173.00	12.20	158.30	-2.50	173.00	0.00	0.00	0.00
27	Jun-27	204.16	211.36	7.20	0.00	-204.16	6.00	-205.36	0.00	0.00
28	Jun-28	202.24	209.44	7.20	0.00	-202.24	6.00	-203.44	0.00	0.00
29	Jun-29	199.67	206.87	7.20	0.00	-199.67	6.00	-200.87	0.00	0.00
30	Jun-30	198.21	205.41	7.20	0.00	-198.21	6.00	-199.41	0.00	0.00
31	Jun-31	196.19	203.39	7.20	0.00	-196.19	6.00	-197.39	0.00	0.00
32	Jun-32	200.57	204.07	3.50	0.00	-200.57	6.00	-198.07	0.00	0.00
33	Jun-33	190.98	198.18	7.20	0.00	-190.98	6.00	-192.18	0.00	0.00
34	Jun-34	187.23	197.73	10.50	0.00	-187.23	0.00	-197.73	0.00	0.00
35	Jun-35	182.33	201.24	18.91	0.00	-182.33	0.00	-201.24	0.00	0.00
36	Jun-36	182.19	203.42	21.23	0.00	-182.19	0.00	-203.42	0.00	0.00
37	Jun-37	181.07	202.81	21.74	0.00	-181.07	0.00	-202.81	0.00	0.00
38	Jun-38	174.50	195.50	21.00	174.50	0.00	195.50	0.00	0.00	0.00
39	Jun-39	190.84	199.18	8.34	0.00	-190.84	0.00	-199.18	0.00	0.00
40	Jun-40	199.50	202.60	3.10	0.00	-199.50	0.00	-202.60	0.00	0.00
41	Jun-41	198.00	201.00	3.00	0.00	-198.00	0.00	-201.00	0.00	0.00
42	Jun-42	185.10	194.10	9.00	0.00	-185.10	0.00	-194.10	0.00	0.00
43	Jun-43	184.38	192.50	8.12	0.00	-184.38	0.00	-192.50	0.00	0.00
44	Jun-44	184.31	192.40	8.09	0.00	-184.31	0.00	-192.40	0.00	0.00
45	Jun-45	183.72	190.75	7.03	0.00	-183.72	0.00	-190.75	0.00	0.00
46	Jun-46	175.20	185.00	9.80	0.00	-175.20	0.00	-185.00	0.00	0.00
47	Jun-47	170.03	185.50	15.47	170.03	0.00	185.50	0.00	0.00	0.00
48	Jun-48	181.00	198.00	17.00	181.00	0.00	198.00	0.00	0.00	0.00
49	Jun-49	168.53	181.90	13.37	168.53	0.00	181.90	0.00	0.00	0.00
50	Jun-60	174.97	196.10	21.13	174.97	0.00	196.10	0.00	0.00	0.00

Junction Results

SN	Element ID	Peak Inflow (cfs)	Peak Lateral Inflow (cfs)	Max HGL Elevation Attained (ft)	Max HGL Depth Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Average HGL Elevation Attained (ft)	Average HGL Depth Attained (ft)	Time of Max HGL Occurrence (days hh:mm)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	0.52	0.00	237.70	0.20	0.00	2.30	237.50	0.00	0 00:05	0 00:00	0.00	0.00
2	Jun-02	3.23	0.00	221.88	0.39	0.00	6.29	221.49	0.00	0 00:05	0 00:00	0.00	0.00
3	Jun-03	3.23	0.00	217.56	0.39	0.00	6.11	217.17	0.00	0 00:05	0 00:00	0.00	0.00
4	Jun-04	5.30	0.00	212.53	0.51	0.00	6.73	212.02	0.00	0 00:05	0 00:00	0.00	0.00
5	Jun-05	6.67	0.00	210.57	0.78	0.00	6.72	209.79	0.00	0 00:05	0 00:00	0.00	0.00
6	Jun-06	6.67	0.00	208.93	0.78	0.00	6.85	208.15	0.00	0 00:05	0 00:00	0.00	0.00
7	Jun-07	6.67	0.00	206.87	0.76	0.00	6.44	206.11	0.00	0 00:05	0 00:00	0.00	0.00
8	Jun-08	2.08	0.00	226.27	0.27	0.00	2.73	226.00	0.00	0 00:05	0 00:00	0.00	0.00
9	Jun-09	2.08	0.00	214.29	0.29	0.00	2.71	214.00	0.00	0 00:05	0 00:00	0.00	0.00
10	Jun-10	2.08	0.00	208.18	0.29	0.00	6.91	207.89	0.00	0 00:05	0 00:00	0.00	0.00
11	Jun-11	9.18	0.00	195.35	1.09	0.00	19.65	194.26	0.00	0 00:08	0 00:00	0.00	0.00
12	Jun-12	10.10	0.00	193.09	1.09	0.00	21.82	192.00	0.00	0 00:08	0 00:00	0.00	0.00
13	Jun-13	10.77	0.00	191.03	1.03	0.00	22.25	190.00	0.00	0 00:08	0 00:00	0.00	0.00
14	Jun-14	19.09	0.00	189.84	0.91	0.00	23.09	188.93	0.00	0 00:08	0 00:00	0.00	0.00
15	Jun-15	23.21	0.00	181.21	1.09	0.00	9.79	180.12	0.00	0 00:02	0 00:00	0.00	0.00
16	Jun-16	26.89	0.00	170.58	3.32	0.00	11.42	169.42	2.16	0 00:02	0 00:00	0.00	0.00
17	Jun-17	26.89	0.00	168.54	1.76	0.00	13.46	166.79	0.01	0 00:02	0 00:00	0.00	0.00
18	Jun-18	27.75	0.00	167.80	1.76	0.00	5.68	166.05	0.01	0 00:02	0 00:00	0.00	0.00
19	Jun-19	0.40	0.00	172.84	0.19	0.00	7.01	172.65	0.00	0 00:05	0 00:00	0.00	0.00
20	Jun-20	0.40	0.00	167.45	0.19	0.00	10.15	167.26	0.00	0 00:05	0 00:00	0.00	0.00
21	Jun-21	9.47	0.00	167.58	1.10	0.00	7.25	166.48	0.00	0 00:07	0 00:00	0.00	0.00
22	Jun-22	32.45	0.00	167.49	1.68	0.00	6.90	165.82	0.01	0 00:02	0 00:00	0.00	0.00
23	Jun-23	32.45	0.00	167.38	1.68	0.00	7.12	165.71	0.01	0 00:02	0 00:00	0.00	0.00
24	Jun-24	32.45	0.00	167.31	1.68	0.00	7.29	165.64	0.01	0 00:02	0 00:00	0.00	0.00
25	Jun-25	32.45	0.00	166.56	1.68	0.00	10.98	164.89	0.01	0 00:02	0 00:00	0.00	0.00
26	Jun-26	564.71	0.00	164.87	4.07	0.00	8.13	164.28	3.48	0 00:06	0 00:00	0.00	0.00
27	Jun-27	10.75	0.00	205.26	1.10	0.00	6.10	204.16	0.00	0 00:06	0 00:00	0.00	0.00
28	Jun-28	15.11	0.00	203.34	1.10	0.00	6.10	202.24	0.00	0 00:03	0 00:00	0.00	0.00
29	Jun-29	23.07	0.00	200.88	1.21	0.00	5.99	199.67	0.00	0 00:06	0 00:00	0.00	0.00
30	Jun-30	23.07	0.00	199.51	1.30	0.00	5.90	198.21	0.00	0 00:06	0 00:00	0.00	0.00
31	Jun-31	23.46	0.00	197.49	1.30	0.00	5.90	196.19	0.00	0 00:06	0 00:00	0.00	0.00
32	Jun-32	19.18	0.00	201.67	1.10	0.00	2.40	200.57	0.00	0 00:06	0 00:00	0.00	0.00
33	Jun-33	31.02	0.00	192.85	1.87	0.00	5.33	190.99	0.01	0 00:06	0 00:00	0.00	0.00
34	Jun-34	38.05	0.00	189.24	2.01	0.00	8.49	187.24	0.01	0 00:03	0 00:00	0.00	0.00
35	Jun-35	44.80	0.00	184.35	2.02	0.00	16.89	182.34	0.01	0 00:03	0 00:00	0.00	0.00
36	Jun-36	44.80	0.00	184.21	2.02	0.00	19.21	182.20	0.01	0 00:03	0 00:00	0.00	0.00
37	Jun-37	44.80	0.00	183.07	2.00	0.00	19.74	181.08	0.01	0 00:03	0 00:00	0.00	0.00
38	Jun-38	407.33	0.00	195.50	21.00	0.00	0.00	178.96	4.46	0 00:01	0 00:06	2.39	8.00
39	Jun-39	1.18	0.00	191.10	0.26	0.00	8.08	190.84	0.00	0 00:05	0 00:00	0.00	0.00
40	Jun-40	15.88	0.00	200.47	0.97	0.00	2.13	199.50	0.00	0 00:07	0 00:00	0.00	0.00
41	Jun-41	15.88	0.00	199.08	1.08	0.00	1.92	198.00	0.00	0 00:07	0 00:00	0.00	0.00
42	Jun-42	16.64	0.00	195.18	10.08	0.00	0.42	194.10	9.00	0 00:07	0 00:00	0.00	0.00
43	Jun-43	21.94	0.00	185.99	1.61	0.00	6.51	184.39	0.01	0 00:06	0 00:00	0.00	0.00
44	Jun-44	21.94	0.00	185.92	1.61	0.00	6.48	184.32	0.01	0 00:06	0 00:00	0.00	0.00
45	Jun-45	21.94	0.00	185.31	1.59	0.00	5.44	183.73	0.01	0 00:06	0 00:00	0.00	0.00
46	Jun-46	21.94	0.00	176.22	1.02	0.00	8.78	175.20	0.00	0 00:06	0 00:00	0.00	0.00
47	Jun-47	390.54	0.00	185.50	15.47	0.00	0.00	174.44	4.41	0 00:02	0 00:05	0.34	6.00
48	Jun-48	363.58	357.00	185.45	4.45	0.00	12.55	185.37	4.37	0 00:05	0 00:00	0.00	0.00
49	Jun-49	478.61	100.00	174.03	5.50	0.00	7.87	172.79	4.26	0 00:02	0 00:00	0.00	0.00
50	Jun-60	363.58	0.00	179.42	4.45	0.00	16.68	179.34	4.37	0 00:05	0 00:00	0.00	0.00

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-001	55.58	238.00	0.00	237.50	0.00	0.50	0.9000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	Link-002	113.65	237.50	0.00	232.00	0.00	5.50	4.8400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-003	17.26	238.00	0.00	237.50	0.00	0.50	2.9000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-004	38.35	237.50	0.00	232.00	0.00	5.50	14.3400	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
5	Link-005	83.65	232.00	0.00	221.49	0.00	10.51	12.5600	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
6	Link-006	58.80	226.45	0.00	221.49	0.00	4.96	8.4400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
7	Link-007	98.45	221.49	0.00	217.17	0.00	4.32	4.3900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
8	Link-008	116.67	217.17	0.00	212.02	0.00	5.15	4.4100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
9	Link-009	8.25	212.10	0.00	212.02	0.00	0.08	0.9700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
10	Link-010	52.76	212.02	0.00	209.79	0.00	2.23	4.2300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
11	Link-011	28.25	210.27	0.00	209.79	0.00	0.48	1.7000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
12	Link-012	114.02	209.79	0.00	208.15	0.00	1.64	1.4400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
13	Link-013	131.40	208.15	0.00	206.11	0.00	2.04	1.5500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
14	Link-014	30.08	206.11	0.00	188.93	0.00	17.18	57.1100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
15	Link-015	69.16	237.50	0.00	236.50	0.00	1.00	1.4500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
16	Link-016	45.66	236.50	0.00	236.00	0.00	0.50	1.1000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
17	Link-017	75.35	236.00	0.00	235.00	0.00	1.00	1.3300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
18	Link-018	66.03	235.00	0.00	226.00	0.00	9.00	13.6300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
19	Link-019	40.66	226.00	0.00	214.00	0.00	12.00	29.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
20	Link-020	97.25	214.00	0.00	207.89	0.00	6.11	6.2800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
21	Link-021	17.00	207.89	0.00	192.00	0.00	15.89	93.4700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
22	Link-022	38.85	194.65	0.00	194.26	0.00	0.39	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
23	Link-023	226.46	194.26	0.00	192.00	0.00	2.26	1.0000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
24	Link-024	144.08	192.00	0.00	190.00	0.00	2.00	1.3900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
25	Link-025	16.79	206.29	0.00	189.28	-0.72	17.01	101.3100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
26	Link-026	48.04	190.00	0.00	188.93	0.00	1.07	2.2300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
27	Link-027	38.44	205.20	0.00	188.93	0.00	16.27	42.3300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
28	Link-028	133.50	188.93	0.00	180.12	0.00	8.81	6.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
29	Link-029	175.28	181.85	0.00	180.12	0.00	1.73	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
30	Link-030	191.94	180.12	0.00	169.41	2.15	10.71	5.5800	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
31	Link-031	216.71	169.41	0.00	167.26	0.00	2.15	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
32	Link-032	122.48	169.41	2.15	166.78	0.00	2.63	2.1500	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
33	Link-033	123.23	166.78	0.00	166.04	0.00	0.74	0.6000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
34	Link-034	64.61	209.50	0.00	184.90	0.00	24.60	38.0700	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
35	Link-035	154.66	184.90	0.00	174.00	0.00	10.90	7.0500	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
36	Link-036	94.52	174.00	0.00	170.50	0.00	3.50	3.7000	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
37	Link-037	18.56	170.50	0.00	166.04	0.00	4.46	24.0300	CIRCULAR	12.000	12.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
38	Link-038	23.47	166.04	0.00	165.81	0.00	0.23	0.9800	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
39	Link-039	12.78	172.80	0.00	172.65	0.00	0.15	1.1700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
40	Link-040	176.50	172.65	0.00	167.26	0.00	5.39	3.0500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
41	Link-041	67.35	167.26	0.00	166.48	0.00	0.78	1.1600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
42	Link-042	173.64	168.20	0.00	166.48	0.00	1.72	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
43	Link-043	12.67	166.48	0.00	165.81	0.00	0.67	5.2900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
44	Link-044	8.62	167.33	0.00	165.81	0.00	1.52	17.6300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
45	Link-045	11.02	165.81	0.00	165.70	0.00	0.11	1.0000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
46	Link-046	6.68	165.70	0.00	165.63	0.00	0.07	1.0500	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
47	Link-047	75.00	165.63	0.00	164.88	0.00	0.75	1.0000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
48	Link-048	56.74	164.88	0.00	161.78	0.00	3.10	5.4600	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
49	Link-049	24.42	161.78	0.00	161.30	0.50	0.48	1.9700	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
50	Link-050	31.28	211.20	0.00	204.16	0.00	7.04	22.5100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
51	Link-051	112.71	205.27	0.00	204.16	0.00	1.11	0.9800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
52	Link-052	120.19	204.16	0.00	202.24	0.00	1.92	1.6000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
53	Link-053	187.56	204.10	0.00	202.24	0.00	1.86	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
54	Link-054	193.82	202.24	0.00	199.67	0.00	2.57	1.3300	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
55	Link-055	149.83	201.15	0.00	199.67	0.00	1.48	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
56	Link-056	30.75	202.74	0.00	199.67	0.00	3.07	9.9800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
57	Link-057	64.91	199.67	0.00	198.21	0.00	1.46	2.2500	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
58	Link-058	110.75	198.21	0.00	196.19	0.00	2.02	1.8200	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
59	Link-059	7.25	196.69	0.00	196.19	0.00	0.50	6.9000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
60	Link-060	179.75	196.19	0.00	190.98	0.00	5.21	2.9000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
61	Link-061	127.53	212.00	0.00	210.43	0.00	1.57	1.2300	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
62	Link-062	126.91	210.43	0.00	206.67	0.00	3.76	2.9600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
63	Link-063	125.83	206.67	0.00	200.57	0.00	6.10	4.8500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
64	Link-064	98.51	201.55	0.00	200.57	0.00	0.98	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
65	Link-065	10.48	200.89	0.00	200.57	0.00	0.32	3.0500	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
66	Link-066	98.83	200.57	0.00	191.80	0.00	8.77	8.8700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
67	Link-067	19.25	191.80	0.00	190.98	0.00	0.82	4.2600	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
68	Link-068	7.25	190.98	0.00	190.93	0.00	0.05	0.6900	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
69	Link-069	32.50	190.93	0.00	190.70	0.00	0.23	0.7100	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
70	Link-070	243.45	190.70	0.00	189.00	0.00	1.70	0.7000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
71	Link-071	204.13	191.03	0.00	189.00	0.00	2.03	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
72	Link-072	197.21	189.00	0.00	187.23	0.00	1.77	0.9000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
73	Link-073	87.10	187.23	0.00	186.45	0.00	0.78	0.9000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
74	Link-074	141.31	187.85	0.00	186.45	0.00	1.40	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
75	Link-075	173.88	186.45	0.00	184.46	0.00	1.99	1.1400	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
76	Link-076	94.56	184.46	0.00	183.33	0.00	1.13	1.2000	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
77	Link-077	50.21	183.82	0.00	183.33	0.00	0.49	0.9800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
78	Link-078	52.80	183.33	0.00	182.67	0.00	0.66	1.2500	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
79	Link-079	27.22	182.67	0.00	182.33	0.00	0.34	1.2500	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
80	Link-080	11.46	182.33	0.00	182.19	0.00	0.14	1.2200	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
81	Link-081	89.60	182.19	0.00	181.07	0.00	1.12	1.2500	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
82	Link-082	75.85	181.07	0.00	179.20	0.00	1.87	2.4700	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
83	Link-083	24.25	179.20	0.00	175.48	0.98	3.72	15.3400	CIRCULAR	30.000	30.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
84	Link-084	65.11	194.45	0.00	190.84	0.00	3.61	5.5400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
85	Link-085	147.47	190.84	0.00	186.30	0.00	4.54	3.0800	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
86	Link-086	69.53	191.96	0.00	191.27	0.00	0.69	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
87	Link-087	39.76	191.27	0.00	186.30	0.00	4.97	12.5000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
88	Link-088	32.49	186.30	0.00	184.62	0.00	1.68	5.1700	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
89	Link-089	81.17	207.55	0.00	206.75	0.00	0.80	0.9900	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
90	Link-090	120.67	206.75	0.00	199.50	0.00	7.25	6.0100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
91	Link-091	37.45	199.50	0.00	198.00	0.00	1.50	4.0100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
92	Link-092	129.75	198.00	0.00	194.10	9.00	3.90	3.0100	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
93	Link-093	29.87	187.40	0.00	186.70	0.00	0.70	2.3400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
94	Link-094	153.76	186.70	0.00	185.10	0.00	1.60	1.0400	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
95	Link-095	48.47	185.10	0.00	184.62	0.00	0.48	0.9900	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
96	Link-096	23.96	184.62	0.00	184.38	0.00	0.24	1.0000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
97	Link-097	7.15	184.38	0.00	184.31	0.00	0.07	0.9800	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
98	Link-098	59.00	184.31	0.00	183.72	0.00	0.59	1.0000	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
99	Link-099	145.17	183.72	0.00	175.20	0.00	8.52	5.8700	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
100	Link-100	48.21	175.20	0.00	173.53	3.50	1.67	3.4600	CIRCULAR	24.000	24.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
101	Link-101	18.19	182.00	0.00	181.00	0.00	1.00	5.5000	CIRCULAR	18.000	18.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
102	Link-102	501.00	181.00	0.00	174.97	0.00	6.03	1.2000	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
103	Link-103	371.00	174.50	0.00	170.03	0.00	4.47	1.2000	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
104	Link-104	118.00	170.03	0.00	168.53	0.00	1.50	1.2700	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
105	Link-105	220.00	168.53	0.00	160.80	0.00	7.73	3.5100	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
106	Link-106	182.00	160.80	0.00	154.39	0.00	6.41	3.5200	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
107	Link-121	39.20	174.97	0.00	174.50	0.00	0.47	1.2000	CIRCULAR	66.000	66.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-001	0.59	0 00:05	3.38	0.18	3.23	0.29	0.28	0.28	0.00		Calculated
2	Link-002	0.92	0 00:05	7.84	0.12	6.66	0.28	0.23	0.23	0.00		Calculated
3	Link-003	0.52	0 00:05	6.06	0.09	4.72	0.06	0.20	0.20	0.00		Calculated
4	Link-004	0.52	0 00:05	13.49	0.04	8.27	0.08	0.13	0.13	0.00		Calculated
5	Link-005	1.83	0 00:05	12.63	0.14	11.45	0.12	0.26	0.26	0.00		Calculated
6	Link-006	1.40	0 00:05	30.51	0.05	8.80	0.11	0.22	0.15	0.00		Calculated
7	Link-007	3.23	0 00:05	22.00	0.15	8.90	0.18	0.39	0.26	0.00		Calculated
8	Link-008	3.23	0 00:05	22.07	0.15	8.92	0.22	0.39	0.26	0.00		Calculated
9	Link-009	2.07	0 00:05	10.34	0.20	4.57	0.03	0.46	0.30	0.00		Calculated
10	Link-010	5.30	0 00:05	21.60	0.25	10.09	0.09	0.51	0.34	0.00		Calculated
11	Link-011	1.37	0 00:05	13.69	0.10	4.96	0.09	0.32	0.21	0.00		Calculated
12	Link-012	6.67	0 00:05	12.60	0.53	7.23	0.26	0.78	0.52	0.00		Calculated
13	Link-013	6.67	0 00:05	13.09	0.51	7.44	0.29	0.76	0.51	0.00		Calculated
14	Link-014	6.67	0 00:05	79.39	0.08	27.31	0.02	0.29	0.20	0.00		Calculated
15	Link-015	0.38	0 00:05	4.28	0.09	3.36	0.34	0.20	0.20	0.00		Calculated
16	Link-016	0.76	0 00:05	3.73	0.20	3.73	0.20	0.31	0.31	0.00		Calculated
17	Link-017	1.60	0 00:05	4.10	0.39	4.90	0.26	0.43	0.43	0.00		Calculated
18	Link-018	2.08	0 00:05	13.15	0.16	12.23	0.09	0.27	0.27	0.00		Calculated
19	Link-019	2.08	0 00:05	57.07	0.04	15.34	0.04	0.20	0.13	0.00		Calculated
20	Link-020	2.08	0 00:05	26.33	0.08	8.91	0.18	0.29	0.19	0.00		Calculated
21	Link-021	2.08	0 00:05	101.56	0.02	22.00	0.01	0.15	0.10	0.00		Calculated
22	Link-022	9.18	0 00:08	10.52	0.87	6.71	0.10	1.08	0.72	0.00		Calculated
23	Link-023	9.18	0 00:08	10.49	0.87	6.69	0.56	1.09	0.72	0.00		Calculated
24	Link-024	10.10	0 00:08	12.38	0.82	7.81	0.31	1.03	0.69	0.00		Calculated
25	Link-025	1.18	0 00:05	103.47	0.01	19.50	0.01	0.11	0.08	0.00		Calculated
26	Link-026	10.77	0 00:08	15.68	0.69	9.55	0.08	0.91	0.61	0.00		Calculated
27	Link-027	9.00	0 00:06	68.34	0.13	26.81	0.02	0.37	0.25	0.00		Calculated
28	Link-028	19.09	0 00:05	105.37	0.18	16.23	0.14	0.72	0.29	0.00		Calculated
29	Link-029	9.14	0 00:02	10.44	0.88	6.65	0.44	1.09	0.73	0.00		Calculated
30	Link-030	23.21	0 00:02	96.89	0.24	16.20	0.20	0.83	0.33	0.00		Calculated
31	Link-031	9.25	0 00:07	10.46	0.88	6.68	0.54	1.10	0.73	0.00		Calculated
32	Link-032	26.89	0 00:02	60.11	0.45	11.90	0.17	1.17	0.47	0.00		Calculated
33	Link-033	26.89	0 00:02	31.79	0.85	7.26	0.28	1.76	0.71	0.00		Calculated
34	Link-034	0.33	0 00:05	21.98	0.01	10.13	0.11	0.09	0.09	0.00		Calculated
35	Link-035	0.40	0 00:05	9.46	0.04	6.01	0.43	0.14	0.14	0.00		Calculated
36	Link-036	0.55	0 00:05	6.86	0.08	5.25	0.30	0.19	0.19	0.00		Calculated
37	Link-037	2.57	0 00:05	17.47	0.15	15.91	0.02	0.26	0.26	0.00		Calculated
38	Link-038	27.75	0 00:02	40.60	0.68	8.90	0.04	1.52	0.61	0.00		Calculated
39	Link-039	0.40	0 00:05	11.38	0.04	3.03	0.07	0.19	0.13	0.00		Calculated
40	Link-040	0.40	0 00:05	18.36	0.02	4.00	0.74	0.16	0.11	0.00		Calculated
41	Link-041	0.40	0 00:05	11.30	0.04	3.02	0.37	0.19	0.13	0.00		Calculated
42	Link-042	9.25	0 00:07	10.45	0.88	6.68	0.43	1.10	0.73	0.00		Calculated
43	Link-043	9.47	0 00:07	24.16	0.39	12.83	0.02	0.65	0.44	0.00		Calculated
44	Link-044	1.35	0 00:05	44.11	0.03	11.29	0.01	0.18	0.12	0.00		Calculated
45	Link-045	32.45	0 00:02	40.98	0.79	9.26	0.02	1.68	0.67	0.00		Calculated
46	Link-046	32.45	0 00:02	41.99	0.77	9.44	0.01	1.65	0.66	0.00		Calculated
47	Link-047	32.45	0 00:02	41.02	0.79	9.27	0.13	1.68	0.67	0.00		Calculated
48	Link-048	32.45	0 00:02	95.87	0.34	17.63	0.05	1.00	0.40	0.00		Calculated
49	Link-049	87.24	0 00:06	93.51	0.93	15.02	0.03	2.30	0.77	0.00		Calculated
50	Link-050	2.02	0 00:05	49.83	0.04	13.82	0.04	0.21	0.14	0.00		Calculated
51	Link-051	9.24	0 00:06	10.42	0.89	6.66	0.28	1.10	0.73	0.00		Calculated
52	Link-052	10.75	0 00:06	13.28	0.81	8.36	0.24	1.02	0.68	0.00		Calculated
53	Link-053	9.25	0 00:03	10.46	0.88	6.68	0.47	1.10	0.73	0.00		Calculated
54	Link-054	15.11	0 00:03	26.05	0.58	8.59	0.38	1.09	0.55	0.00		Calculated
55	Link-055	9.22	0 00:06	10.44	0.88	6.67	0.37	1.10	0.73	0.00		Calculated
56	Link-056	2.56	0 00:05	33.19	0.08	11.14	0.05	0.28	0.19	0.00		Calculated
57	Link-057	23.07	0 00:06	33.93	0.68	11.60	0.09	1.21	0.61	0.00		Calculated
58	Link-058	23.07	0 00:06	30.55	0.75	10.69	0.17	1.30	0.65	0.00		Calculated
59	Link-059	0.54	0 00:05	27.59	0.02	5.95	0.02	0.15	0.10	0.00		Calculated
60	Link-060	23.46	0 00:06	38.51	0.61	12.85	0.23	1.13	0.56	0.00		Calculated
61	Link-061	9.09	0 00:04	11.66	0.78	7.29	0.29	1.00	0.66	0.00		Calculated
62	Link-062	9.48	0 00:04	18.08	0.52	10.35	0.20	0.77	0.51	0.00		Calculated
63	Link-063	9.80	0 00:04	23.13	0.42	12.55	0.17	0.68	0.45	0.00		Calculated
64	Link-064	9.24	0 00:06	10.48	0.88	6.69	0.25	1.10	0.73	0.00		Calculated
65	Link-065	0.23	0 00:05	18.36	0.01	3.59	0.05	0.12	0.08	0.00		Calculated
66	Link-066	19.18	0 00:04	31.29	0.61	18.59	0.09	0.85	0.57	0.00		Calculated
67	Link-067	19.56	0 00:04	21.68	0.90	13.88	0.02	1.12	0.74	0.00		Calculated
68	Link-068	31.02	0 00:06	34.06	0.91	7.86	0.02	1.87	0.75	0.00		Calculated
69	Link-069	31.53	0 00:06	34.51	0.91	7.97	0.07	1.88	0.75	0.00		Calculated
70	Link-070	31.74	0 00:06	34.28	0.93	7.93	0.51	1.90	0.76	0.00		Calculated
71	Link-071	9.18	0 00:07	10.48	0.88	6.68	0.51	1.09	0.73	0.00		Calculated
72	Link-072	38.05	0 00:03	38.86	0.98	9.02	0.36	2.00	0.80	0.00		Calculated
73	Link-073	38.05	0 00:03	38.82	0.98	9.01	0.16	2.01	0.80	0.00		Calculated
74	Link-074	9.25	0 00:03	10.46	0.88	6.68	0.35	1.10	0.73	0.00		Calculated
75	Link-075	43.67	0 00:03	43.88	1.00	10.19	0.28	2.04	0.82	0.00		Calculated
76	Link-076	44.46	0 00:03	44.84	0.99	10.41	0.15	2.03	0.81	0.00		Calculated
77	Link-077	0.36	0 00:05	10.38	0.03	2.74	0.31	0.19	0.13	0.00		Calculated
78	Link-078	44.77	0 00:03	45.86	0.98	10.64	0.08	2.00	0.80	0.00		Calculated
79	Link-079	44.80	0 00:03	45.84	0.98	10.64	0.04	2.00	0.80	0.00		Calculated
80	Link-080	44.80	0 00:03	45.34	0.99	10.53	0.02	2.02	0.81	0.00		Calculated
81	Link-081	44.80	0 00:03	45.86	0.98	10.64	0.14	2.00	0.80	0.00		Calculated

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
82	Link-082	44.80	0 00:03	64.40	0.70	14.17	0.09	1.54	0.61	0.00		Calculated
83	Link-083	46.54	0 00:03	160.65	0.29	28.33	0.01	0.92	0.37	0.00		Calculated
84	Link-084	1.18	0 00:05	24.73	0.05	7.21	0.15	0.22	0.15	0.00		Calculated
85	Link-085	1.18	0 00:05	18.43	0.06	5.79	0.42	0.26	0.17	0.00		Calculated
86	Link-086	0.54	0 00:05	10.46	0.05	3.12	0.37	0.23	0.15	0.00		Calculated
87	Link-087	0.90	0 00:05	37.14	0.02	8.19	0.08	0.17	0.11	0.00		Calculated
88	Link-088	4.66	0 00:05	23.89	0.19	10.47	0.05	0.45	0.30	0.00		Calculated
89	Link-089	9.12	0 00:06	10.43	0.87	6.65	0.20	1.09	0.73	0.00		Calculated
90	Link-090	15.88	0 00:07	25.75	0.62	15.32	0.13	0.85	0.57	0.00		Calculated
91	Link-091	15.88	0 00:07	21.02	0.76	13.07	0.05	0.97	0.65	0.00		Calculated
92	Link-092	15.88	0 00:07	18.21	0.87	11.61	0.19	1.08	0.72	0.00		Calculated
93	Link-093	0.71	0 00:05	16.08	0.04	4.60	0.11	0.21	0.14	0.00		Calculated
94	Link-094	1.23	0 00:05	10.72	0.11	4.02	0.64	0.34	0.23	0.00		Calculated
95	Link-095	16.64	0 00:07	22.51	0.74	7.84	0.10	1.28	0.64	0.00		Calculated
96	Link-096	21.94	0 00:06	22.64	0.97	8.21	0.05	1.59	0.79	0.00		Calculated
97	Link-097	21.94	0 00:06	22.38	0.98	8.12	0.01	1.61	0.80	0.00		Calculated
98	Link-098	21.94	0 00:06	22.62	0.97	8.20	0.12	1.59	0.79	0.00		Calculated
99	Link-099	21.94	0 00:06	54.80	0.40	16.48	0.15	0.88	0.44	0.00		Calculated
100	Link-100	21.94	0 00:06	42.10	0.52	13.54	0.06	1.02	0.51	0.00		Calculated
101	Link-101	6.58	0 00:05	24.63	0.27	11.80	0.03	0.53	0.35	0.00		Calculated
102	Link-102	363.58	0 00:05	368.41	0.99	17.67	0.47	4.45	0.81	0.00		Calculated
103	Link-103	368.60	0 00:01	368.60	1.00	17.69	0.35	5.50	1.00	8.00		SURCHARGED
104	Link-104	378.61	0 00:02	378.61	1.00	18.17	0.11	5.50	1.00	4.00		SURCHARGED
105	Link-105	478.61	0 00:02	629.46	0.76	29.16	0.13	3.59	0.65	0.00		Calculated
106	Link-106	564.71	0 00:06	630.21	0.90	29.98	0.10	4.07	0.74	0.00		Calculated
107	Link-121	363.58	0 00:05	367.70	0.99	17.64	0.04	4.45	0.81	0.00		Calculated

Inlet Input

SN	Element ID	Inlet Manufacturer	Manufacturer Part Number	Inlet Location	Number of Inlets	Catchbasin Invert Elevation (ft)	Max (Rim) Elevation (ft)	Inlet Depth (ft)	Initial Water Elevation (ft)	Initial Water Depth (ft)	Ponded Area (ft²)	Grate Clogging Factor (%)
1	Inlet-01	FHWA HEC-22 GENERIC	N/A	On Sag	1	238.00	240.00	2.00	0.00	0.00	10.00	0.00
2	Inlet-02	FHWA HEC-22 GENERIC	N/A	On Sag	1	237.50	240.00	2.50	0.00	0.00	10.00	0.00
3	Inlet-03	FHWA HEC-22 GENERIC	N/A	On Sag	1	238.00	240.00	2.00	0.00	0.00	10.00	0.00
4	Inlet-04	FHWA HEC-22 GENERIC	N/A	On Sag	1	232.00	234.00	2.00	0.00	0.00	10.00	0.00
5	Inlet-05	FHWA HEC-22 GENERIC	N/A	On Grade	1	226.45	231.97	5.52	0.00	0.00	N/A	0.00
6	Inlet-06	FHWA HEC-22 GENERIC	N/A	On Grade	1	212.10	219.64	7.54	0.00	0.00	N/A	0.00
7	Inlet-07	FHWA HEC-22 GENERIC	N/A	On Grade	1	210.27	216.84	6.57	0.00	0.00	N/A	0.00
8	Inlet-08	FHWA HEC-22 GENERIC	N/A	On Sag	1	237.50	240.00	2.50	0.00	0.00	10.00	0.00
9	Inlet-09	FHWA HEC-22 GENERIC	N/A	On Sag	1	236.50	240.00	3.50	0.00	0.00	10.00	0.00
10	Inlet-10	FHWA HEC-22 GENERIC	N/A	On Sag	1	236.00	240.00	4.00	0.00	0.00	10.00	0.00
11	Inlet-11	FHWA HEC-22 GENERIC	N/A	On Sag	1	235.00	240.00	5.00	0.00	0.00	10.00	0.00
12	Inlet-12	FHWA HEC-22 GENERIC	N/A	On Sag	1	194.65	215.00	20.35	0.00	0.00	10.00	0.00
13	Inlet-13	FHWA HEC-22 GENERIC	N/A	On Grade	1	206.29	213.49	7.20	0.00	0.00	N/A	0.00
14	Inlet-14	FHWA HEC-22 GENERIC	N/A	On Sag	1	205.20	212.40	7.20	0.00	0.00	10.00	0.00
15	Inlet-15	FHWA HEC-22 GENERIC	N/A	On Sag	1	181.85	191.00	9.15	0.00	0.00	10.00	0.00
16	Inlet-16	FHWA HEC-22 GENERIC	N/A	On Sag	1	169.41	180.00	10.59	0.00	0.00	10.00	0.00
17	Inlet-17	FHWA HEC-22 GENERIC	N/A	On Sag	1	209.50	212.50	3.00	0.00	0.00	10.00	0.00
18	Inlet-18	FHWA HEC-22 GENERIC	N/A	On Sag	1	184.90	187.90	3.00	0.00	0.00	10.00	0.00
19	Inlet-19	FHWA HEC-22 GENERIC	N/A	On Sag	1	174.00	180.00	6.00	0.00	0.00	10.00	0.00
20	Inlet-20	FHWA HEC-22 GENERIC	N/A	On Sag	1	170.50	173.50	3.00	0.00	0.00	10.00	0.00
21	Inlet-21	FHWA HEC-22 GENERIC	N/A	On Sag	1	172.80	180.00	7.20	0.00	0.00	10.00	0.00
22	Inlet-22	FHWA HEC-22 GENERIC	N/A	On Sag	1	168.20	180.00	11.80	0.00	0.00	10.00	0.00
23	Inlet-23	FHWA HEC-22 GENERIC	N/A	On Grade	1	167.33	174.53	7.20	0.00	0.00	N/A	0.00
24	Inlet-24	FHWA HEC-22 GENERIC	N/A	On Sag	1	161.78	174.85	13.07	0.00	0.00	10.00	0.00
25	Inlet-25	FHWA HEC-22 GENERIC	N/A	On Grade	1	211.20	207.20	-4.00	0.00	0.00	N/A	0.00
26	Inlet-26	FHWA HEC-22 GENERIC	N/A	On Sag	1	205.27	214.00	8.73	0.00	0.00	10.00	0.00
27	Inlet-27	FHWA HEC-22 GENERIC	N/A	On Sag	1	204.10	210.00	5.90	0.00	0.00	10.00	0.00
28	Inlet-28	FHWA HEC-22 GENERIC	N/A	On Sag	1	201.15	210.00	8.85	0.00	0.00	10.00	0.00
29	Inlet-29	FHWA HEC-22 GENERIC	N/A	On Grade	1	202.74	206.74	4.00	0.00	0.00	N/A	0.00
30	Inlet-30	FHWA HEC-22 GENERIC	N/A	On Grade	1	196.69	203.89	7.20	0.00	0.00	N/A	0.00
31	Inlet-31	FHWA HEC-22 GENERIC	N/A	On Sag	1	212.00	214.00	2.00	0.00	0.00	10.00	0.00
32	Inlet-32	FHWA HEC-22 GENERIC	N/A	On Sag	1	210.43	217.93	7.50	0.00	0.00	10.00	0.00
33	Inlet-33	FHWA HEC-22 GENERIC	N/A	On Sag	1	206.67	209.67	3.00	0.00	0.00	10.00	0.00
34	Inlet-34	FHWA HEC-22 GENERIC	N/A	On Sag	1	201.55	210.00	8.45	0.00	0.00	10.00	0.00
35	Inlet-35	FHWA HEC-22 GENERIC	N/A	On Sag	1	200.89	203.89	3.00	0.00	0.00	10.00	0.00
36	Inlet-36	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.80	199.00	7.20	0.00	0.00	10.00	0.00
37	Inlet-37	FHWA HEC-22 GENERIC	N/A	On Grade	1	190.93	198.54	7.61	0.00	0.00	N/A	0.00
38	Inlet-38	FHWA HEC-22 GENERIC	N/A	On Sag	1	190.70	197.90	7.20	0.00	0.00	10.00	0.00
39	Inlet-39	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.03	204.50	13.47	0.00	0.00	10.00	0.00
40	Inlet-40	FHWA HEC-22 GENERIC	N/A	On Sag	1	189.00	195.50	6.50	0.00	0.00	10.00	0.00
41	Inlet-41	FHWA HEC-22 GENERIC	N/A	On Sag	1	187.85	203.80	15.95	0.00	0.00	10.00	0.00
42	Inlet-42	FHWA HEC-22 GENERIC	N/A	On Sag	1	186.45	200.45	14.00	0.00	0.00	10.00	0.00
43	Inlet-43	FHWA HEC-22 GENERIC	N/A	On Grade	1	184.46	199.24	14.78	0.00	0.00	N/A	0.00
44	Inlet-44	FHWA HEC-22 GENERIC	N/A	On Sag	1	183.82	204.00	20.18	0.00	0.00	10.00	0.00
45	Inlet-45	FHWA HEC-22 GENERIC	N/A	On Sag	1	183.33	199.33	16.00	0.00	0.00	10.00	0.00
46	Inlet-46	FHWA HEC-22 GENERIC	N/A	On Sag	1	182.67	195.67	13.00	0.00	0.00	10.00	0.00
47	Inlet-47	FHWA HEC-22 GENERIC	N/A	On Grade	1	179.20	195.32	16.12	0.00	0.00	N/A	0.00
48	Inlet-48	FHWA HEC-22 GENERIC	N/A	On Grade	1	194.45	201.65	7.20	0.00	0.00	N/A	0.00
49	Inlet-49	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.96	204.00	12.04	0.00	0.00	10.00	0.00
50	Inlet-50	FHWA HEC-22 GENERIC	N/A	On Sag	1	191.27	194.27	3.00	0.00	0.00	10.00	0.00
51	Inlet-51	FHWA HEC-22 GENERIC	N/A	On Grade	1	186.30	193.50	7.20	0.00	0.00	N/A	0.00
52	Inlet-52	FHWA HEC-22 GENERIC	N/A	On Sag	1	207.55	210.00	2.45	0.00	0.00	10.00	0.00
53	Inlet-53	FHWA HEC-22 GENERIC	N/A	On Sag	1	206.75	209.75	3.00	0.00	0.00	10.00	0.00
54	Inlet-54	FHWA HEC-22 GENERIC	N/A	On Sag	1	187.40	190.40	3.00	0.00	0.00	10.00	0.00
55	Inlet-55	FHWA HEC-22 GENERIC	N/A	On Sag	1	186.70	190.70	4.00	0.00	0.00	10.00	0.00
56	Inlet-56	FHWA HEC-22 GENERIC	N/A	On Grade	1	184.62	192.87	8.25	0.00	0.00	N/A	0.00
57	Inlet-57	FHWA HEC-22 GENERIC	N/A	On Sag	1	182.00	197.80	15.80	0.00	0.00	10.00	0.00

Roadway & Gutter Input

SN	Element ID	Roadway Longitudinal Slope (ft/ft)	Roadway Cross Slope (ft/ft)	Roadway Manning's Roughness	Gutter Cross Slope (ft/ft)	Gutter Width (ft)	Gutter Depression (in)	Allowable Spread (ft)
1	Inlet-01	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
2	Inlet-02	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
3	Inlet-03	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
4	Inlet-04	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
5	Inlet-05	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
6	Inlet-06	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
7	Inlet-07	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
8	Inlet-08	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
9	Inlet-09	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
10	Inlet-10	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
11	Inlet-11	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
12	Inlet-12	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
13	Inlet-13	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
14	Inlet-14	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
15	Inlet-15	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
16	Inlet-16	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
17	Inlet-17	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
18	Inlet-18	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
19	Inlet-19	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
20	Inlet-20	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
21	Inlet-21	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
22	Inlet-22	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
23	Inlet-23	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
24	Inlet-24	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
25	Inlet-25	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
26	Inlet-26	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
27	Inlet-27	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
28	Inlet-28	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
29	Inlet-29	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
30	Inlet-30	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
31	Inlet-31	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
32	Inlet-32	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
33	Inlet-33	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
34	Inlet-34	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
35	Inlet-35	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
36	Inlet-36	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
37	Inlet-37	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
38	Inlet-38	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
39	Inlet-39	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
40	Inlet-40	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
41	Inlet-41	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
42	Inlet-42	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
43	Inlet-43	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
44	Inlet-44	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
45	Inlet-45	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
46	Inlet-46	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
47	Inlet-47	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
48	Inlet-48	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
49	Inlet-49	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
50	Inlet-50	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
51	Inlet-51	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
52	Inlet-52	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
53	Inlet-53	N/A	0.0200	0.0160	0.0620	2.00	0.0657	7.00
54	Inlet-54	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
55	Inlet-55	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00
56	Inlet-56	0.0100	0.0200	0.0160	0.0620	2.00	0.0656	7.00
57	Inlet-57	N/A	0.0200	0.0160	0.0620	2.00	0.0656	7.00

Inlet Results

SN	Element ID	Peak Flow (cfs)	Peak Lateral Inflow (cfs)	Peak Flow Intercepted by Inlet (cfs)	Peak Flow Bypassing Inlet (cfs)	Inlet Efficiency during Peak Flow (%)	Max Gutter Spread during Peak Flow (ft)	Max Gutter Water Elev. during Peak Flow (ft)	Max Gutter Water Depth during Peak Flow (ft)	Time of Max Depth Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Inlet-01	0.60	0.60	N/A	N/A	N/A	1.20	240.17	0.17	0 00:05	0.00	0.00
2	Inlet-02	0.33	0.33	N/A	N/A	N/A	0.66	240.10	0.10	0 00:05	0.00	0.00
3	Inlet-03	0.53	0.53	N/A	N/A	N/A	1.06	240.15	0.15	0 00:05	0.00	0.00
4	Inlet-04	0.40	0.40	N/A	N/A	N/A	0.80	234.11	0.11	0 00:05	0.00	0.00
5	Inlet-05	2.62	2.62	1.40	1.22	53.42	9.61	232.25	0.28	0 00:05	0.00	0.00
6	Inlet-06	1.08	1.08	0.85	0.23	78.76	6.35	219.85	0.21	0 00:05	0.00	0.00
7	Inlet-07	1.81	1.81	1.14	0.66	63.35	8.11	217.09	0.25	0 00:05	0.00	0.00
8	Inlet-08	0.38	0.38	N/A	N/A	N/A	0.76	240.11	0.11	0 00:05	0.00	0.00
9	Inlet-09	0.39	0.39	N/A	N/A	N/A	0.78	240.11	0.11	0 00:05	0.00	0.00
10	Inlet-10	0.84	0.84	N/A	N/A	N/A	1.67	240.24	0.24	0 00:05	0.00	0.00
11	Inlet-11	0.50	0.50	N/A	N/A	N/A	0.99	240.14	0.14	0 00:05	0.00	0.00
12	Inlet-12	5.88	5.88	N/A	N/A	N/A	18.43	215.98	0.98	0 00:08	0.00	0.00
13	Inlet-13	1.89	1.89	1.18	0.71	62.32	8.32	213.74	0.25	0 00:05	0.00	0.00
14	Inlet-14	4.05	4.05	N/A	N/A	N/A	20.71	213.81	1.41	0 00:00	0.00	0.00
15	Inlet-15	5.82	5.82	N/A	N/A	N/A	18.25	191.93	0.93	0 00:02	0.00	0.00
16	Inlet-16	5.50	5.50	N/A	N/A	N/A	17.38	181.06	1.06	0 00:07	0.00	0.00
17	Inlet-17	0.33	0.33	N/A	N/A	N/A	0.65	212.60	0.10	0 00:05	0.00	0.00
18	Inlet-18	0.08	0.08	N/A	N/A	N/A	0.15	187.92	0.02	0 00:05	0.00	0.00
19	Inlet-19	0.15	0.15	N/A	N/A	N/A	0.30	180.04	0.04	0 00:05	0.00	0.00
20	Inlet-20	0.93	0.93	N/A	N/A	N/A	1.87	173.77	0.27	0 00:00	0.00	0.00
21	Inlet-21	0.40	0.40	N/A	N/A	N/A	3.00	180.16	0.16	0 00:05	0.00	0.00
22	Inlet-22	4.54	4.54	N/A	N/A	N/A	14.64	181.06	1.06	0 00:07	0.00	0.00
23	Inlet-23	2.44	2.44	1.35	1.09	55.27	9.31	174.80	0.27	0 00:05	0.00	0.00
24	Inlet-24	5.66	5.66	N/A	N/A	N/A	11.53	177.17	2.32	0 00:00	0.00	0.00
25	Inlet-25	2.46	2.46	1.36	1.11	54.99	9.35	212.47	0.27	0 00:05	0.00	0.00
26	Inlet-26	2.94	2.94	N/A	N/A	N/A	9.66	215.04	1.04	0 00:06	0.00	0.00
27	Inlet-27	3.51	3.51	N/A	N/A	N/A	11.49	211.05	1.05	0 00:03	0.00	0.00
28	Inlet-28	3.25	3.25	N/A	N/A	N/A	10.66	211.02	1.02	0 00:06	0.00	0.00
29	Inlet-29	2.79	2.79	1.45	1.34	51.87	9.89	207.02	0.28	0 00:05	0.00	0.00
30	Inlet-30	0.67	0.67	0.54	0.12	81.76	4.11	204.03	0.14	0 00:05	0.00	0.00
31	Inlet-31	2.89	2.89	N/A	N/A	N/A	9.47	214.88	0.88	0 00:04	0.00	0.00
32	Inlet-32	0.46	0.46	N/A	N/A	N/A	0.91	218.06	0.13	0 00:04	0.00	0.00
33	Inlet-33	0.38	0.38	N/A	N/A	N/A	0.76	209.78	0.11	0 00:04	0.00	0.00
34	Inlet-34	3.13	3.13	N/A	N/A	N/A	10.28	211.05	1.05	0 00:06	0.00	0.00
35	Inlet-35	0.23	0.23	N/A	N/A	N/A	0.46	203.96	0.07	0 00:05	0.00	0.00
36	Inlet-36	0.46	0.46	N/A	N/A	N/A	3.38	199.18	0.18	0 00:04	0.00	0.00
37	Inlet-37	0.86	0.86	0.70	0.16	81.76	5.30	198.72	0.18	0 00:06	0.00	0.00
38	Inlet-38	1.69	1.69	N/A	N/A	N/A	10.41	198.72	0.82	0 00:00	0.00	0.00
39	Inlet-39	4.11	4.11	N/A	N/A	N/A	13.40	205.48	0.98	0 00:07	0.00	0.00
40	Inlet-40	1.52	1.52	N/A	N/A	N/A	1.96	196.04	0.54	0 00:03	0.00	0.00
41	Inlet-41	3.02	3.02	N/A	N/A	N/A	9.92	204.85	1.05	0 00:03	0.00	0.00
42	Inlet-42	0.98	0.98	N/A	N/A	N/A	0.28	200.70	0.25	0 00:03	0.00	0.00
43	Inlet-43	1.70	1.70	1.10	0.60	64.82	7.85	199.48	0.24	0 00:03	0.00	0.00
44	Inlet-44	0.36	0.36	N/A	N/A	N/A	0.72	204.10	0.10	0 00:05	0.00	0.00
45	Inlet-45	0.19	0.19	N/A	N/A	N/A	0.05	199.38	0.05	0 00:03	0.00	0.00
46	Inlet-46	0.06	0.06	N/A	N/A	N/A	0.02	195.69	0.02	0 00:03	0.00	0.00
47	Inlet-47	3.01	3.01	2.33	0.68	77.36	10.25	195.61	0.29	0 00:05	0.00	0.00
48	Inlet-48	1.88	1.88	1.18	0.71	62.39	8.30	201.90	0.25	0 00:05	0.00	0.00
49	Inlet-49	0.55	0.55	N/A	N/A	N/A	1.10	204.16	0.16	0 00:05	0.00	0.00
50	Inlet-50	0.36	0.36	N/A	N/A	N/A	0.72	194.37	0.10	0 00:05	0.00	0.00
51	Inlet-51	1.93	1.93	1.19	0.74	61.85	8.42	193.75	0.25	0 00:05	0.00	0.00
52	Inlet-52	2.94	2.94	N/A	N/A	N/A	9.64	210.92	0.92	0 00:06	0.00	0.00
53	Inlet-53	2.37	2.37	N/A	N/A	N/A	7.61	210.73	0.98	0 00:06	0.00	0.00
54	Inlet-54	0.72	0.72	N/A	N/A	N/A	1.43	190.61	0.21	0 00:05	0.00	0.00
55	Inlet-55	0.53	0.53	N/A	N/A	N/A	1.06	190.85	0.15	0 00:05	0.00	0.00
56	Inlet-56	4.18	4.18	1.77	2.40	42.45	11.74	193.19	0.32	0 00:05	0.00	0.00
57	Inlet-57	1.72	1.72	N/A	N/A	N/A	10.56	198.64	0.84	0 00:05	0.00	0.00

MAP POCKET 1

Drainage Study Map
for
Main Street at Carmel Valley
[Pre-project]

NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION
6				12			
5				11			
4				10			
3				9			
2				8			
1	09-23-10	MO	ORIGINAL	7			

Leppert Engineering
CORPORATION
5190 Governor Drive, Suite 205, San Diego, Ca. 92122-2848
Phone: (858) 597-2001 Fax: (858) 597-2009

APPROVED BY ENGINEER OF WORK: JOHN D. LEPPERT
REGISTRATION R C E: 26283
FILE CODE:
DATE:

PREPARATION AND REVISION LOG

DRAINAGE BASIN MAP FOR:
ONE PASEO
EXISTING CONDITIONS

MAP POCKET 2

Drainage Study Map
for
Main Street at Carmel Valley
[Post-project]

NO.	DATE	BY	DESCRIPTION	NO.	DATE	BY	DESCRIPTION
6				12			
5				11			
4				10			
3				9			
2	11–14–12	MO	REVISION	8			
1	09–23–10	MO	ORIGINAL	7			

Leppert Engineering
CORPORATION
5190 Governor Drive, Suite 205, San Diego, Ca. 92122–2848
Phone: (858) 597–2001 Fax: (858) 597–2009

APPROVED BY ENGINEER OF WORK JOHN D. LEPPERT
REGISTRATION R C E 26283
FILE CODE
DATE

PREPARATION AND REVISION LOG

DRAINAGE BASIN MAP FOR:
ONE PASEO
PROPOSED CONDITIONS

Appendix I

WATER QUALITY TECHNICAL REPORT

WATER QUALITY TECHNICAL REPORT
FOR
ONE PASEO
(Preliminary Engineering)

Prepared for:

Kilroy Realty Inc.
3611 Valley Centre Drive, Suite 550
San Diego, CA 92130
(858) 523-0300

Prepared by:

Leppert Engineering Corporation
5190 Governor Drive, Suite 205
San Diego, CA 92122-2848
(858) 597-2001
LEC Job No.: NCW 14.01-09.08

PTS No. 193036

November 14, 2012

Anthony M. Dieli 11/20/12

By: Anthony Dieli
RCE 31615
Exp. 12/31/14

REGISTERED PROFESSIONAL ENGINEER
ANTHONY MICHAEL DIELI
C-031615
CIVIL
STATE OF CALIFORNIA

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

MAP POCKETS

1.0 INTRODUCTION

This water quality technical report (WQTR) summarizes storm water protection requirements for the One Paseo project (herein referred to as "the project") in support of the plans titled, "One Paseo." The project is located southwest of the intersection at Del Mar Heights Road and El Camino Real, in the City of San Diego. See Figure 1, Vicinity Map, located at the end of Section 1.0. The planned development will include a mixed-use center directly across from Del Mar Highlands. The proposed center will include office and retail space, 608 residential units, a cinema, two commercial office towers on the lowest elevation of the site and a 25,000- to 30,000-square-foot full service market, such as Whole Foods or Gelson's. The plan would also include public improvements to Del Mar Heights Road and El Camino Real which include median and widening work in addition to adding two new signal lights on Del Mar Heights Road to provide safe ingress and egress to the center.

This WQTR describes the permanent storm water Best Management Practices (BMPs) that will be incorporated into the project in order to mitigate the impacts of pollutants in storm water runoff from the proposed project. For the purposes of post-construction storm water quality management, such as incorporating Low Impact Development (LID) concepts and treating anticipated pollutants at "medium" to "high" removal efficiencies, the project will follow the guidelines and requirements set forth in the City of San Diego's "San Diego Municipal Code Land Development Manual-Storm Water Standards: A Manual for Construction & Permanent Storm Water Best Management Practices Requirements," dated January 14, 2011 (herein "Storm Water Standards Manual") adopted by the City of San Diego.

1.1. Priority Development Project

The project is a "Priority Development Project," based on the Storm Water Standards Manual. The project applies to the following priority development project categories based on the City of San Diego's Storm Water Requirements Applicability Checklist: detached or attached residential development of 10 or more units, commercial development greater than 1 acre, restaurant, parking lots greater than or equal to 5,000 square feet or with at least 15 parking spaces, and potentially exposed to urban runoff, and streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater. A copy of the Storm Water Requirements Applicability Checklist for the One Paseo project is located in Appendix A of this WQTR.

1.2. Land Use and Drainage Characteristics

1.2.a. Pre-project Condition

The pre-project condition for the project consists of an undeveloped, mass graded site per grading plan DWG No. 23217-D. There are two major drainage basins (i.e. western basin and eastern basin) that outlet into the public storm drain along El Camino Real via separate points of connection.

The western basin drains in a southerly direction toward El Camino Real. This basin is further subdivided approximately in half and designed to drain into two temporary sediment basins which outlet the site into the public storm drain along El Camino Real via a temporary private storm drain system.

The eastern basin drains in a southerly direction toward El Camino Real. This basin is further subdivided approximately in half and designed to drain into two temporary sediment basins which outlet the site into the public storm drain along El Camino Real via a temporary private storm drain system.

Both temporary on-site private storm drains discharge into the existing 66-inch public storm drain in El Camino Real which flows southwesterly into a regional detention basin as described in “Drainage Study, North City West Employment Center, Entire Precise Plan Area, dated February, 1984 by Rick Engineering Company.”

1.2.b. Post-Project Condition

The post-project development will be a mixed-use center consisting of office, retail, commercial, and residential buildings, underground/aboveground parking structures, private roadways, “hardscape” and “softscape" landscaping, and public improvements to Del Mar Heights Road and El Camino Real.

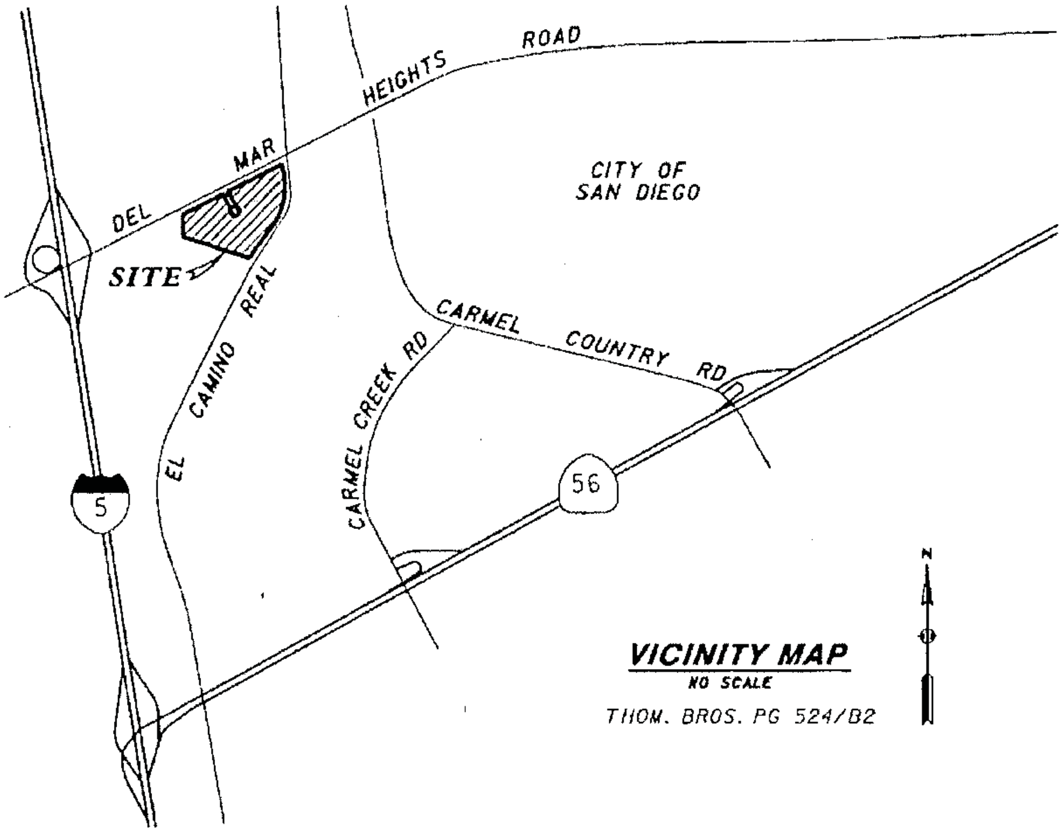
In the post-project condition, there are three major drainage basins (i.e. northern, western, and eastern basins) that outlet into the public storm drain along El Camino Real via separate points of connection.

The western basin consists of approximately 9.39 acres and drains in a southeasterly direction toward El Camino Real. The upper portion of this basin consists of off-site public roadway drainage which will enter the private on-site storm drain system at Third Avenue. The on-site private storm drain system will be designed to convey the off-site roadway drainage and private on-site runoff from throughout the drainage basin.

The northern basin consists of approximately 9.31 acres and drains in an easterly direction toward El Camino Real. This drainage basin consists of a drainage system similar to that described above except that the off-site roadway drainage will enter the private system at First Avenue. The on-site private storm drain system will be designed to convey the off-site roadway drainage and private on-site runoff from throughout the drainage basin.

The eastern basin consists of approximately 3.52 acres and drains in a easterly direction toward El Camino Real. The on-site private storm drain system will be designed to convey the private on-site runoff from throughout the drainage basin.

Figure 1 Vicinity Map



2.0 IDENTIFICATION OF POLLUTANTS AND CONDITIONS OF CONCERN

Section 4 of the City of San Diego’s Storm Water Standards Manual outlines the procedure for the selection of permanent storm water BMPs. The procedure includes “Identification of Anticipated Project Pollutants,” and “Identification of Pollutants of Concern for the Receiving Water,” as described in Sections 4.1.5 and 4.1.6, respectively, of the Storm Water Standards Manual. This Section of WQTR addresses each step from Sections 4.1.5 and 4.1.6.

2.1. Identification of Anticipated Project Pollutants

Table 4-1 of the Storm Water Standards Manual, “Anticipated and Potential Pollutants Generated by Land Use Type,” identifies general pollutant categories that are either anticipated or potential pollutants for general project categories. The following general project categories listed in Table 4-1 apply to the project: “Attached Residential Development,” “Commercial Development,” “Restaurants,” “Parking Lots,” and “Streets, Highways & Freeways.” Table 4-1 of the Storm Water Standards Manual is renamed as Table 2.1 and reproduced on the following page, with the Priority Development Project categories applicable to the project highlighted.

Based on the highlighted rows, the anticipated pollutants generated from the project include sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides.

Table 2.1 Anticipated and Potential Pollutants Generated by Land Use Type

	General Pollutant Categories								
General Project Categories	Sediments	Nutrients	Heavy Metals	Organic Compounds	Trash & Debris	Oxygen Demanding Substances	Oil & Grease	Bacteria & Viruses	Pesticides
Housing Development	X	X			X	X	X	X	X
Attached Residential Development	X	X			X	P(1)	P(2)	P(1)	X
Commercial Development	P(1)	P(1)		P(2)	X	P(5)	X	P(3)	P(5)
Industrial Development	X	P(1)	X(4)(5)	X	X	X	X		
Automotive Repair Shops			X	X(4)(5)	X		X		
Restaurants					X	X	X	X	
Steep Hillside Developments	X	X			X	X	X		X
Parking Lots	P(1)	P(1)	X		X	P(1)	X		P(1)
Streets, Highways & Freeways	X	P(1)	X	X(4)	X	P(5)	X		
Retail Gasoline Outlets (RGO)			X	X	X	X	X		

X= anticipated
P= potential
(1) A potential pollutant if landscaping exists on-site.
(2) A potential pollutant if the project includes uncovered parking areas.
(3) A potential pollutant if land use involves food or animal waste products
(4) Including petroleum hydrocarbons.
(5) Including solvents.

Source: City of San Diego "San Diego Municipal Code Land Development Manual - Storm Water Standards: A Manual for Construction & Permanent Storm Water Best Management Practices Requirements," dated January 14, 2011.

2.2. Identification of Pollutants of Concern for the Receiving Water

Based on Section 4.1.6 of the Storm Water Standards Manual, to identify pollutants of concern in receiving waters, the following analysis shall be conducted and reported in the project's WQTR: (1) for each of the proposed project discharge points, identify the receiving water(s), including hydrologic unit basin number(s), as identified in the most recent version of the "Water Quality Control Plan for the San Diego Basin," prepared by the RWQCB; (2) identify any receiving waters included in the "2006 CWA Section 303(d) List of Water Quality Limited Segments" approved by the SWRCB on October 25, 2006. List all pollutants for which the receiving waters are impaired; and (3) identify any receiving waters for which Total Maximum Daily Loads (TMDL) have been developed. List all pollutants for which the TMDL was developed.

2.2.a. Identification of Receiving Waters

According to the "Water Quality Control Plan for the San Diego Basin (9)," adopted by the California Regional Water Quality Control Board San Diego Region on September 8, 1994 approved by the SWRCB on December 13, 1994 (Basin Plan); the proposed project is located within the Miramar Reservoir Hydrologic Area within the Peñasquitos Hydrologic Unit. The corresponding number designation is 906.10 (Region '9', Hydrologic Unit '06', Hydrologic Area '10'). An exhibit has been provided in Appendix B of this report titled 'Hydrologic Unit for One Paseo," which shows the project location in reference to the Hydrologic Subarea 906.10.

The storm water runoff from the site will be conveyed via existing storm drain system along El Camino Real, and ultimately outfalls into the Los Peñasquitos Lagoon. Los Peñasquitos Lagoon eventually discharges into the Pacific Ocean.

2.2.b. Identification of Receiving Water Impairments

On October 25, 2006, the SWRCB approved the 2006 CWA Section 303(d) List of Water Quality Limited Segments (303(d) List). Subsequently on November 30, 2006, the United States Environmental Protection Agency (USEPA) approved the SWRCB's inclusion of all waters and pollutants identified for the San Diego region in its 2006 List of Water Quality Limited Segments. The receiving water for the project that is currently listed as impaired based on the 2006 303(d) List is the Los Peñasquitos Lagoon. The pollutants/stressors causing impairment of the Los Peñasquitos Lagoon are sedimentation/siltation.

2.2.c.Receiving waters with developed TMDL

Los Peñasquitos Lagoon does not have any developed Total Maximum Daily Loads.

3.0 PERMANENT STORM WATER BEST MANAGEMENT PRACTICES (BMPS)

The following discussion addresses requirements of Section 4 of the Storm Water Standards Manual, to establish permanent BMPs. Projects subject to standard or Priority Development Project requirements shall implement all applicable source control and low impact development BMPs listed in Sections 4.2 and 4.3, respectively, of the Storm Water Standards Manual. Projects subject to Priority Development Project requirements must also implement treatment control BMPs and hydromodification management per Sections 4.4 and 4.5, respectively, of the Storm Water Standards Manual.

Sections 3.1 through 3.4 of this WQTR will discuss the permanent storm water BMPs proposed for the project.

3.1. Source Control BMPs

The term "source control BMP" refers to land use or site planning practices, or structures that aim to prevent urban runoff pollution by reducing the potential for contamination at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff. The following text discusses the source control BMPs from Section III.B.2 of the Storm Water Standards Manual with respect to the project. Italicized text is taken directly from the Storm Water Standards Manual, and reproduced for this report. Portions of the italicized text are condensed from the Storm Water Standards Manual. Immediately following and written in regular text, will be the response as it applies to the project.

a. *Maintenance Bays*

Maintenance bays are not proposed for this project.

b. *Vehicle & Equipment Wash Areas*

Vehicle and equipment wash areas are not proposed for the project.

c. *Outdoor Processing Areas*

Outdoor processing areas are not proposed for the project.

d. *Retail and Non-Retail Fueling Areas*

Fueling areas are not proposed for the project.

e. *Steep Hillside Landscaping*

- *Steep hillside areas disturbed by project development shall be landscaped with deep-rooted, drought tolerant and/or native plant species selected for erosion control, in accordance with the Landscape Technical Manual.*

Steep hillside areas are not proposed for the project.

f. *Use Efficient Irrigation Systems & Landscape Design*

Limited exclusion: detached residential homes.

- *Employ rain shutoff devises to prevent irrigation during and after precipitation in accordance with City of San Diego landscape requirements. Design irrigation systems to each landscape area's specific water requirements.*
- *Use flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.*

Irrigation systems for the project will be designed pursuant to the guidelines shown above.

g. *Design Trash Storage Areas to Reduce Pollution Introduction*

- *Trash storage areas shall be:(I) paved with an impervious surface, designed not to allow run-on from adjoining areas, and screened or walled to prevent off-site transport of trash; and (2) contain attached lids on all trash containers that exclude rain; or (3) contain a roof or awning to minimize direct precipitation Limited exclusion: detached residential homes.*

Trash storage areas for the project will be designed pursuant to the guidelines shown above.

h. *Design Outdoor Materials Storage Areas to Reduce Pollution Contribution*

- *Materials with the potential to contaminate urban runoff shall be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with rain, runoff or spillage to the storm water conveyance system; and (2) hazardous materials shall be protected by secondary containment structures such as berms, dikes, or curbs. The storage area shall be paved and sufficiently impervious to contain leaks and spills, and have a roof or awning to minimize direct precipitation within the secondary containment area.*

The project does not propose any outdoor hazardous material storage areas. If these conditions change it is the responsibility of the project site owner/operator to ensure that outdoor materials storage will be designed pursuant to the guidelines shown above.

i. *Design Loading Docks to Reduce Pollution Contribution*

There are no exterior dock areas proposed for this project.

j. *Employ Integrated Pest Management Principles*

Integrated pest management (IPM) is an ecosystem-based pollution prevention strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as a biological control, habitat manipulation, modification of cultural practices, and use of resistant plant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. More information can be obtained at the UC Davis website (http://www.ipm.ucdavis.edu/WATER/U/index.html)

- *Eliminate and/or reduce the need for pesticide use in the project design by: (1) plant pest-resistant or well-adapted plant varieties such as native plants; and (2) Discourage pests by modifying the site and landscaping design. Pollution prevention is the primary "first line of defense" because pollutants that are never used do not have to be controlled or treated (methods which are inherently less efficient).*
- *Distribute IPM educational materials to future site residents/tenants. Minimally, educational materials must address the following topics: (1) Keeping pests out of buildings and landscaping using barriers, screens, and caulking; (2) Physical pest elimination techniques, such as, weeding squashing, trapping, washing, or pruning out pests; (3) Relying on natural enemies to eat pests; (4) Proper use of pesticides as a last line of defense. More information can be obtained at the UC Davis website (http://www.ipm.ucdavis.edu/WATER/U/index.html).*

The project will include Integrated Pest Management in the accordance with the above guidelines. The party responsible to ensure implementation and funding of maintenance of permanent BMPs will be responsible to require IPM to be implemented in the landscape design and maintenance.

k. *Provide Storm Water Conveyance System Stamping and Signage*

- *Provide concrete stamping, or equivalent, of all storm water conveyance system inlets and catch basins within the project area with prohibitive language (e.g., "No Dumping-I Live in <<name receiving water>>"), satisfactory to the City Engineer. Stamping may also be required in Spanish.*
- *Post signs and prohibitive language and/or graphical ions, which prohibit illegal dumping at public access points along channels and creeks within the project area, trailheads, parks and building entrances.*

Concrete stamping, or the equivalent, with prohibitive language will be provided for curb inlets, catch basins, and any Brooks Box inlets located within the project site. The owner will confirm stenciling language and design with the City of San Diego before implementation. There are no channels and/or creeks within the project area; therefore signage does not apply to this project.

l. *Manage Fire Sprinkler system Discharges*

- *For new buildings with fire sprinkler systems, design fire sprinklers to enable operational maintenance and testing to be contained and discharged to the sanitary sewer system.*

The fire sprinkler systems will be designed pursuant to the guidelines shown above.

m. *Manage Air Conditioning Condensate*

- *Direct air conditioning condensate to the sanitary sewer system.*
- *Direct air conditioning condensate to landscaping areas.*

Air conditioning condensate will be managed pursuant to the guidelines shown above.

n. *Use Non-Toxic Roofing Materials Where Feasible*

- *Avoid the use of galvanized steel or copper for roofs, gutter, and downspouts.*
- *If using such materials, reduce the potential for leaching of metals by applying a coating or patina.*
- *Avoid composite roofing materials that contain copper.*

Non-toxic roofing materials will be used where feasible.

o. *Other Source Control Requirements*

- *Require implementation of post-construction soil stabilization practices, such as the re-vegetation of construction sites, in conformance with the approved Landscaping Plan and Grading Plans.*
- *Provide for pet waste collection dispensers where applicable.*
- *Restrict the use of galvanized and copper roofing materials.*

The above requirements will be implemented where feasible.

3.2. Low Impact Development (LID) BMPs

The term low impact development (LID) means a storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions. The following text discusses the low impact development BMPs from Section 4.3 of the Storm Water Standards Manual with respect to the project.

1. *Optimize the Site Layout:*
    - The proposed development utilizes the existing topography to minimize grading.
    - The proposed development utilizes the site's natural drainage pattern.
    - The proposed development utilizes the "flatter" areas of the site.
2. *Minimize Impervious Footprint:*
    - The proposed development proposes multi-story structures to increase building density.
    - The proposed development utilizes minimum width requirements for streets and parking lots in order to minimize impervious footprint.
    - The proposed development utilizes a shared driveway for access.
    - The proposed development proposes indoor and underground parking.
3. *Disperse Runoff to Adjacent Landscaping and IMPs.*
    - Where feasible, the proposed development will drain rooftops into adjacent landscaping.
    - Runoff from the site will be directed to vaults sized to satisfy hydromodification management plan requirements.
4. *Design and Implementation of Pervious Surfaces.*
    - No permeable surfaces have been proposed for this site.
5. *Construction Considerations.*
    - Soil Compaction of landscaped areas will not be proposed due to the location of the landscaped areas in relation to the proposed structures.
    - Soil Amendments are not proposed for this development due to the location of the landscaped areas in relation to the proposed structures.
6. *Additional Considerations.*
    - All disturbed soils, slopes and permanent channel crossings will be vegetated to stabilize the site per the approved Grading and Landscaping plans.
    - Runoff will be directed away from the top of slopes.

3.3. Treatment Control BMPs

Structural treatment control BMP facilities are designed to remove pollutants contained in storm water runoff. Methods of pollutant removal include sedimentation settling, filtration, plant uptake, ion exchange, absorption, and bacterial decomposition. Floatable pollutants such as oil, debris, and scum can be removed with separator structures. Treatment control facilities may need to be used in series as a "Treatment Train" to achieve the desired level of pollutant removal for different pollutants.

Pursuant to Section 4.4 of Storm Water Standards Manual, after LID site design and source control BMPs have been incorporated into the project design, applicants of Priority Development Projects shall design treatment control BMPs designed to infiltrate, filter, and/or treat runoff from the project areas requiring treatment. These treatment control BMPs shall be sized to numeric sizing treatment standards listed in Section 4.4.4. of the Storm Water Standards Manual. The required LID BMPs may be applied towards the numeric sizing treatment standards satisfactory to the City Engineer.

Pursuant to Section 4.4 of the Storm Water Standards Manual, Priority Development Projects shall select a single or combination of treatment BMPs from the categories in Table 4-3 of the Storm Water Standards Manual that maximize pollutant removal for the particular pollutants of concern. This means that the selected treatment control BMPs must collectively provide minimum pollutant removal efficiencies of “medium” or “high” for all pollutants of concern.

Table 4-3 of the Storm Water Standards Manual, “Structural BMP Treatment Control Selection Matrix,” provides a guide for treatment control BMP selection. Table 4-3 is renamed as Table 3.1and reproduced below. The anticipated pollutants applicable to the project are highlighted.

Table 3.1 Structural BMP Treatment Control Selection Matrix

BMP	LID	HMP Control	Sediment	Nutrients	Trash	Metals	Bacteria	Oils and Grease	Organics
Infiltration Basin	Y	Y	H	H	H	H	H	H	H
Bioretention Basin	Y	Y	H	M	H	H	H	H	H
Cistern Plus Bioretention	Y	Y	H	M	H	H	H	H	H
Vault plus Bioretention	Y	Y	H	M	H	H	H	H	H
Self-retaining Area	Y	Y	H	H	H	H	H	H	H
Dry Wells	Y	Y	H	H	H	H	H	H	H
Constructed Wetlands	Y	Y	H	M	H	H	H	H	H
Extended Detention Basin	Y	Y	M	L	H	M	M	M	M
Vegetated Swale	Y	N	M	L	L	M	L	M	M
Vegetated Buffer Strips	Y	N	H	L	M	H	L	H	M
Flow-Through Planter Boxes	Y	Y	H	M	H	H	H	H	H
Vortex Separator or Wet Vault	N	N	M	L	M	L	L	L	L
Media Filter	N	N	H	L	H	H	M	H	H

H – High removal efficiency
M – Medium removal efficiency
L – Low removal efficiency

The following discussion identifies the treatment control BMPs proposed for the project, pursuant to the structural treatment BMP selection procedure described in Section 4.4.1 of the Storm Water Standards Manual. The procedure requires that pollutant removal be maximized for any anticipated pollutant from the project site for which the project/s receiving waters are listed as impaired based on the Clean Water Act Section 303(d) List.

As discussed in Section 2, the following are the project's pollutant of concern: sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides. The Low Impact Development (LID) site design, source control, and treatment control BMPs will be designed to treat these pollutants at "medium" to "high" removal efficiencies.

Phosphate and total dissolved solids (nutrients) will be managed using source control BMPs which can be more effective than treatment. The landscaped areas will be managed with source controls to prevent off-site transport of nutrients by runoff. Source controls will include designing the landscape and irrigation system in accordance with current standard of care for landscape areas, and ensuring on-going maintenance of the landscape and irrigation system. These source controls will also be effective for reducing transport of sediment from the project site.

In addition to the LID site design and source control BMPs concepts, for the purposes of Treatment Control BMPs, all of the BMPs listed in the Storm Water Standards Manual Table 4-3 were evaluated. It was determined that the most practicable treatment BMP would be media filtration units with bypass capability for higher flows located upstream of underground vaults.

The following treatment control BMPs were selected:

- Three (3) – Imbrium Jellyfish® Filter Systems, or equivalent.

The Jellyfish® was selected for the project based on the following considerations:

- Per Table 4-3 of the Storm Water Standards Manual, Media filters (of which these classify), have a Medium or High efficiency rating for all pollutants of concern other than "nutrients". With regards to "nutrients", the manufacturer of the Jellyfish® Filter System states that the system "removes a high percentage of particulate-bound pollutants including nutrients, metals, hydrocarbons and bacteria." These filters have been chosen for their proven ability to capture and retain pathogens, metals, nutrients, sediment, and other target constituents.
- All runoff from the project site, including the off-site improvement areas in Del Mar Heights Road, are collected and conveyed to two discharge locations. Therefore, use of an underground treatment system at each of the two locations allows all collection points throughout the project to receive the same high level of treatment provided by these units.
- It has been located at the three discharge locations to facilitate easy access for ongoing inspection and maintenance activities, ensuring continued functionality of the units.
- Several of the large-footprint surface-based BMP types were found to be infeasible due to the limited amount of space available on the project site, including infiltration basins, wet ponds, wetlands, and extended detention basins.
- The footprint of the building and underground structures cover the majority of the site and restrict use of infiltration-based BMPs as well. However, as described earlier, LID vegetated swales for flow-through filtering and pre-treatment have been provided throughout the landscape design, where feasible.

The Jellyfish® is a flow-based BMP. Therefore, they have been sized using a flow-based numeric sizing criteria to meet the requirements of the Storm Water Standards Manual. The treatment flow rate is determined pursuant to numeric sizing criteria listed in Section 4.4.4 “Numeric Sizing Requirements for Treatment control BMPs,” of the Storm Water Standards Manual, the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch rainfall per hour for each hour of a storm event.

The rational method equation was used to determine the treatment flow rate.

- Rational method equation: Q = CIA
- ‘Q’ is the treatment flow rate in the cubic feet per second (cfs),
- ‘C’ is the weighted runoff coefficient for the drainage area,
- ‘I’ is the rainfall intensity in inches per hour (in/hr) [0.2 in/hr per flow-based numeric sizing criteria], and
- ‘A’ is the drainage area is acres (ac).

The calculations for water quality treatment flow rates are included in Appendix C of this report. A detail of the Jellyfish® and manufacturer’s information are included in Appendix D. Locations of the Jellyfish® are shown on the exhibit titled “Water Quality Technical Report Exhibit for One Paseo” located in Map Pocket 1.

3.4. Hydromodification Management

Per Section 4.5 of the Storm Water Standards Manual, Priority Development Projects must be designed so that runoff rates and durations are controlled to maintain or reduce pre-project downstream erosion conditions and protect stream habitat. Hydromodification controls are required to be implemented for the proposed project in accordance with the HMP Decision Matrix from Section 4.5.1 of the Storm Water Standards Manual.

The method chosen to meet the hydromodification requirement is vaults. The project site was divided into three drainage basins, each of which will have its own vault, see Map Pocket 1. The storage volumes necessary to meet HMP requirements were calculated using the San Diego County BMP Sizing Calculator available online at http://uknow.brwncald.com/wastewater/MapOL.aspx. The online calculator generated minimum vault volumes and maximum orifice sizes of, see Appendix F:

West Basin = 73,735 CF with 2 inch orifice
East Basin = 30,600 CF with 1 inch orifice
North Basin = 95,327 CF with 2 inch orifice

The vaults will be constructed using the StormTrap® DoubleTrap® system, or equivalent, see Appendix H. The maximum DoubleTrap® height of 11' 4" will be used for each of the three vaults, so sizing for required volume is achieved by adjust the surface area of the vault. The path of flow to and from the vaults is as follows:

- After treatment, the runoff flows through a pipe that connects near the top of the vault.
- The runoff drops down a calming inlet into the vault.
- During typical operation the runoff will discharge from the vault through an orifice connected to the low end of the vault. The orifice connects at the bottom of the lowest area of the vault.
- If the vault becomes full during a large storm event, runoff will discharge through an overflow pipe (equivalent in size to the inlet pipe) connected near the top of the vault near the orifice.
- Both the orifice and overflow pipes discharge to separate cleanouts located just downstream of the vault. The orifice runoff flows from the vault to a cleanout with a pump that pumps the runoff up to an elevation where it can then gravity flow to the cleanout that the overflow pipe connects to. From this cleanout both the orifice and overflow runoff gravity flow to their eventual discharge point to the public storm drain system in El Camino Real.

4.0 OPERATION & MAINTENANCE PLAN

The owner of the project will enter into a Storm Water Management and Discharge Control Maintenance Agreement (SWMDCMA) with the City of San Diego to ensure maintenance of permanent BMPs for the project. The SWMDCMA will be prepared upon final design of the project.

4.1. Maintenance Responsibility

The owner of the project is the site operator and will be the party responsible to ensure implementation and funding of maintenance of permanent BMPs.

It is anticipated that the owner of the project will manage multiple separate maintenance contracts for different types of maintenance (e.g., landscape maintenance vs. maintenance of the BMPs). Throughout this section, the owner of the project is the “party responsible to ensure implementation and funding of maintenance of permanent BMPs.” The party who actually performs the activities is the “inspector,” “maintenance contractor,” or “maintenance operator.”

4.2. Inspection and Maintenance Activities

4.2.a. Inspection and Maintenance Activities for LID and Source Control BMPs

The following LID and source control BMPs for the project requires permanent maintenance: concrete stamping, landscaped areas (including vegetated swales), and irrigation systems within the landscaped areas. The discussions below provide inspection criteria, maintenance indicators, and maintenance activities for the above-listed LID and source control BMPs that require permanent maintenance.

Concrete Stamping

Inspection/maintenance of the concrete stamping may be performed by the building/facilities maintenance contractor as applicable. In addition, there may be storm drain maintenance contractors who will perform this service for a fee.

During inspection, the inspector(s) shall check for the maintenance indicators given below:

- *Faded, vandalized, or otherwise unreadable concrete stamping.*

There are no routine maintenance activities for the concrete stamping. If inspection indicates the concrete stamping is intact, no action is required.

If inspection indicates the concrete stamping is not legible, the concrete stamping shall be repaired or replaced as applicable.

Landscaped Areas

Inspection and maintenance of the vegetated areas may be performed by the landscape maintenance contractor.

During inspection, the inspector shall check for the maintenance indicators given below:

- Erosion in the form of rills or gullies
- Ponding water
- Bare areas or less than 70% vegetation cover
- Animal burrows, holes, or mounds
- Trash

Routine maintenance of vegetated areas shall include mowing and trimming vegetation, and removal and proper disposal of trash.

If erosion, ponding water, bare areas, poor vegetation establishment, or disturbance by animals are identified during the inspection, additional (non-routine) maintenance will be required to correct the problem. For ponding water or erosion, see also inspection and maintenance measures for irrigation systems. In the event that any non-routine maintenance issues are persistently encountered such as poor vegetation establishment, erosion in the form of rills or gullies, or ponding water, the party responsible to ensure that maintenance is performed in perpetuity shall consult a licensed landscape architect or engineer as applicable.

As applicable, IPM procedures must be incorporated in any corrective measures that are implemented in response to damage by pests. This may include using physical barriers to keep pests out of landscaping; physical pest elimination techniques, such as, weeding, squashing, trapping, washing, or pruning out pests; relying on natural enemies to eat pests; or proper use of pesticides as a last line of defense. More information can be obtained at the UC Davis website *(http://www.ipm.ucdavis.edu/WATER/U/index.html)*

Irrigation Systems

Inspection and maintenance of the irrigation system may be performed by the landscape maintenance contractor.

During inspection, the inspector shall check for the maintenance indicators given below:

- Eroded areas due to concentrated flow
- Ponding water
- Broken sprinkler heads or pipes

Refer to proprietary product information for the irrigation system for routine maintenance activities for the irrigation system, as applicable. If none of the maintenance indicators listed above are identified during inspection of the irrigation system, no other action is required.

If any of the maintenance indicators listed above are identified during the inspection, additional (non-routine) maintenance will be required to restore the irrigation system to an operable condition. If inspection indicates breaks of leaks in the irrigation lines or individual sprinkler heads, the affected portion of the irrigation system shall be repaired. If inspection indicates eroded areas due to concentrated flow from the irrigation system, the eroded areas shall be repaired and the irrigation system shall be adjusted or repaired as applicable to prevent further erosion. If inspection indicates ponding water resulting from the irrigation system, the irrigation system operator shall identify the cause of the ponded water and adjust or repair the irrigation system as applicable to prevent ponding water. Refer to proprietary product information for the irrigation system for other non-routine maintenance activities as applicable.

4.2.b. Inspection and Maintenance Activities for Treatment Control BMPs

The treatment control BMPs proposed for the project consists of three (3) Jellyfish® systems. The Jellyfish® systems are located upstream of the storm water detention vaults along El Camino Real (i.e. one for the northern drainage basin, one for the western drainage basin, and another one for the eastern drainage basin). The discussions below provide inspection criteria, maintenance indicators, and maintenance activities for the Jellyfish®.

Jellyfish® (Media Filter)

Inspection/maintenance of the Jellyfish® must be performed by properly trained personnel. Maintenance of the Jellyfish® involves handling of potentially hazardous material. Therefore the Jellyfish® maintenance operator must be trained in handling and disposal of hazardous waste. The party responsible to ensure implementation and funding of maintenance of permanent BMPs will be responsible to select a maintenance contractor for maintenance of the Jellyfish® who meets this requirement, and to contract for additional cleaning and disposal services as necessary if non-routine cleaning and disposal is required. There are several storm drain cleaning service providers who are able to inspect and/or maintain this product.

During inspection, the inspector shall check for the maintenance indicators given below:

- If sediment accumulates beyond 12 inches in depth, filter cartridge life and sediment removal efficiency may be reduced.
- If filter cartridges become saturated with sediment, the system may not provide filtration treatment at the designed water quality flow rate, and unfiltered water may bypass the filter cartridges.
- If an oil spill(s) exceeds the oil capacity of the system, subsequent spills may not be captured and may cause fouling of the filter cartridges.
- If debris clogs the inlet of the system, removal efficiency of sediment, hydrocarbons, and gross pollutants may be reduced.
- If a downstream blockage occurs, a backwater condition may occur in the system and removal efficiency of sediment, hydrocarbons, and gross pollutants may be reduced.

For optimum performance, the unit should be cleaned out once the sediment depth reaches 12 inches of accumulation. Generally, the minimum cleaning frequency is once annually, although the frequency can be based on historical inspection results. Filter cartridges should be cleaned and re-commissioned, or replaced, every 12 months or when the automatic backwash feature no longer functions, whichever occurs first. The automatic backwash function will be disabled if the filter cartridges become saturated with sediment. This saturated condition is indicated if the backwash pool contains more than 3 inches depth of water after 12 or more hours of dry weather have elapsed since the most recent rainfall/runoff event. The unit should be cleaned out immediately after an oil, fuel or chemical spill.

4.3. Inspection and Maintenance Frequency

Table 4.1 below lists the BMPs to be inspected and maintained and the minimum frequency of inspection and maintenance activities.

Table 4.1 Summary Table of Inspection and Maintenance Frequency

BMP	Inspection Frequency	Maintenance Frequency
Concrete Stamping	Annual	As-needed based on maintenance indicators in Section 4.2.1
Landscaped Areas	Monthly	Routine mowing and trimming and trash removal: monthly Non-routine maintenance as-needed based on maintenance indicators in Section 4.2.1
Irrigation Systems	Monthly	As-needed based on maintenance indicators in Section 4.2.1
Jellyfish® Filter System	Annual	Once 12 inches of sediment accumulates (typically 3 years)

The frequencies given in the Summary Table of Inspection and Maintenance Frequency are minimum recommended frequencies for inspection and maintenance activities for the project. Typically, the frequency of maintenance required for permanent BMPs is site and drainage area specific. If it is determined during the regularly scheduled inspection and/or routine maintenance that a BMP requires more frequent maintenance (e.g., to remove accumulated trash) it may be necessary to increase the frequency of inspection and/or routine maintenance. If it is determined during the regularly scheduled inspection that the maintenance thresholds are consistently met or exceeded, it may be necessary to increase the frequency of inspection and routine maintenance.

4.4. Estimated Maintenance Cost

The estimate maintenance cost for the Jellyfish® Treatment BMP is included in Appendix F.

4.5. Recordkeeping Requirements

The party responsible to ensure implementation and funding of maintenance of permanent BMPs shall maintain records documenting the inspection and maintenance activities. The records must be kept a minimum of 5 years and shall be made available to the City of San Diego for inspection upon request at any time.

5.0 SUMMARY

This water quality technical report (WQTR) summarizes storm water protection requirements for the One Paseo project. The planned development will be a mixed-use center consisting of office, retail, commercial, and residential buildings, underground/aboveground parking structures, private roadways, “hardscape” and “softscape” landscaping, and public improvements to Del Mar Heights Road and El Camino Real.

The following priority development project categories apply to the project based on the City of San Diego’s Storm Water Requirements Applicability Checklist: detached or attached residential development of 10 or more units, commercial development greater than 1 acre, restaurant, parking lots greater than or equal to 5,000 square feet or with at least 15 parking spaces, and potentially exposed to urban runoff, and streets, roads, highways, and freeways which would create a new paved surface that is 5,000 square feet or greater.

The proposed project is located in the Miramar Reservoir Hydrologic Area within the Peñasquitos Hydrologic Unit. The corresponding number designation is 906.10. The storm water runoff from the site will be conveyed via an existing storm drain system along El Camino Real until it outfalls into the Los Peñasquitos Lagoon. Los Peñasquitos Lagoon eventually discharges into the Pacific Ocean. The receiving waters for the project that are currently listed as impaired based on the 2006 303(d) List is the Los Peñasquitos Lagoon. The pollutants/stressors causing impairment of the Los Peñasquitos Lagoon are sedimentation/siltation.

The project can be expected to generate the following pollutants: sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses, and pesticides. Based on the selection procedure outlined in Section 4.4.1 of the Storm Water Standards Manual, the treatment control BMP(s) for the project should maximize pollutant removal for these anticipated pollutants of concern. The project will incorporate standard LID site design, source control, priority project category, and treatment control BMPs, which are described in Section 3 of this report. LID and source control BMPs include landscaped areas including vegetated swales, concrete stamping, and efficient irrigation systems within the landscaped areas.

The treatment control BMPs selected for the site, three (3) Jellyfish® Filter Systems from Imbrium Systems, were selected based on elevation of all treatment control BMPs listed in the Storm Water

Standards Manual. The Jellyfish® will treat for sediment, trash, heavy metals, oil and grease, and organics at a high level of removal efficiency, and bacteria and oxygen demanding substances at a medium level of removal efficiency. Jellyfish® will be provided as flow-based BMPs. The treatment flow rates are based on numeric sizing criteria from the Storm Water Standards Manual, the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inches per hour for each hour of a storm event.

The owner of the project will enter into a Storm Water Management and Discharge Control Maintenance Agreement (SWMDCMA) with the City of San Diego to ensure maintenance of permanent BMPs for the project. The following BMPs for the project require permanent maintenance: landscaped areas, concrete stamping, irrigation system, and Jellyfish® Filter System. The operation and maintenance information provided in Section 4 of this WQTR provides inspection criteria, maintenance indicators, and maintenance activities for the above-listed BMPs that require permanent maintenance.

APPENDIX A - Storm Water Requirements Applicability Checklist

for

One Paseo

THE CITY OF SAN DIEGO

City of San Diego
Development Services
1222 First Ave., MS-302
San Diego, CA 92101
(619) 446-5000

Storm Water Requirements Applicability Checklist

FORM
DS-560
JANUARY 2011

Project Address:
San Diego Corporate Center Lots 1 & 2 (Del Mar Heights Rd. & El Camino Real)

Project Number *(for City Use Only)*:

SECTION 1. Permanent Storm Water BMP Requirements:

Additional information for determining the requirements is found in the Storm Water Standards Manual.

Part A: Determine if Exempt from Permanent Storm Water BMP Requirements.

Projects that are considered maintenance, or are otherwise not categorized as "development projects" or "redevelopment projects" according to the Storm Water Standards manual are not required to install permanent storm water BMPs. **If "Yes" is checked for any line in Part A, proceed to Part C and check the box labeled "Exempt Project." If "No" is checked for all of the lines, continue to Part B.**

1. The project is not a Development Project as defined in the Storm Water Standards Manual: for example habitat restoration projects, and construction inside an existing building. ☐ Yes ☑ No

2. The project is only the construction of underground or overhead linear utilities. ☐ Yes ☑ No

3. The project qualifies as routine maintenance (replaces or renews existing surface materials because of failed or deteriorating condition). This includes roof replacement, pavement spot repairs and resurfacing treatments such as asphalt overlay or slurry seal, and replacement of damaged pavement. ☐ Yes ☑ No

4. The project only installs sidewalks, bike lanes, or pedestrian ramps on an existing road, and does not change sheet flow condition to a concentrated flow condition. ☐ Yes ☑ No

Part B: Determine if Subject to Priority Development Project Requirements.

Projects that match one of the definitions below are subject to additional requirements including preparation of a Water Quality Technical Report.
If "Yes" is checked for any line in Part B, proceed to Part C and check the box labeled "Priority Development Project." If "No" is checked for all of the lines, continue to Part C and check the box labeled "Standard Development Project."

1. **Residential development of 10 or more units.** ☑ Yes ☐ No

2. **Commercial development and similar non-residential development greater than one acre.** Hospitals; laboratories and other medical facilities; educational institutions; recreational facilities; municipal facilities; commercial nurseries; multi-apartment buildings; car wash facilities; mini-malls and other business complexes; shopping malls; hotels; office buildings; public warehouses; automotive dealerships; and other light industrial facilities. ☑ Yes ☐ No

3. **Heavy industrial development greater than one acre.** Manufacturing plants, food processing plants, metal working facilities, printing plants, and fleet storage areas. ☐ Yes ☑ No

4. **Automotive repair shop.** Facilities categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539. ☐ Yes ☑ No

5. **Restaurant.** Facilities that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC code 5812), and where the land area for development is greater than 5,000 square feet. ☑ Yes ☐ No

6. **Hillside development greater than 5,000 square feet.** Development that creates 5,000 square feet of impervious surface and is located in an area with known erosive soil conditions and where the development will grade on any natural slope that is twenty-five percent or greater. ☐ Yes ☑ No

7. **Water Quality Sensitive Area.** Development located within, directly adjacent to, or discharging directly to a Water Quality Sensitive Area (as depicted in Appendix C) in which the project either creates 2,500 square feet of impervious surface on a proposed project site or increases the area of imperviousness of a proposed project site to 10% or more of its naturally occurring condition. "Directly adjacent" is defined as being situated within 200 feet of the Water Quality Sensitive Area. "Discharging directly to" is defined as outflow from a drainage conveyance system that is composed entirely of flows from the subject development or redevelopment site, and not commingled with flows from adjacent lands. ☐ Yes ☑ No

8. **Parking lot with a minimum area of 5,000 square feet or a minimum of 15 parking spaces** and potential exposure to urban runoff (unless it meets the exclusion for parking lot reconfiguration on line 11). ☑ Yes ☐ No

9. **Street, road, highway, or freeway.** New paved surface in excess of 5,000 square feet used for the transportation of automobiles, trucks, motorcycles, and other vehicles (unless it meets the exclusion for road reconfiguration on line 11). ☑ Yes ☐ No

10. **Retail Gasoline Outlet (RGO)** that is: (a) 5,000 square feet or more or (b) has a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. ☐ Yes ☑ No

11. **Significant Redevelopment**; project installs and/or replaces 5,000 square feet or more of impervious surface and the existing site meets at least one of the categories above. The project is not considered Significant Redevelopment if reconfiguring an existing road or parking lot without a change to the footprint of an existing developed road or parking lot. The existing footprint is defined as the outside curb or the outside edge of pavement when there is no curb. ☐ Yes ☑ No

12. **Other Pollutant Generating Project.** Any other project not covered in the categories above, that disturbs one acre or more and is not excluded by the criteria below. ☐ Yes ☑ No

Projects creating less than 5,000 sf of impervious surface and where added landscaping does not require regular use of pesticides and fertilizers, such as slope stabilization using native plants. Calculation of the square footage of impervious surface need not include linear pathways that are for infrequent vehicle use, such as emergency maintenance access or bicycle pedestrian use, if they are built with pervious surfaces or if they sheet flow to surrounding pervious surfaces.

Part C: Select the appropriate category based on the outcome of Parts A & B.

1. If “Yes” is checked for any line in Part A, then check this box. Continue to Section 2. ☐ Exempt Project
2. If “No” is checked for all lines in Part A, and Part B, then check this box. Continue to Section 2. ☐ Standard Development Project
3. If “No” is checked for all lines in Part A, and “Yes” is checked for at least one of the lines in Part B, then check this box. Continue to Section 2. See the Storm Water Standards Manual for guidance on determining if Hydromodification Management Plan requirements apply. ☑ Priority Development Project

SECTION 2. Construction Storm Water BMP Requirements:
For all projects, complete Part D. If “Yes” is checked for any line in Part D, then continue to Part E.

Part D: Determine Construction Phase Storm Water Requirements.

1. Is the project subject to California’s statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities? (See State Water Resources Control Board Order No. 2009-0009-DWQ for rules on enrollment) ☑ Yes ☐ No
2. Does the project propose grading or soil disturbance? ☑ Yes ☐ No
3. Would storm water or urban runoff have the potential to contact any portion of the construction area, including washing and staging areas? ☑ Yes ☐ No
4. Would the project use any construction materials that could negatively affect water quality if discharged from the site (such as, paints, solvents, concrete, and stucco)? ☑ Yes ☐ No
5. Check this box if “Yes” is checked for line 1. Continue to Part E. ☑ SWPPP Required
6. Check this box if “No” is checked for line 1, and “Yes is checked for any line 2-4. Continue to Part E. ☐ WPCP Required
7. Check this box if “No” is checked for all lines 1-4. Part E does not apply. ☐ No Document Required

Part E: Determine Construction Site Priority
This prioritization must be completed with this form, noted on the plans, and included in the SWPPP or WPCP. The City reserves the right to adjust the priority of the projects both before and during construction. [Note: The construction priority does NOT change construction BMP requirements that apply to projects; rather, it determines the frequency of inspections that will be conducted by City staff.]

☑ 1. **High Priority**
   a) Projects where the site is 50 acres or more and grading will occur during the wet season
   b) Projects 1 acre or more and tributary to an impaired water body for sediment (e.g., Peñasquitos watershed)
   c) Projects 1 acre or more within or directly adjacent to or discharging directly to a coastal lagoon or other receiving water within a Water Quality Sensitive Area.
   d) Projects subject to phased grading or advanced treatment requirements.

☐ **2 Medium Priority**. Projects 1 acre or more but not subject to a high priority designation.

☐ **3 Low Priority.** Projects requiring a Water Pollution Control Plan but not subject to a medium or high priority designation.

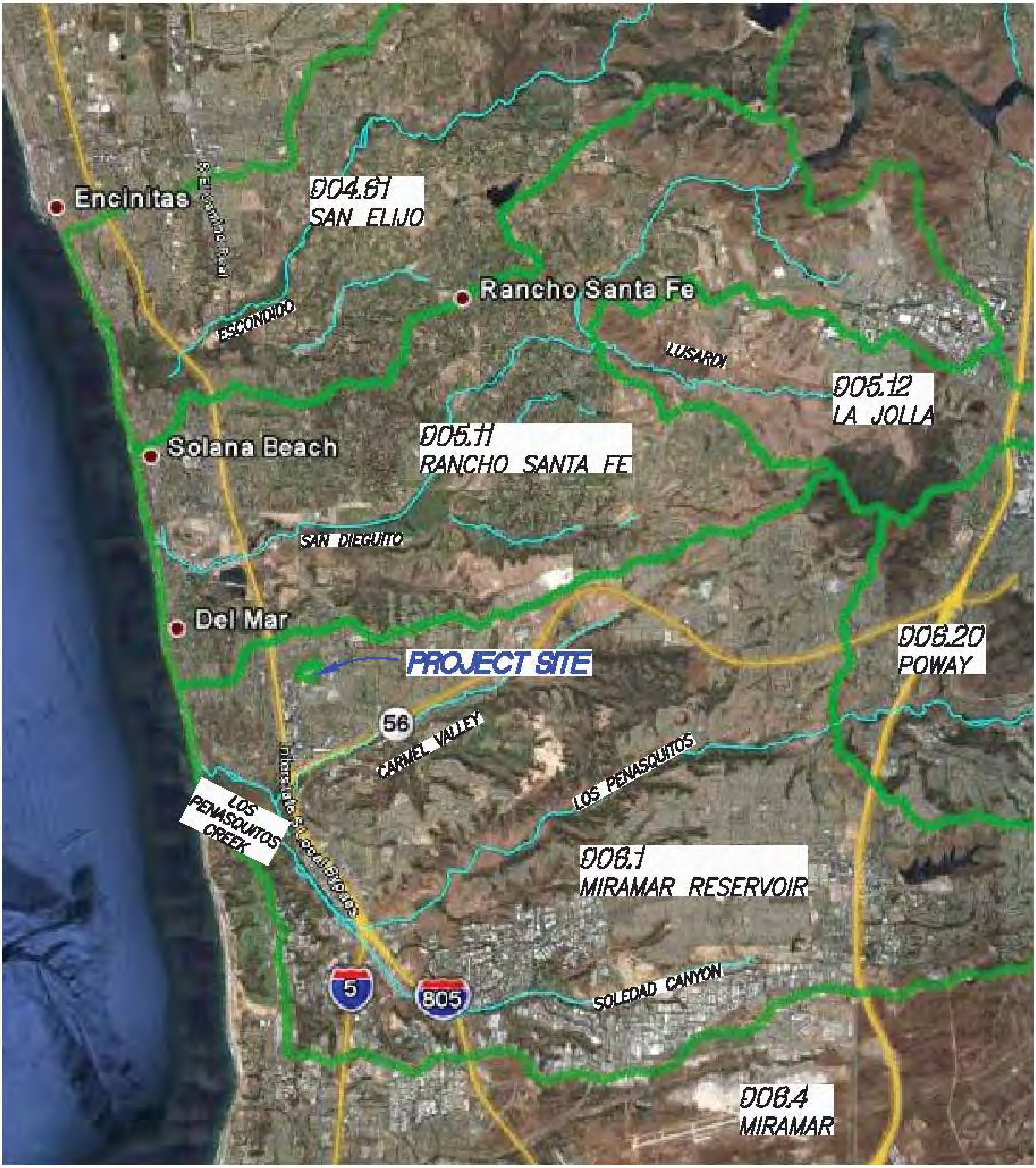
Name of Owner or Agent *(Please Print):* Title:

Signature: Date:

APPENDIX B - Hydrologic Unit Map

for

One Paseo



HYDROLOGIC UNIT FOR:

MAIN STREET AT CARMEL VALLEY

SCALE: N.T.S.

LEC JOB NO. NCW 14.01-09.08

DATE: 9.24.10

APPENDIX C - Water Quality Treatment Calculations

for

One Paseo

Water Quality Treatment Calculation for Jellyfish® Filter System

1. **Northern Basin 100**

Basin Area, A = 10.04 acres
Runoff Coefficient, C = 0.95
Treatment Rainfall Intensity, I = 0.2 in/hr

Q_{TRT} = Treatment Flow Rate (cfs)
Q_{TRT} = C x I x A (Rational Formula)
Q_{TRT} = 0.95 x 0.2 x 10.04 = 1.91 cfs

Use Jellyfish® Model No. JF8-10-2 (Capacity = 1.96 cfs)

2. **Western Basin 200**

Basin Area, A = 11.69 acres
Runoff Coefficient, C = 0.95
Treatment Rainfall Intensity, I = 0.2 in/hr

Q_{TRT} = Treatment Flow Rate (cfs)
Q_{TRT} = C x I x A (Rational Formula)
Q_{TRT} = 0.95 x 0.2 x 11.69 = 2.22 cfs

Use Jellyfish® Model No. JF10-11-3 (Capacity = 2.23 cfs)

3. **Eastern Basin 300**

Basin Area, A = 3.73 acres
Runoff Coefficient, C = 0.95
Treatment Rainfall Intensity, I = 0.2 in/hr

Q_{TRT} = Treatment Flow Rate (cfs)
Q_{TRT} = C x I x A (Rational Formula)
Q_{TRT} = 0.95 x 0.2 x 3.73 = 0.71 cfs

Use Jellyfish® Model No. JF6-4-1 (Capacity = 0.80 cfs)

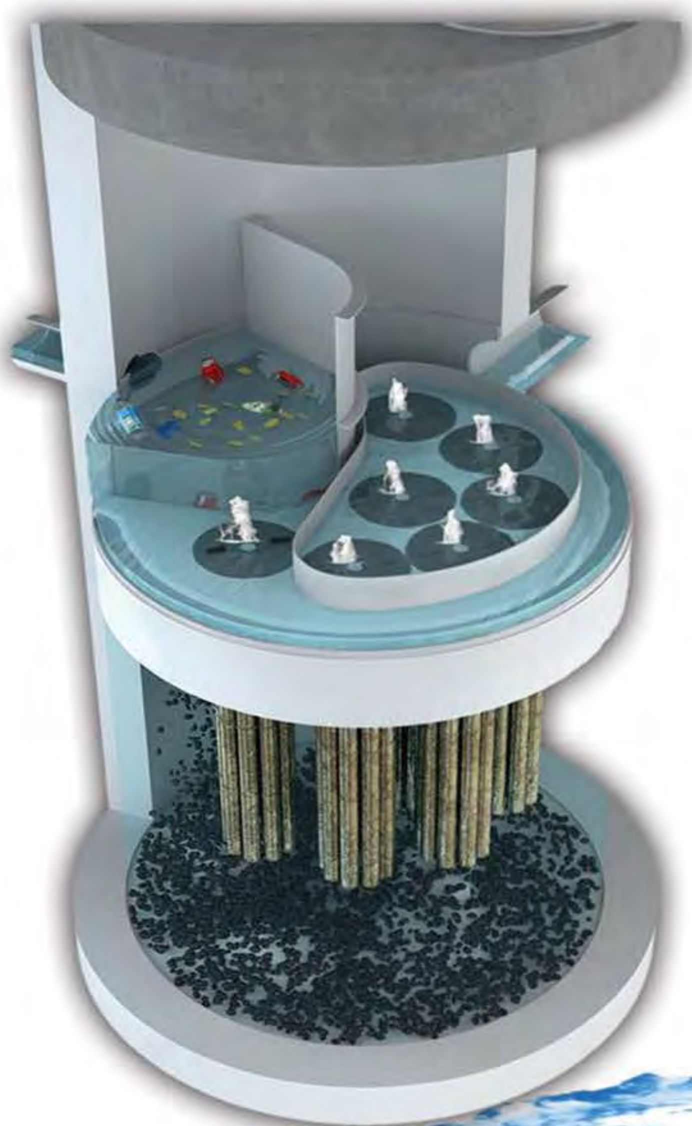
APPENDIX D - Literature and Details

for

Treatment Control Best Management Practices (BMPs)

(i.e. Jellyfish®)

Jellyfish® Filter
Technical Manual



imbrium®
Engineered Stormwater Treatment
www.imbriumsystems.com

Jellyfish® Filter

Highlights

The Jellyfish Filter (patent pending) is an engineered stormwater quality treatment technology featuring unique membrane filtration in a compact stand-alone treatment system that removes a high level and wide variety of stormwater pollutants. Exceptional pollutant removal is achieved at high treatment flow rates with minimal head loss and low maintenance costs. Each lightweight Jellyfish Filter cartridge contains an extraordinarily large amount of membrane surface area, resulting in superior flow capacity and pollutant removal capacity.

Jellyfish efficiently captures a high level of stormwater pollutants, including:

- ✓ Greater than 85% of the total suspended solids (TSS) load, including particles less than 5 microns
- ✓ Particulate-bound pollutants such as nutrients, toxic metals, hydrocarbons and bacteria
- ✓ Free oil
- ✓ Floatable trash and debris

Jellyfish® Filter Technical Manual

USA
Imbrium Systems
7564 Standish Place, Suite 112
Rockville, MD 20855

Phone: 301.279.8827
Toll Free: 888.279.8826

Canada/International
Imbrium Systems Inc.
2 St. Clair Avenue W., Suite 2100
Toronto, ON, M4V 1L5

Phone: 416.960.9900
Toll Free: 800.565.4801

www.imbriumsystems.com

Jellyfish® Filter Quick Glance

The Jellyfish Filter (patent pending) is an engineered stormwater quality treatment technology featuring unique membrane filtration in a compact stand-alone treatment system that removes a high level and wide variety of stormwater pollutants. Exceptional pollutant removal is achieved at high treatment flow rates with minimal head loss and low maintenance costs. Each lightweight Jellyfish filter cartridge contains an extraordinarily large amount of membrane surface area, resulting in superior flow capacity and suspended sediment removal capacity.

Jellyfish efficiently captures a high level of stormwater pollutants, including:

- Greater than 85% of the total suspended solids (TSS) load, including particles less than 5 microns
- Particulate-bound pollutants such as nutrients, toxic metals, hydrocarbons, and bacteria
- Free oil
- Floatable trash and debris

Jellyfish cartridges are passively backwashed automatically after each storm event, which removes accumulated sediment from the membranes and significantly extends the service life of the cartridges and the maintenance interval. If required, the cartridges can be easily manually backwashed without removing the cartridges. Additionally, the light-weight cartridges can be removed by hand and externally rinsed, and rinsed cartridges then re-installed. These simple maintenance options allow for cartridge regeneration, thereby minimizing cartridge replacement costs and life-cycle treatment costs while ensuring long-term treatment performance.

Jellyfish® Filter Patent Information

Jellyfish® Filter is Patent Pending

Table of Contents

Chapter 1

Chapter 2

Chapter 3

Chapter 4

Chapter 5

Chapter 6

Chapter 7

Chapter 8

Table of Contents

List of Figures

List of Tables

Table of Contents

Notes

Chapter 1

1.0 Imbrium® Systems Contact Information

Imbrium® Systems is an engineered stormwater treatment company that designs, develops, manufactures, and distributes post-construction stormwater quality treatment technologies, to protect water resources from pollutants. Imbrium has a strong record of environmental innovation in the industry as the creator of the Stormceptor® oil and sediment separator, the Jellyfish® Filter, Sorbtive®MEDIA, Sorbtive®FILTER, and Sorbtive®VAULT.

Imbrium Systems is a global company with U.S. headquarters (Imbrium Systems Corporation) located in Rockville, Maryland and Canadian and International headquarters (Imbrium Systems Incorporated and Imbrium International Limited) located in Toronto, Ontario, Canada.

The Jellyfish® Filter is represented by a variety of licensees and organizations globally.

For assistance, please contact Imbrium Systems at:
United States: 888-279-8826 or 301-279-8827
Canada / International: 800-565-4801 or 416-960-9900

Chapter 2

2.0 Jellyfish Filter Design Overview

This technical manual provides information for design and installation of the Jellyfish Filter. When designed properly in accordance with this Technical Manual, the Jellyfish Filter will exceed the performance and longevity of conventional horizontal bed and granular media filters.

Test data is available from Imbrium Systems upon request.

2.1 Jellyfish Filter Description

The Jellyfish Filter (patent pending) is an engineered stormwater quality treatment technology featuring unique membrane filtration in a compact stand-alone treatment system that removes a high level and wide variety of stormwater pollutants. Exceptional pollutant removal is achieved at high treatment flow rates with minimal head loss and low maintenance costs. Each lightweight Jellyfish Filter cartridge consists of multiple membrane-encased filter elements ("filtration tentacles") attached to a cartridge head plate. The filtration tentacles provide an extraordinarily large amount of surface area, resulting in superior flow capacity and suspended sediment removal capacity.

Jellyfish efficiently captures a high level of stormwater pollutants, including:

- Greater than 85% of the total suspended solids (TSS) load, including particles less than 5 microns
- Particulate-bound pollutants such as nutrients, toxic metals, hydrocarbons, and bacteria
- Free oil
- Floatable trash and debris

Jellyfish cartridges are passively backwashed automatically after each storm event, which removes accumulated sediment from the membranes and significantly extends the service life of the cartridges and the maintenance interval. If required, the cartridges can be easily manually backwashed without removing the cartridges. Additionally, the lightweight cartridges can be removed by hand and externally rinsed, and rinsed cartridges then re-installed. These simple maintenance options allow for cartridge regeneration, thereby minimizing cartridge replacement costs and life-cycle treatment costs while ensuring long-term treatment performance.

The Jellyfish Filter is comprised of several structural and functional components:

- A **cylindrical (manhole) or rectangular structure** constructed of either precast concrete or fiberglass, and available in a wide variety of sizes and configurations, serves as a vessel that provides long-lasting structural support for the system; provides hydraulic connections to the inlet and outlet pipes; provides surfaces for structural attachment of the cartridge deck and maintenance access wall; provides influent water storage and flow-through volume for pollutant separation and membrane filtration treatment; and provides a high-volume sump for storage of accumulated sediment.

- A rigid high-strength fiberglass **cartridge deck** separates the vessel into a lower chamber and upper chamber; houses the filter cartridges; provides a surface and flow path for treated water to the effluent pipe; provides double-wall containment of oil and other hydrocarbons below deck; and provides a platform for maintenance personnel to safely service the filter cartridges. The lower chamber provides influent water storage and flow-through volume for pollutant separation and membrane filtration treatment, and storage of accumulated sediment. The upper chamber provides above-deck clearance for inspection and maintenance service. The cartridge deck is securely attached to the vessel wall.

- A rigid high-strength fiberglass **maintenance access wall** attenuates influent water velocity; channels influent water into the lower chamber via a large opening in the cartridge deck; provides storage volume for floatable pollutants; and serves as a convenient inspection and maintenance access point for pollutant removal.

- **Cartridge receptacles** are secured to the cartridge deck and together with the cartridge lids, serve to securely anchor the filter cartridges into the cartridge deck.

- **Jellyfish membrane filtration cartridges** are inserted into the cartridge receptacles and secured with the cartridge lids. The filter cartridges treat the influent stormwater by filtering out fine suspended particulates (TSS) and particulate-bound pollutants on the membrane of each filtration tentacle. Filtered water passes through the membranes, flows up the center tube of each filtration tentacle and exits the top opening of each tentacle. Cartridges are available in various lengths and flow ratings. Filter cartridges are designated as either **hi-flo cartridges** or **draindown cartridges**, depending on their placement position within the cartridge deck. Cartridges placed within the backwash pool weir are automatically passively backwashed after each storm event, and are designated the hi-flo cartridges. Cartridges placed outside the backwash pool weir are not passively backwashed but facilitate the draindown of the backwash pool and these are designated the draindown cartridges. The design flow rate of a draindown cartridge is controlled by a cartridge lid orifice to one-half the design flow rate of a hi-flo cartridge of similar length. The lower design flow rate of the draindown cartridge reduces the likelihood of occlusion prior to scheduled maintenance.

- **Cartridge lids** are fastened onto the cartridge receptacles to securely anchor the filter cartridges into the cartridge deck. The lids are removable to allow manual backflushing or removal of the filter cartridges when required during maintenance service. Cartridge lids contain a **flow control orifice** that is specifically sized for use with hi-flo and draindown cartridges. **Blank lids** have no orifice and are used to cover unoccupied cartridge receptacles in systems that do not use the full rated flow capacity of the system.

- A **separator skirt** serves as a baffle that encloses the filtration tentacles and defines the filtration zone inside the separator skirt perimeter. The separator skirt extends the full length of the filtration tentacles and prevents contamination of the membranes with oil and floatable debris. The separator skirt has a large opening at the bottom that allows pre-treated water to enter the filtration zone under low velocity. The separator skirt is securely attached to the underside of the cartridge deck.

- A rigid fiberglass **backwash pool weir** extends 6 inches (150 mm) above the cartridge deck and encloses the hi-flo cartridges. During inflow, filtered water exiting the hi-flo cartridges forms a pool inside the weir. If sufficient driving head is available the pool overtops the weir and spills to the cartridge deck where it subsequently flows to the outlet pipe. As the inflow event subsides and forward driving head decreases, water inthe backwash pool reverses flow direction and automatically passively backwashes the hi-flo cartridges, cleaning the membrane surfaces. Water in the lower chamber (below deck) is displaced through the draindown cartridges. This self-cleaning mechanism may occur multiple times during a single storm event as rainfall/runoff intensities rise and fall, thereby significantly extending the service life of the cartridges and the maintenance interval.

- **Optional internal bypass pressure relief pipe(s)** can be placed in one or multiple cartridge receptacles. The pressure relief pipe height and diameter can be varied to accommodate the design peak flow rate and system driving head requirements. When the internal bypass option is utilized, peak flow rates receive membrane filtration treatment up to the filtration design flow rate, with the balance of the peak flow receiving pre-treatment.

- A **deflector plate** (below-deck inlet pipe manhole configuration only) is installed across the below-deck inlet pipe opening to induce tangential water flow through the pre-treatment channel between the vessel wall and separator skirt.

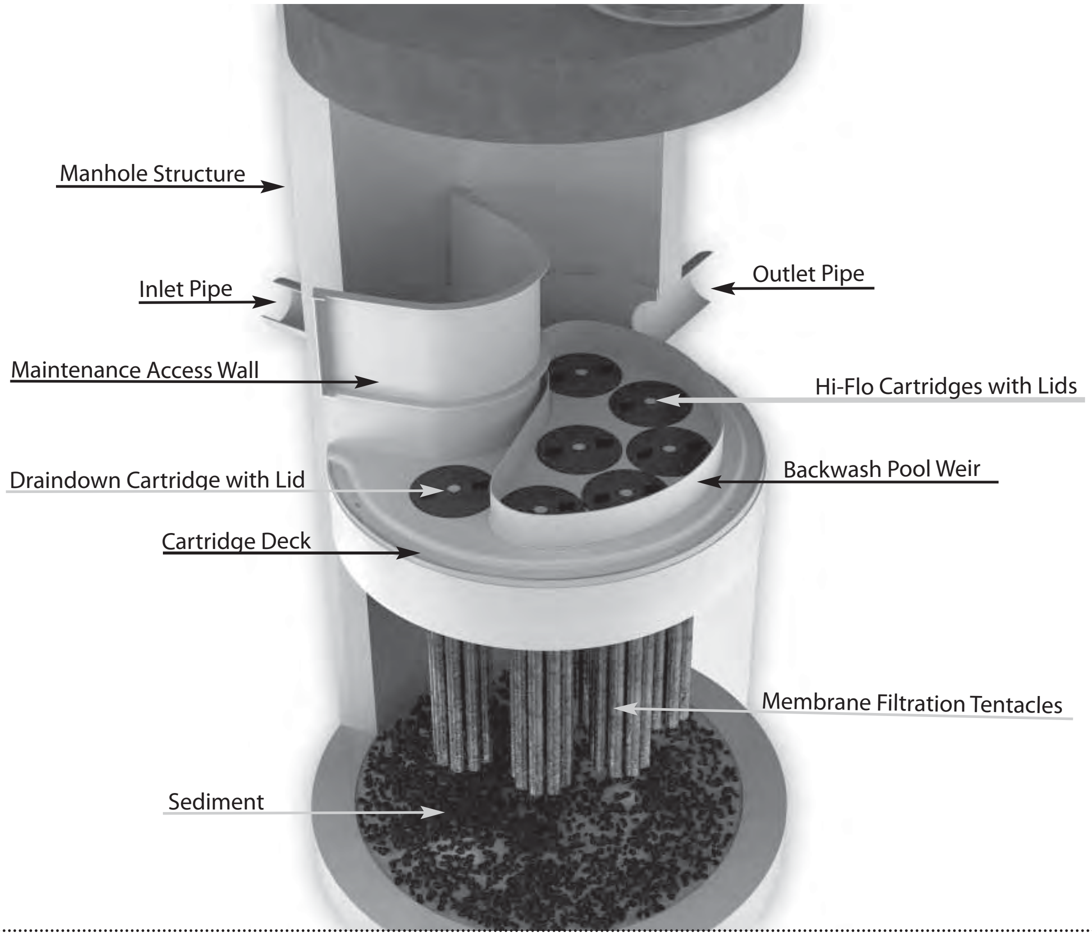
- **Standard covers, rectangular hatches, or inlet grates** are installed at the surface and are removed to allow maintenance access to the system.

- **Built-in steps or ladder(s)** allow maintenance personnel to access the cartridge deck and filter cartridges.

The Jellyfish Filter and components are depicted in **Figure 1.**

FIGURE 1

Jellyfish Filter and Components



Note: Separator Skirt Not Shown

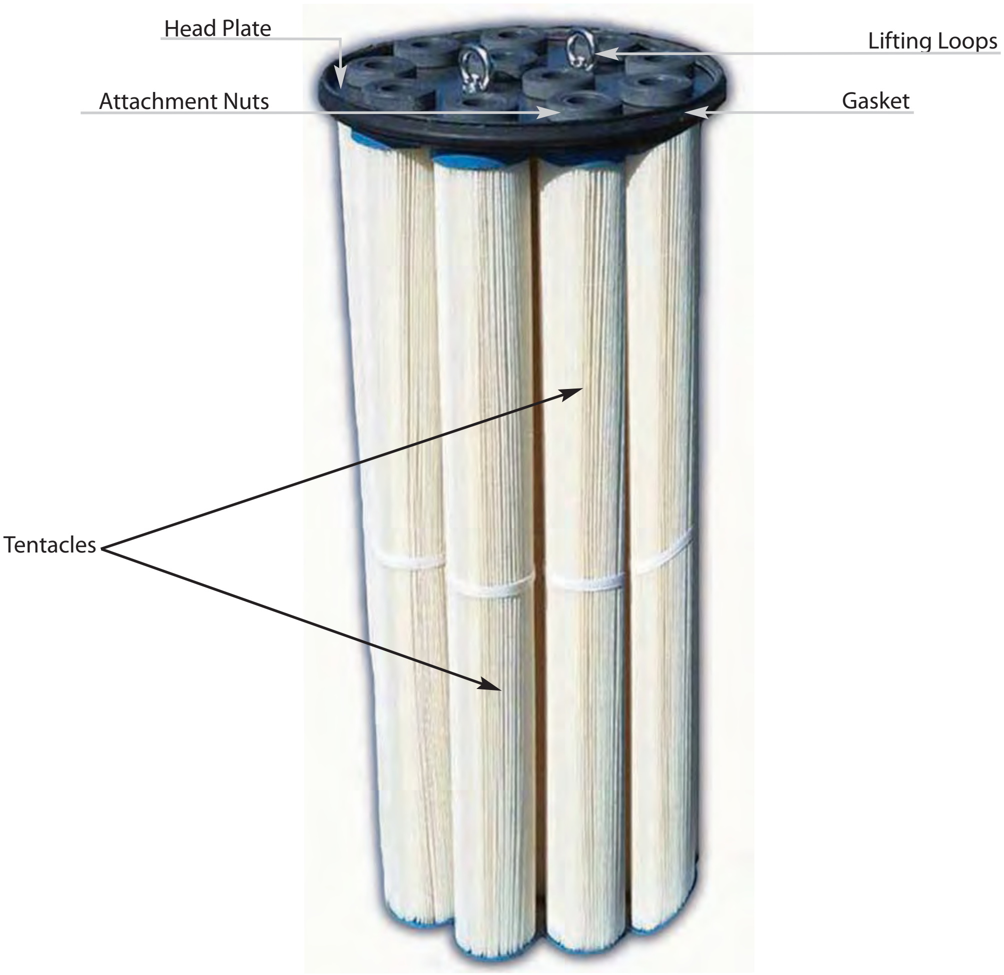
2.2 Jellyfish Membrane Filtration Cartridge

The Jellyfish Filter utilizes multiple lightweight membrane filtration cartridges. Each cartridge consists of multiple removable filter elements ("filtration tentacles") attached to a cartridge head plate. Each filtration tentacle consists of a central perforated tube surrounded by a specialized membrane. The cylindrical filtration tentacle has a threaded pipe nipple at the top and is sealed at the bottom with an end cap. A cluster of tentacles is attached to a stainless steel head plate by inserting the top pipe nipples through the head plate holes and securing with removable nuts. A removable oil-resistant polymeric rim gasket is attached to the head plate to impart a watertight seal when the cartridge is secured into the cartridge receptacle with the cartridge lid. A Jellyfish membrane filtration cartridge is depicted in **Figure 2**.

The cartridge length is typically either 27 inches (686 mm) or 54 inches (1372 mm), with options for custom lengths if required. The dry weight of a new cartridge is less than 20 pounds (9 kg), and the wet weight of a used cartridge is less than 50 pounds (23 kg), making a cartridge easy to install and remove by hand. No heavy lifting equipment is required.

FIGURE 2

Jellyfish Membrane Filtration Cartridge



The filtration tentacle membranes provide an extraordinarily large amount of surface area, resulting in superior flow capacity and suspended sediment removal capacity. A typical Jellyfish cartridge with eleven 54-inch (1372 mm) long filtration tentacles has 381 ft2 (35.4 m2) of membrane surface area. Hydraulic testing on a clean 54-inch (1372 mm) filter cartridge has demonstrated a flow rate of 180 gpm (11.3 L/s) at 18 inches (457 mm) of driving head.

Extensive third-party field testing, including testing at an urban site with very high intensity rainfall and runoff, has demonstrated consistently high pollutant removal performance with a conservative design flow rate of 80 gpm (5.0 L/s) for the 54-inch (1372 mm) long hi-flo cartridge and 40 gpm (2.5 L/s) for the 54-inch (1372 mm) long draindown cartridge. These values translate to a conservative design membrane filtration flux rate (flow per unit surface area) of 0.21 gpm/ft^2 (0.14 Lps/m^2) for the hi-flo cartridge and 0.11 gpm/ft^2 (0.07 Lps/m^2) for the draindown cartridge.

The standard membrane demonstrates removal of >85% of fine sediment at a design flux rate of 0.21 gpm/ft^2, based on laboratory testing with Sil-Co-Sil™106 which has a median particle size (d50) of 22 microns. In addition, the filtration tentacle membrane has anti-microbial characteristics that inhibit the growth of bio-film that might otherwise prematurely occlude the pores of the membrane and restrict hydraulic conductivity.

Hydraulic and sediment loading testing has demonstrated scalability of the membrane filtration surface area such that increases in the number and/or length of filtration tentacles contribute a uniform increase in total filter surface area and therefore flow capacity and sediment removal capacity. The flow rating of a particular Jellyfish Filter cartridge is based on the membrane filtration surface area of the cartridge and data collected from both laboratory testing and field testing.

The cartridge deck contains a receptacle for each filter cartridge. The cartridge is lowered down into the receptacle such that the cartridge head plate and rim gasket rest on the lip of the receptacle. A cartridge lid is fastened onto the receptacle to anchor the cartridge. Each cartridge lid contains a flow control orifice. The orifice in the hi-flo cartridge lid is larger than the orifice in the draindown cartridge lid.

Jellyfish Filter cartridges are designated as either hi-flo cartridges or draindown cartridges, depending on their placement position within the cartridge deck. Cartridges placed within the 6-inch (150 mm) high backwash pool weir that extends above the deck are automatically passively backwashed after each storm event and are designated as the hi-flo cartridges. Cartridges placed outside the backwash pool weir are not passively backwashed but facilitate the draindown of the backwash pool, and these are designated as the draindown cartridges. The design flow rate of a draindown cartridge is controlled by a cartridge lid orifice to one-half the design flow rate of a hi-flo cartridge of similar length. The lower design flow rate of the draindown cartridge reduces the likelihood of occlusion prior to scheduled maintenance.

Inflow events with driving head ranging from less than 1 inch (25 mm) up to the maximum design driving head will cause continuous forward flow and filtration treatment through the draindown cartridges. Inflow events with driving head that exceeds the 6-inch (150 mm) height of the backwash pool weir will cause continuous forward flow and filtration treatment through the hi-flo cartridges.

2.3 Jellyfish Filter Operation – Driving Head Requirement

A differential in upstream and downstream water elevation during an inflow event provides the minimal driving head required to overcome the minor cumulative friction loss through the system, at which point flow-through operation of the Jellyfish Filter commences.

For systems using an external bypass with upstream diversion structure, the driving head is calculated as the difference in elevation between the top of the diversion structure weir and the invert of the Jellyfish Filter outlet pipe. For systems using an internal bypass, the driving head is calculated as the difference in elevation between the top of the pressure relief pipe(s) and the invert of the outlet pipe.

A minimum design driving head is selected to achieve design flow rates, while accounting for gradual increase in system head loss at the design flow rate due to long-term accumulation of sediment on the filtration membranes. A clean Jellyfish Filter cartridge has flow capacity far in excess of the cartridge design flow rate at the design driving head. This ensures that design flow capacity is maintained during the period between maintenance service operations.

Typically, a minimum 18 inches (457 mm) of driving head is designed into the system but may vary from 12 to 24 inches (305 to 610 mm) depending on specific site requirements.

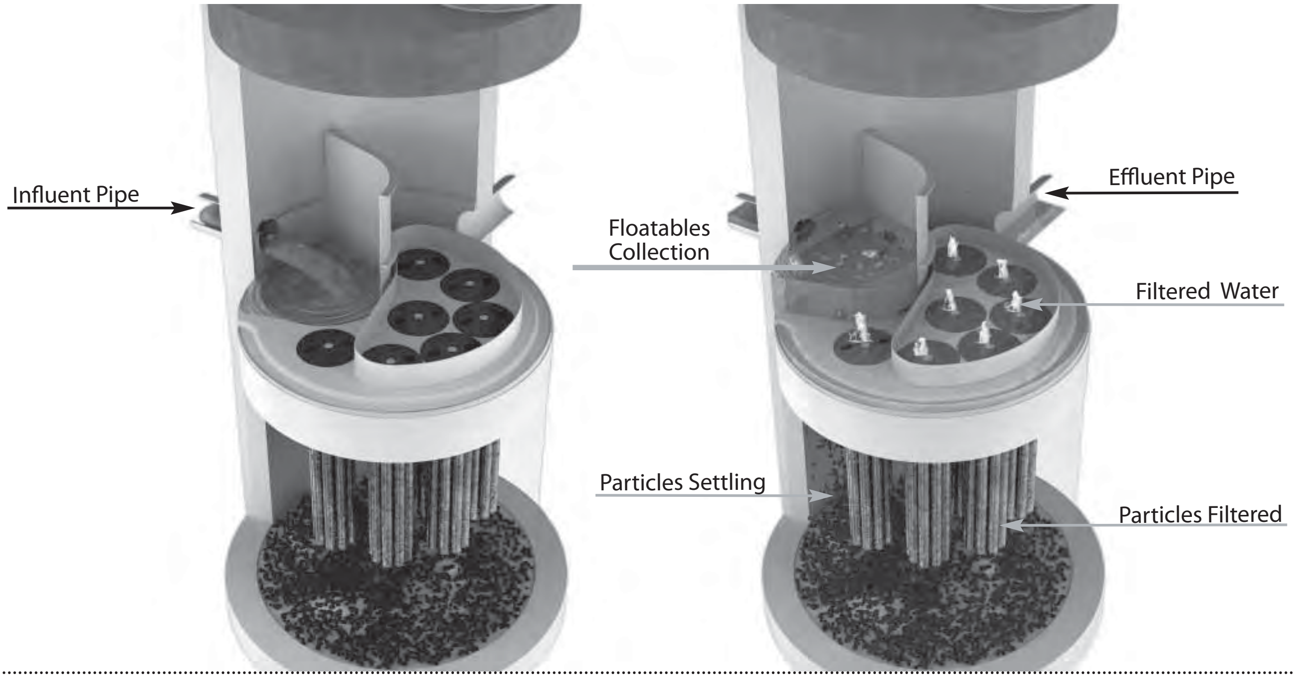
For systems that may experience submerged or backwater conditions due to dry weather base flow or tidal effects, driving head calculations must account for water elevation during the backwater condition. The Jellyfish Filter treatment functions will continue to operate during forward flow despite backwater conditions. An increase in the maintenance access wall height may be required to ensure floatables capture an increase in the height of the backwash pool weir may be required to ensure function of the automatic passive backwash feature.

2.4 Jellyfish Filter Operation – Treatment Functions

The Jellyfish Filter provides both **pre-treatment** and **membrane filtration** treatment to remove pollutants from stormwater runoff. These functions are depicted in **Figure 3** below.

FIGURE 3

Jellyfish Filter Treatment Functions
Pre-Treatment and Membrane Filtration
Section View with Maintenance Access Wall (MAW) Cutaway



Pre-treatment removes coarse sediment (generally > 50 microns), particulate-bound pollutants attached to coarse sediment (nutrients, toxic metals, hydrocarbons), free oil and floatable trash and debris. These pollutants are removed by gravity separation. Large, heavy particles fall to the sump (sedimentation) and low density pollutants rise to the surface (floatation) within the pre-treatment channel.

Pre-treatment begins when influent flow enters the system either through an above-deck inlet pipe (standard) or below-deck inlet pipe (optional). In the above-deck inlet pipe configuration, influent enters the maintenance access wall zone and is channeled through a large-diameter opening in the cartridge deck to the lower chamber. The large surface area of the deck opening and change in flow direction attenuate the influent flow velocity. Due to equalization of hydrostatic pressure and downstream pathway through the opening at the bottom of the separator skirt, influent flow spreads in lateral and downward directions throughout the pre-treatment channel between the vessel wall and the outer perimeter of the separator skirt. In the below-deck inlet pipe configuration, a deflector plate angled across the inlet pipe opening induces directional tangential flow in the pre-treatment channel. In either configuration, flow spreading throughout the pre-treatment channel serves to reduce the average flow velocity and enhance the separation of pollutants.

Pre-treatment for floatables occurs as buoyant pollutants rise toward the surface, with some of the floatables mass trapped beneath the cartridge deck in the pre-treatment channel. Most of the floatables mass accumulating in the maintenance access wall zone at the air-water interface. This feature allows convenient and easy inspection and maintenance for floatable contaminants. The separator skirt protects the filtration tentacles from contamination by oil and floatable debris.

Coarse sediment settles out of the pre-treatment channel to the sump. As water from the pre-treatment channel slowly flows downward and then laterally beneath the separator skirt, the combination of the large opening in the bottom of the separator skirt and a change in direction to an upward downstream flow path serves to further reduce average flow velocity and enhance particle separation. Sediment is stored in the sump until removed by vacuum during a maintenance service.

Membrane filtration treatment removes suspended particulates (generally < 50 microns) and particulate-bound pollutants (nutrients, toxic metals, hydrocarbons, and bacteria). Laboratory and field performance testing of the Jellyfish Filter have demonstrated capture of particulates as small as 2 microns.

Filtration treatment begins when pre-treated influent flows under the separator skirt and into the filtration zone through the large opening defined by the bottom edge of the separator skirt. Uniform hydraulic pressure gradient across the entire membrane surface area causes pre-treated water to penetrate the entire membrane surface area of each filtration tentacle. Water enters the membrane pores radially and deposits fine particulates on the exterior membrane surface. Filtered water flows into the perforated center drain tube of each filtration tentacle and then upward and out the top of each tentacle. Water exiting each of the tentacles of a single cartridge combines at the top of the cartridge under the cartridge lid. The combined flow then vertically exits the cartridge lid orifice with a pulsating fountain effect.

As a layer of sediment builds up on the external membrane surface, membrane pores are partially occluded which serves to reduce the effective pore size. This process, referred to as "filter ripening", significantly improves the removal efficiency of pollutants relative to a brand new or clean membrane of some nominal pore size. Filter ripening accounts for the ability of the JellyfishF ilter to remove particles finer than the nominal pore size rating of the membranes.

Jellyfish Filter operation and maintenance are depicted in an animation on Imbrium Systems website (www.imbriumsystems.com).

2.5 Jellyfish Filter Operation – Self-Cleaning Functions

The Jellyfish Filter utilizes several self-cleaning processes to remove accumulated sediment from the external surfaces of the filtration membranes, including **automatic passive backwash** of the hi-flo cartridges, **vibrational pulses**, and **gravity**. Combined, these processes significantly extend the cartridge service life, maintenance interval and reduce life-cycle costs.

Automatic passive backwash is performed on the hi-flo cartridge at the end of each runoff event and can also occur multiple times during a single storm event as intensity and driving head varies. During inflow, filtered water exiting the hi-flo cartridges forms a pool above the cartridge deck inside the backwash pool weir. The depth and volume of the backwash pool will vary with the available driving head, ranging from some minimal quantity up to a quantity sufficient to fill and overflow the backwash pool (typical weir height is 6 inches / 150 mm). As the inflow event subsides and forward driving head decreases, water in the backwash pool reverses flow direction and automatically passively backwashes the hi-flo cartridges, removing sediment from the membrane surfaces. Water in the lower chamber (below deck) is displaced through the draindown cartridges.

Vibrational pulses occur as a result of complex and variable pressure and flow direction conditions that arise in the space between the top surface of the cartridge head plate and the underside of the cartridge lid. During forward flow a stream of filtered water exits the top of each filtration tentacle into this space and encounters resistance from the cartridge lid and turbulent pool of water within the space. Water is forced through the cartridge lid flow control orifice with a pulsating fountain effect. The variable localized pressure causes pulses that transmit vibrations to the membranes, thereby dislodging accumulated sediment. The effect appears more pronounced at higher flow rates, and applies to both hi-flo and draindown cartridges.

Gravity continuously applies a force to accumulated sediment on the membranes, both during inflow events and inter-event dry periods. As fine particles agglomerate into larger masses on the membrane surface, adhesion to the membrane surface can lessen, and a peeling effect ensues which ultimately results in agglomerates falling away from the membrane. Complex chemical and biological effects may also play a role in this process.

Chapter 3

3.0 Jellyfish Filter Design Guidelines

The Jellyfish Filter has many flexible design features to accommodate a wide range of specific site requirements and constraints. For design assistance, please contact Imbrium Systems.

3.1 Configurations and Design Capacities

Design flow capacities and pollutant capacities for standard Jellyfish Filter manhole configurations are shown in **Tables 1** and **2**.

The Jellyfish Filter standard model numbers provide information about the manhole inside diameter (expressed in U.S. customary units) and cartridge counts for hi-flo and draindown cartridges. For example, Jellyfish Filter Model Number JF6-4-1 is a 6-ft (1.8 m) diameter manhole with four hi-flo cartridges and one draindown cartridge. Standard model numbers assume the use of 54-inch (1372 mm) long cartridges. Specific designations for non-standard structures or cartridge lengths are noted in the **Jellyfish Filter Owner's Manual**.

Table 1
Design Flow Capacities
Standard Jellyfish Filter Manhole Configurations

Manhole Diameter (ft / m)[1]	Model No.	Hi-Flo Cartridges[2] 54 in / 1372 mm	Draindown Cartridges[2] 54 in / 1372 mm	Treatment T Flow Rate (gpm / cfs)	reatment Flow Rate (L/S)
4 / 1.2	**JF4-2-1**	**2**	**1**	**200 / 0.45**	**12.6**
6 / 1.8	**JF6-3-1**	**3**	**1**	**280 / 0.62**	**17.7**
	JF6-4-1	4	1	360 / 0.80	22.7
	JF6-5-1	5	1	440 / 0.98	27.8
	JF6-6-1	6	1	520 / 1.16	32.8
8 / 2.4	**JF8-6-2**	**6**	**2**	**560 / 1.25**	**35.3**
	JF8-7-2	7	2	640 / 1.43	40.4
	JF8-8-2	8	2	720 / 1.60	45.
	JF8-9-2	9	2	800 / 1.78	50.5
	JF8-10-2	10	2	880 / 1.96	55.5
10 / 3.0	**JF10-11-3**	**11**	**3**	**1000 / 2.23**	**63.1**
	JF10-12-3	12	3	1080 / 2.41	68.1
	JF10-12-4	12	4	1120 / 2.50	70.7
	JF10-13-4	13	4	1200 / 2.67	75.7
	JF10-14-4	14	4	1280 / 2.85	80.8
	JF10-15-4	15	4	1360 / 3.03	85.8
	JF10-16-4	16	4	1440 / 3.21	90.8
	JF10-17-4	17	4	1520 / 3.39	95.9
	JF10-18-4	18	4	1600 / 3.56	100.9
	JF10-19-4	19	4	1680 / 3.74	106
12 / 3.6	**JF12-20-5**	**20**	**5**	**1800 / 4.01**	**113.6**
	JF12-21-5	21	5	1880 / 4.19	118.6
	JF12-22-5	22	5	1960 / 4.37	123.7
	JF12-23-5	23	5	2040 / 4.54	128.7
	JF12-24-5	24	5	2120 / 4.72	133.8
	JF12-25-5	25	5	2200 / 4.90	138.8
	JF12-26-5	26	5	2280 / 5.08	143.8
	JF12-27-5	27	5	2360 / 5.26	148.9

[1] Smaller and larger systems may be custom designed

[2] Shorter length cartridge configurations are available

Table 2
Design Pollutant Capacities
Standard Jellyfish Filter Manhole Configurations

Model Diameter (ft / m)	Wet Volume Below Deck (ft^3 / L)	Sediment Capacity[1] (ft^3 / L)	Oil Capacity[2] (gal / L)
JF4			
4 / 1.2	82 / 2313	12 / 0.34	100 / 379
JF6			
6 / 1.8	184 / 5205	28 / 0.79	224 / 848
JF8			
8 / 2.4	327 / 9252	50 / 1.42	388 / 1469
JF10			
10 / 3.0	511 / 14,456	78 / 2.21	608 / 2302
JF12			
12 / 3.6	735 / 20,820	113 / 3.20	732 / 2771

[1] Assumes 12 inches (305 mm) of sediment depth in sump
Systems may be designed with increased sediment capacity

[2] Assumes 24 inches (610 mm) of pre-treatment channel depth for oil storage

3.2 Inlet and Outlet Pipes

The Jellyfish Filter is available in both the standard **above-deck inlet pipe** configuration and optional **below-deck inlet** pipe configuration. Specific site requirements generally determine the configuration that is most favorable for the site. For both configurations, the invert elevation of the outlet pipe is identical to the cartridge deck elevation. Please refer to **Figures 4** and **5**.

FIGURE 4

Jellyfish Configuration with Below-Deck Inlet Pipe

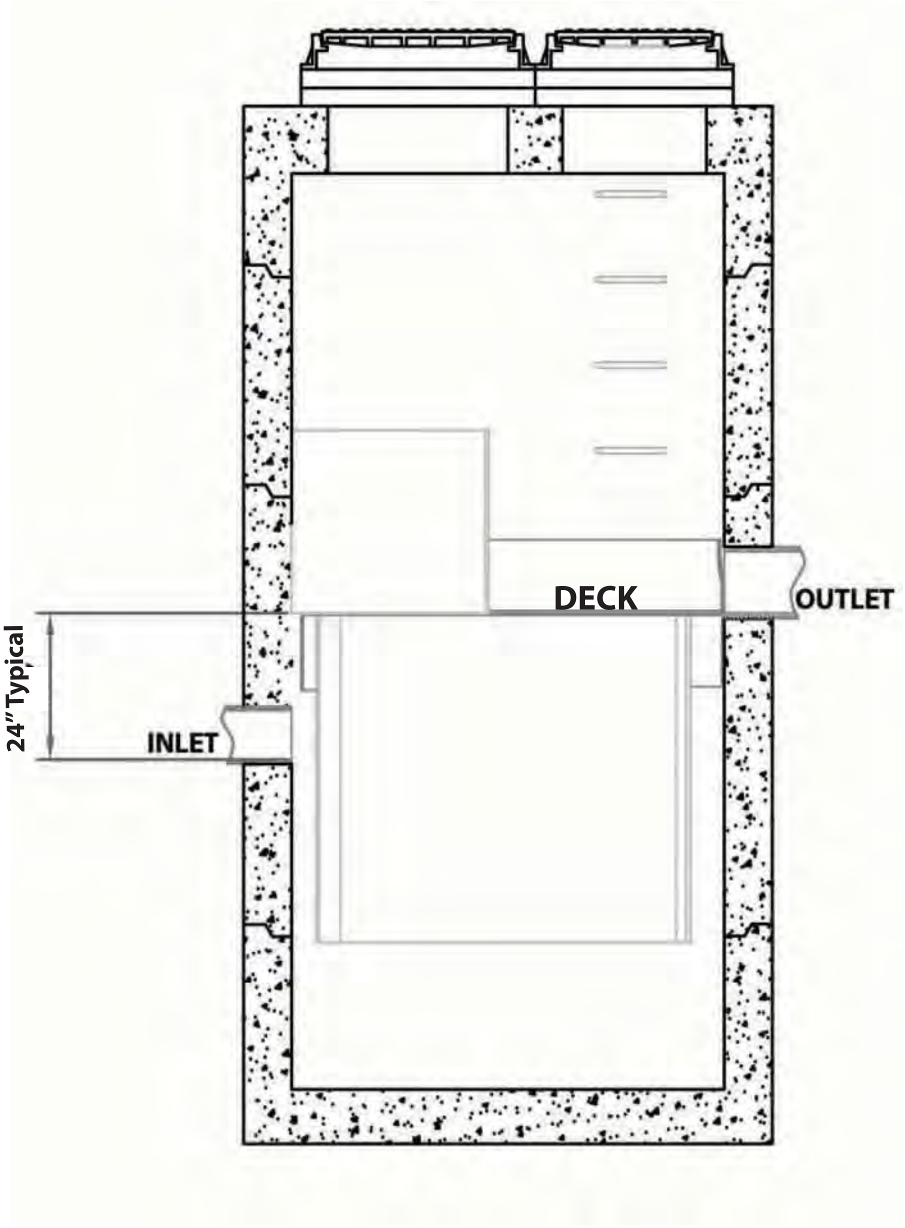
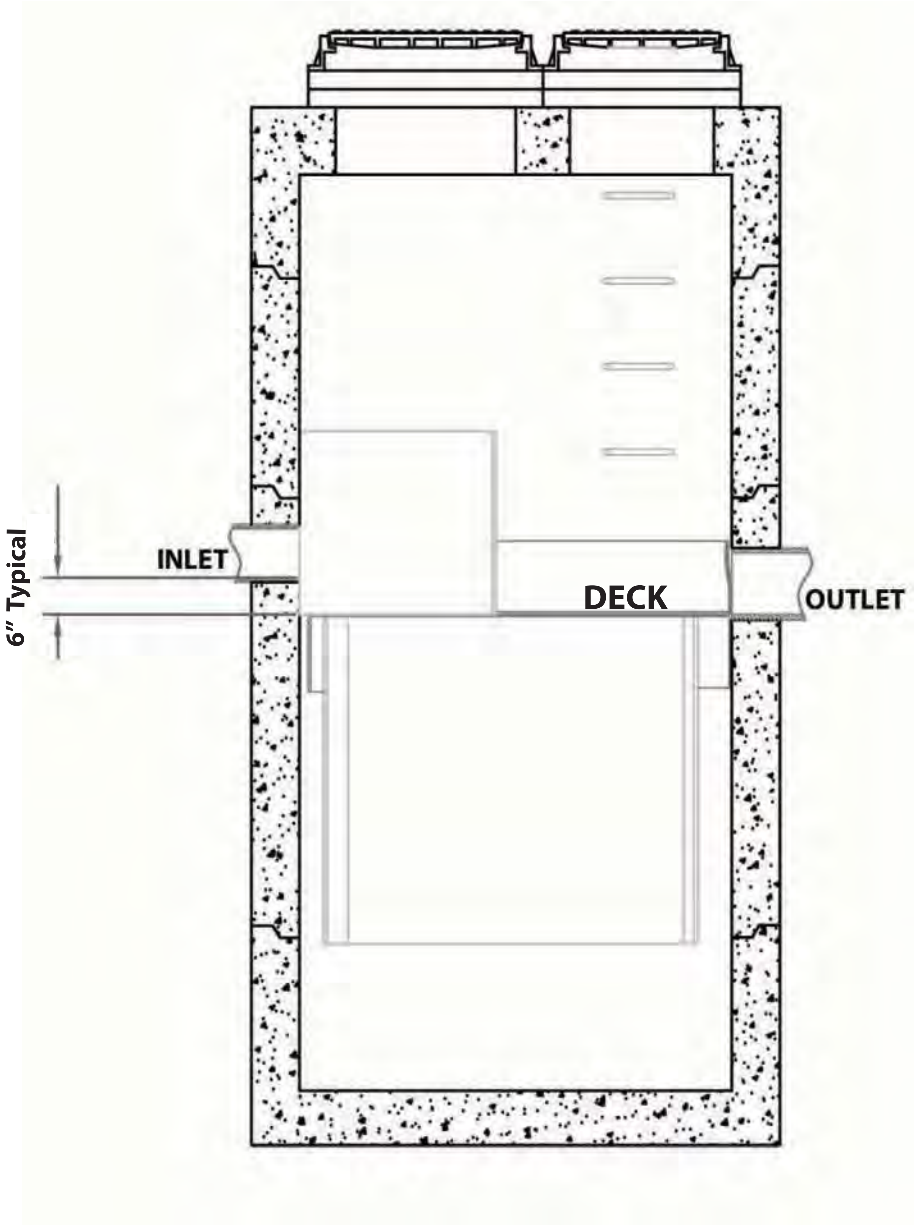


FIGURE 5

Jellyfish Configuration with Above-Deck Inlet Pipe



For the standard above-deck inlet pipe configuration, the invert elevation of the inlet pipe is typically set 6 inches (150 mm) higher than the invert elevation of the outlet pipe. This generally ensures that the inlet pipe will drain completely at the conclusion of each rainfall/runoff event, while providing sufficient volume within the maintenance access wall zone for surface accumulation of floatables below the inlet pipe. The elevation of the inlet pipe can be varied as required.

The Jellyfish Filter can accommodate a wide range of angles between the inlet and outlet pipes. The inlet pipe can be located anywhere about the circumference of the structure. The separation angle relationship of the inlet pipe to the outlet pipe can vary from 0 to 360 degrees to provide maximum design flexibility. Typical off-line layouts (external bypass using an upstream diversion structure) will have an inlet to outlet separation angle of 90 to 120 degrees. See **Table 3** below for the minimum separation angle for standard manhole configurations with an above-deck inlet pipe.

The Jellyfish Filter can accommodate **multiple inlet pipes** within certain restrictions.

The Jellyfish Filter can be built at all depths of cover generally associated with conventional stormwater conveyance systems.

Table 3
Minimum Inlet and Outlet Pipe Separation Angles and Diameters
(Jellyfish Filter Manhole Configurations with Above-Deck Inlet Pipe)

Model Diameter (ft / m)	Minimum Angle[1] Inlet / Outlet Pipes	Minimum Inlet Pipe Diameter (in / mm)	Minimum Outlet Pipe Diameter (in / mm)
JF4			
4 / 1.2	62 °	6 / 152	8 / 203
JF6			
6 / 1.8	59 °	8 / 203	10 / 254
JF8			
8 / 2.4	52 °	10 / 254	12 / 305
JF10			
10 / 3.0	48 °	12 / 305	18 / 457
JF12			
12 / 3.6	40 °	12 / 305	18 / 457

[1] Assumes off-line (external bypass) configuration

3.3 Bypass Design

The Jellyfish Filter can be designed with either an off-line or on-line configuration. All stormwater filter systems will perform for a longer duration between required maintenance services when designed and applied in off-line configurations.

A standard off-line configuration has an external bypass that uses an upstream diversion structure. The elevation difference between the top of the diversion structure weir and the Jellyfish Filter outlet pipe invert establishes the design driving head associated with the design flow rate. Excess flow that overtops the diversion weir bypasses the Jellyfish Filter and proceeds downstream. Drawings that illustrate relative system elevations are available by contacting Imbrium Systems.

For some sites an off-line configuration may not be practical and use of an on-line configuration is advantageous. In these cases, an optional internal bypass pressure relief pipe(s) can be placed in one or multiple cartridge receptacles within the Jellyfish Filter. The pressure relief pipe height and diameter can be varied to accommodate the design peak flow rate and system driving head requirements. For these systems the driving head is calculated as the difference in elevation between the top of the pressure relief pipe and the invert of the outlet pipe. When the internal bypass option is utilized, peak flow rates receive membrane filtration treatment up to the filtration design flow rate, with the balance of the peak flow receiving pre-treatment. Increased sump depth may be required to increase sediment storage capacity and to minimize re-suspension of previously captured sediment at peak flow rates.

Please contact Imbrium Systems for design assistance.

3.4 Shallow or Low Cover Installations

For sites that require minimal depth of cover for the stormwater infrastructure, the Jellyfish Filter can be applied in a shallow application using a hatch cover to provide adequate access to all the cartridges within the unit. The general minimum depth of cover is 36 inches (915 mm) from the Jellyfish outlet pipe invert to the underside of the top slab. Further custom modifications may be possible. A typical drawing is included in **Appendix A** and **B**.

3.5 Submerged Installations

When properly designed, the Jellyfish Filter will function effectively under submerged conditions. For systems that may experience submerged or backwater conditions due to dry weather base flow or tidal effects, driving head calculations must account for water elevation during the backwater condition. The Jellyfish Filter treatment functions will continue to operate during forward flow despite backwater conditions. A customized increase to the maintenance access wall height may be required to ensure floatables capture and an increase in the height of the backwash pool weir may be required to ensure function of the automatic passive backwash feature.

3.6 Grated Inlet and Curb Inlet Jellyfish Filters

Existing drainage systems can be retrofitted by replacing conventional storm inlets with a Jellyfish Filter inlet. Imbrium Systems has two standard options, curb inlet and grated inlet configurations. Both configurations utilize the shorter 27-inch (686 mm) length Jellyfish filter cartridges and require minimal cover. Two typical drawings are included in **Appendix A** and **B**. Further custom modifications may be possible.

3.7 Series Jellyfish Filter

For sites with water quality treatment flow rates that exceed the design flow rate of the largest standard Jellyfish Filter model, custom systems can be designed that hydraulically connect multiple Jellyfish Filters in series. Please contact Imbrium Systems for assistance.

3.8 Jellyfish Filter with Sump Drain

The Jellyfish Filter is typically designed to maintain a pool of water in the lower chamber (below deck) between storms. However, certain sites or jurisdictions may require draindown of the sump between storms. To meet these requirements, a sump drain filter can be installed to slowly drain the lower chamber pool to the sub-grade for infiltration or to an alternate point of discharge. A typical drawing is included in **Appendix A** and **B**.

Chapter 4

4.0 Jellyfish Filter Sizing Guidelines

The Jellyfish Filter is sized based on considerations of the specified treatment flow rate, anticipated sediment mass load transported from the site and required pollutant storage capacities.

An optional software-based continuous simulation modeling tool, such as **PCSWMM for Stormceptor®**, can be utilized to determine site hydrology from local historical rainfall data and thereby assist in sizing a Jellyfish Filter. In general, such a tool is useful in deriving the water quality treatment flow rate associated with treatment of a high percentage of the average annual runoff volume.

4.1 Sizing for Water Quality Treatment Flow Rate

The Jellyfish Filter can be sized using a specified flow rate (i.e. "water quality flow rate" or "treatment flow rate"). The treatment flow rate is determined by the engineer in accordance with methods approved by the local jurisdiction. The appropriate Jellyfish Filter model number is then selected from **Table 1**. Custom systems can be designed for sites with water quality treatment flow rates that exceed the design flow rate of the largest standard Jellyfish Filter model. Please contact Imbrium Systems for assistance.

4.2 Sizing for Sediment Mass Loading

A second sizing consideration is the anticipated sediment load that will enter the Jellyfish Filter. For a stormwater filter system to have practical application in the field, it is important that the system's sediment mass loading and storage capacities permit a reasonable interval between successive maintenance clean-outs and filter cartridge service. It is recommended that a system be designed to accommodate a minimum one year interval between maintenance services for pollutant removal and filter cartridge flushing/rinsing.

Laboratory testing using a standard test sediment demonstrated sediment mass loading capacity of 125 pounds (57 kg) of sediment per 54-inch (1372 mm) long hi-flo cartridge at 18 inches (457 mm) of driving head (see **Table 4** below). Specific site conditions will influence the sediment mass loading capacity of the Jellyfish Filter due to the variable nature of sediment characteristics, rainfall intensity, time intervals between runoff events and frequency of automatic passive backwash.

The projected annual sediment load transported from the site should be determined by the engineer. Calculations can be performed for the projected annual runoff volume using an assumed event mean suspended solids concentration (typically 60 mg/L for urban sites). As a guideline, the U.S. EPA has determined typical annual sediment loads per acre for various sites by land use (see **Table 5**). Certain states and local jurisdictions have also established such guidelines.

For some sites the Jellyfish Filter is installed downstream of a detention facility. In these cases, the Jellyfish Filter will typically treat a relatively low flow rate (orifice-controlled release flow rate) from the detention facility compared to flow rates that would be treated if the Jellyfish Filter received the site runoff directly. In such cases, the size of the Jellyfish Filter and number of filter cartridges will typically be determined by the projected annual sediment mass load transported to the Jellyfish Filter, accounting for sediment mass that is expected to settle out in the upstream detention facility.

It is important for the engineer to confirm that the system design has adequate storage capacity for anticipated pollutant loads that will accumulate over the specified maintenance interval. The oil and sediment pollutant capacities for each standard Jellyfish Filter model are shown in **Table 2**.

Table 4
Sediment Mass Loading Capacity
Jellyfish Filter Hi-Flo and Draindown Cartridges

Cartridge Type	Cartridge Length (in / mm)	Driving Head (in / mm)	Sediment Mass Loading Capacity [1, 2] (lbs / kg)
Hi-Flo	27 / 686	18 / 457	63 / 28
Hi-Flo	54 / 1372	18 / 457	125 / 57
Draindown	27 / 686	18 / 457	32 / 15
Draindown	54 / 1372	18 / 457	63 / 28

[1] Based on laboratory testing using simulated storm events and Sil-Co-Sil™ 106 test sediment (d50 = 22 microns) at 40% of maximum cartridge flow rate

[2] Sediment Mass Loading Capacity expressed as pounds of NJPSD test sediment (1 – 1000 microns, d50 = 67 microns, characterized as 55% sand / 40% silt / 5% clay), using conversion factor of 1.66 from Sil-Co-Sil 106 to NJPSD

Note: Actual sediment mass loading capacity will vary depending on specific site characteristics

Table 5
Annual Total Suspended Solids Load by Land Use
(lbs/acre/year)
(kg/hectare/year)

Commercial	Parking Lot	Residental Density			Highways	Industrials	Shopping Center
		High	Med.	Low			
1000	400	400	250	10	880	500	440
1120	480	480	280	11	986	560	493

Source: U.S. EPA Stormwater Best Management Practice Design Guide Volume 1, Appendix D, Table D-1, Burton and Pitt 2002

4.3 Continuous Simulation Sizing Tool

A software-based continuous simulation modeling tool such as **PCSWMM for Stormceptor®**, can be utilized to determined site hydrology from local historical rainfall data, thereby assist in sizing a Jellyfish Filter. In general, such a tool is useful in deriving the water quality treatment flow rate associated with treatment of a high percentage (typically 80 - 90%) of the average annual runoff volume. The appropriately sized Jellyfish Filter is then selected from **Table 1** based on the derived water quality treatment flow rate. Please contact Imbrium Systems for assistance with optional sizing methodology.

Chapter 5

5.0 Jellyfish Filter Installation

The installation of the precast concrete or fiberglass Jellyfish Filter structure should conform to state highway, provincial or local specifications for the installation of maintenance manholes. Selected sections of a general specification that are applicable are summarized in the following sections.

For more information, please refer to the Jellyfish Filter Performance Specification with document title **Standard Specification – Water Quality Filter Treatment Device**.

Excavation

- Excavation and general site preparation for the installation of the Jellyfish Filter structure should conform to state highway, provincial or local specifications.
- Topsoil removed during the excavation should be stockpiled in designated areas and should not be mixed with subsoil or other materials.
- The Jellyfish Filter structure should not be installed on frozen ground.
- Excavation should extend a minimum of 12 inches (300 mm) from the precast concrete surfaces plus an allowance for shoring and bracing where required.
- If the bottom of the excavation provides an unsuitable foundation additional excavation may be required. In areas with a high water table, continuous dewatering may be required to ensure that the excavation is stable and free of water.

- Level the sub-grade to the proper elevation. Verify the elevation against the structure dimensions, the invert elevations on the approved Jellyfish Filter drawing and the site plans. Adjust the base aggregate if necessary. Verify the soil bearing capacity is adequate for the required load.

Installation of Jellyfish Filter Structure

- Set the base section of the Jellyfish Filter structure on solid sub-grade.
- Verify the level and elevation of the base section before adding any riser sections.
- Add specified watertight seal to the base section. Set riser section(s) on the base section.
- Install the inlet and outlet pipes to the structure.
- Install the top slab and frames and covers.
- Do not install Jellyfish membrane filtration cartridges until the upstream catchment and site have been stabilized.

Installation of Jellyfish Membrane Filtration Cartridges

- After the upstream catchment and site have been stabilized, remove any accumulated sediment and debris from the structure.

- Safely descend to the cartridge deck using the ladder attached to the sidewall of the manhole. Confined space entry procedures are required.

- Carefully lower the Jellyfish membrane filtration cartridges into the cartridge receptacles within the cartridge deck. A filter cartridge should be placed into each of the draindown cartridge receptacles outside the backwash pool weir. Depending on the specific Jellyfish Filter model number, filter cartridges should be placed into most or all of the hi-flo cartridge receptacles within the backwash pool weir. If a membrane joint snags on the receptacle lip, use a slight twisting or sideways motion to clear the snag. Do not force the membranes down into the cartridge receptacle, as this may damage the membranes. Use a slight downward pressure on the cartridge head plate to seat the rim gasket (thick circular gasket on the stainless steel head plate) into the cartridge receptacle.

- Examine the cartridge lids to differentiate lids with a small orifice, a large orifice and no orifice. Lids with a small orifice are to be inserted into the draindown cartridge receptacles. Lids with a large orifice are to be inserted into the hi-flo cartridge receptacles. Lids with no orifice are to be inserted into unoccupied cartridge receptacles within the backwash pool weir.

- To install a cartridge lid, ensure the cartridge lid male threads are aligned properly with the cartridge receptacle female threads. Firmly twist the cartridge lid clockwise to seat the filter cartridge snugly in place.

Chapter 6

6.0 Jellyfish Filter Inspection and Maintenance

For inspection and maintenance information, please refer to the **Jellyfish® Filter Owner's Manual**.

Jellyfish Filter operation and maintenance are depicted in an **animation** on Imbrium Systems website (**www.imbriumsystems.com**).

Chapter 7

7.0 Jellyfish Filter Replacement Parts

Replacement parts for the JellyfishFilter can be ordered by contacting Imbrium Systems at:

United States: 888-279-8826 or 301-279-8827
Canada / International: 800-565-4801 / 416-960-9900
www.imbriumsystems.com

Chapter 8

8.0 Jellyfish Filter Performance Specification

The Jellyfish Filter Performance Specification is contained in the document titled **Standard Specification – Water Quality Filter Treatment Device**, shown in **Appendix C** and available on Imbrium Systems website.

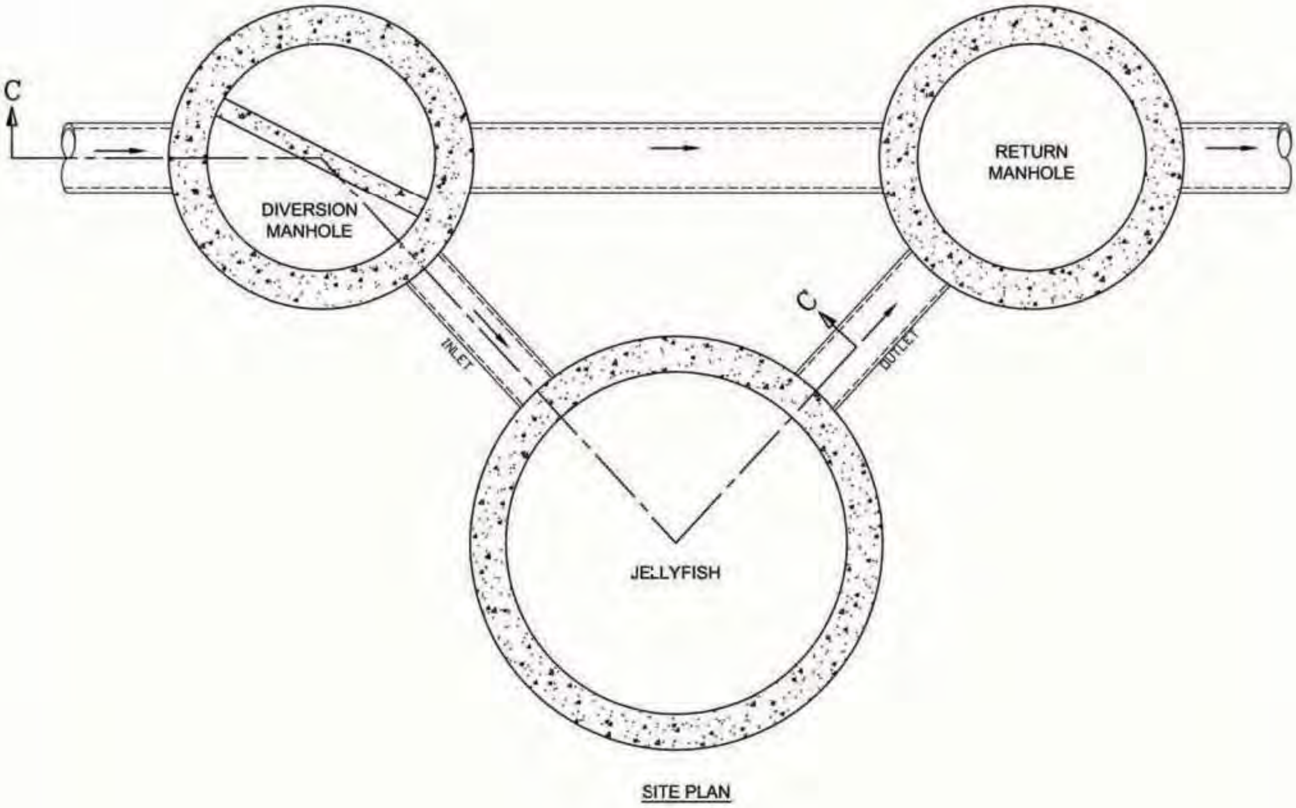
Notes

Appendix A

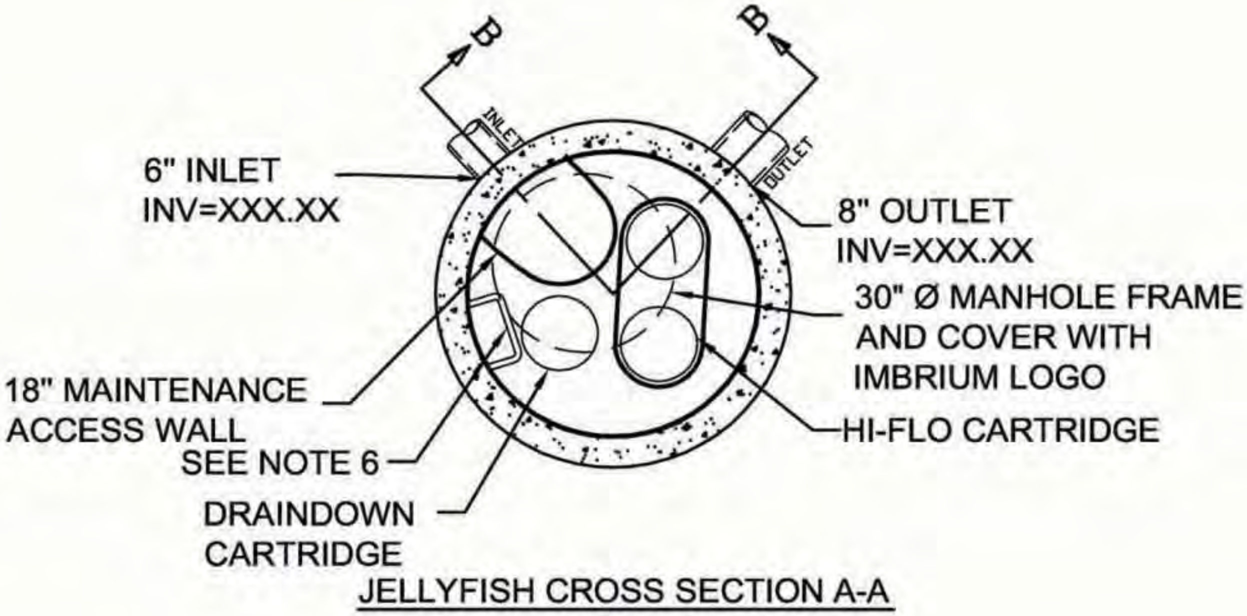
Jellyfish® Filter Standard Drawings
U.S. Customary Units

Notes

Jellyfish® Filter
Typical Layout



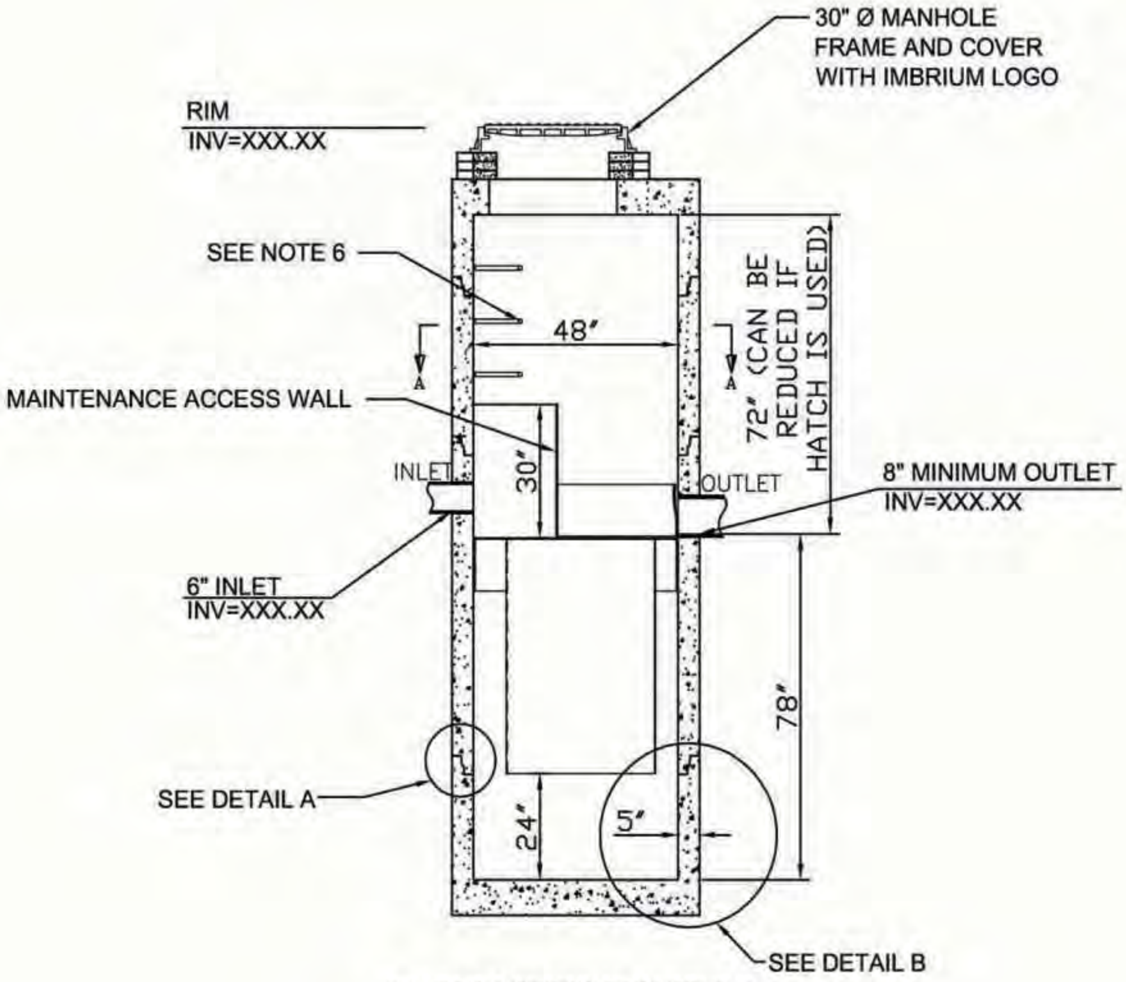
Jellyfish® Filter JF4
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF4
Typical Section

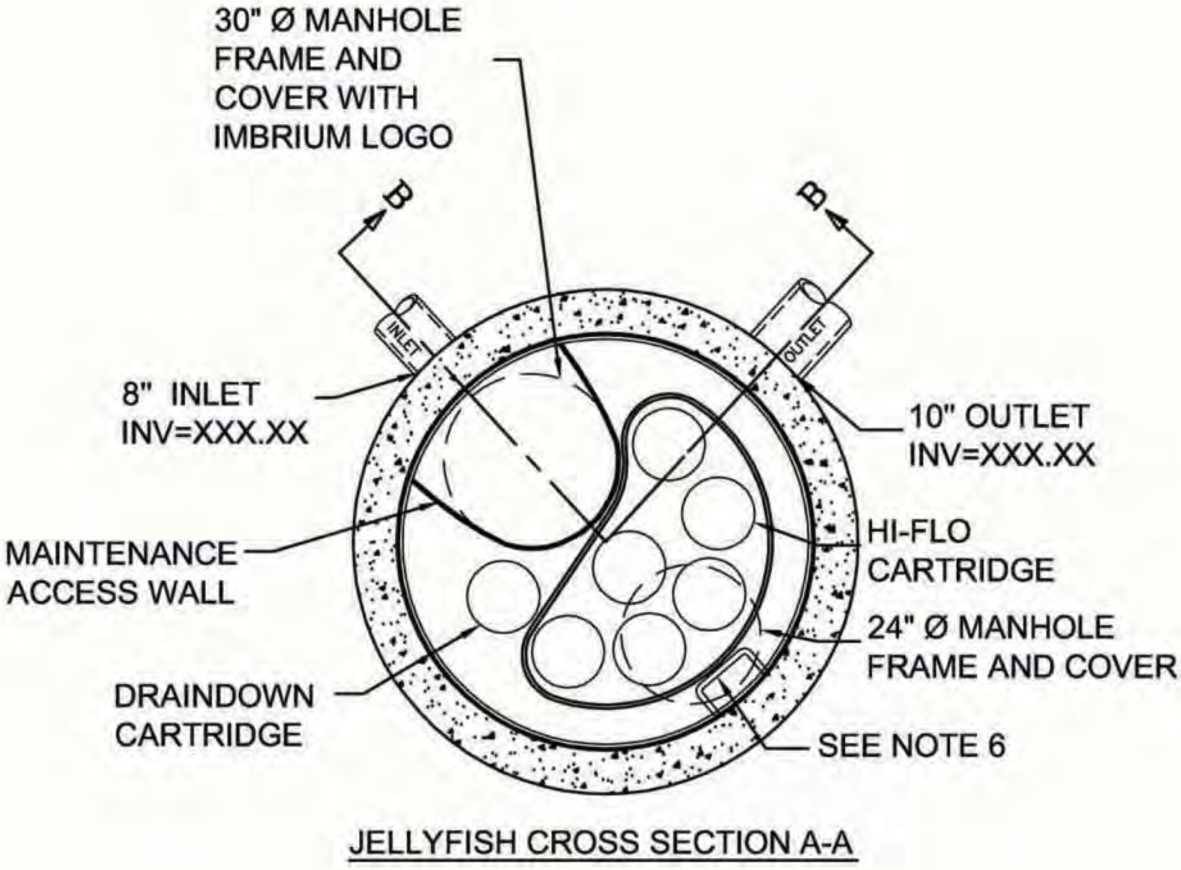


JELLYFISH CROSS SECTION B-B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF6
Typical Section

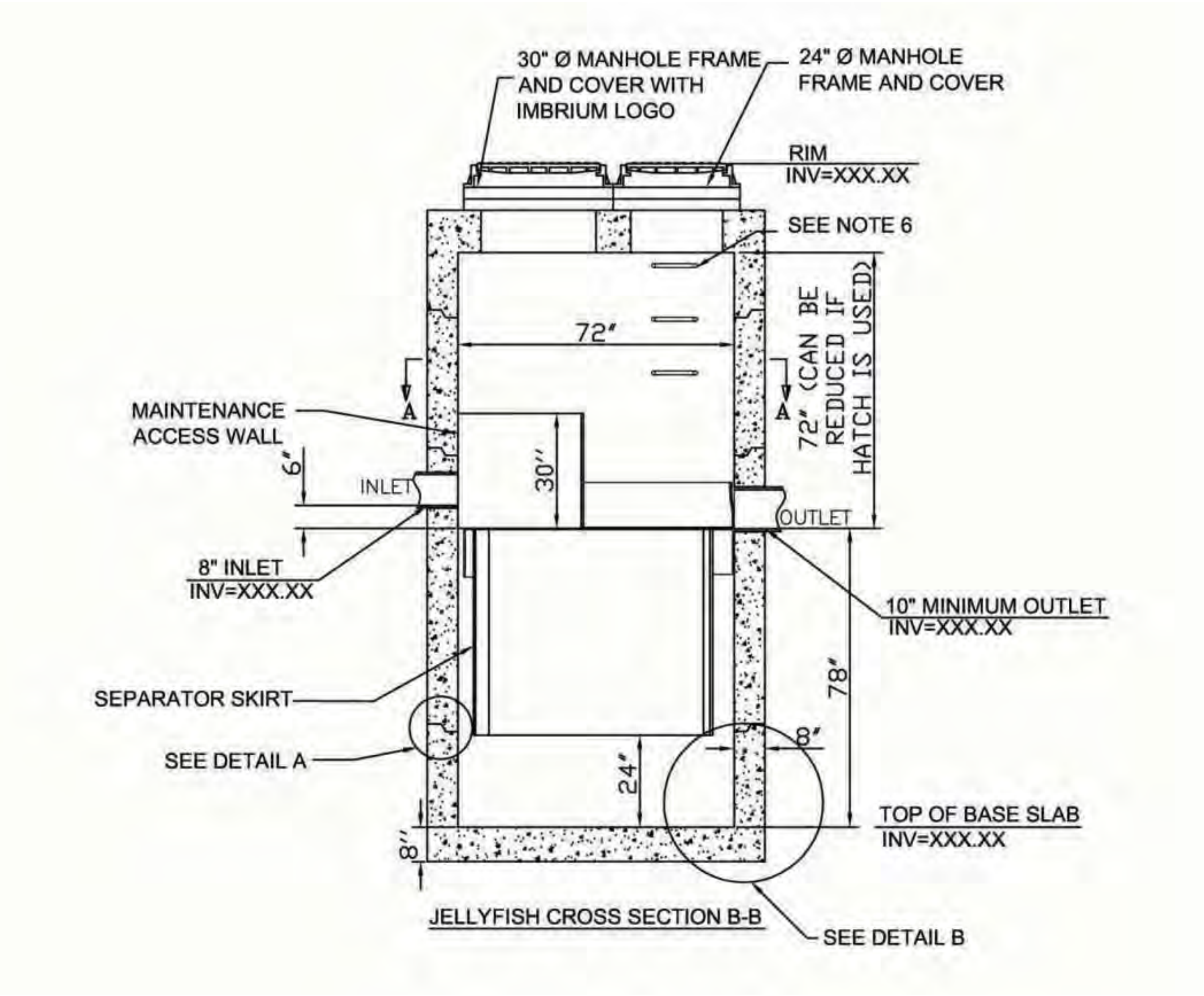


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

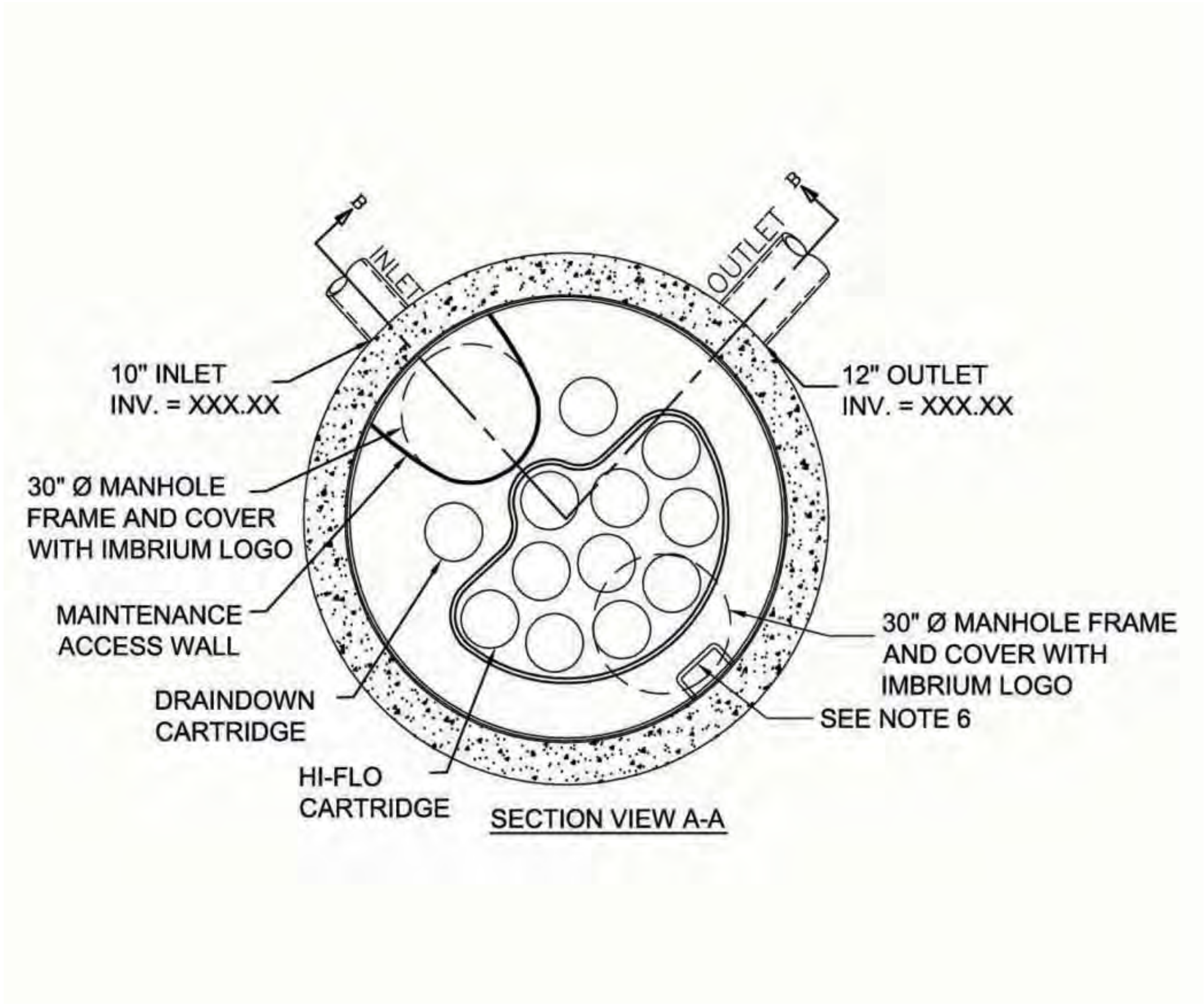
Jellyfish® Filter JF6
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF8
Typical Section

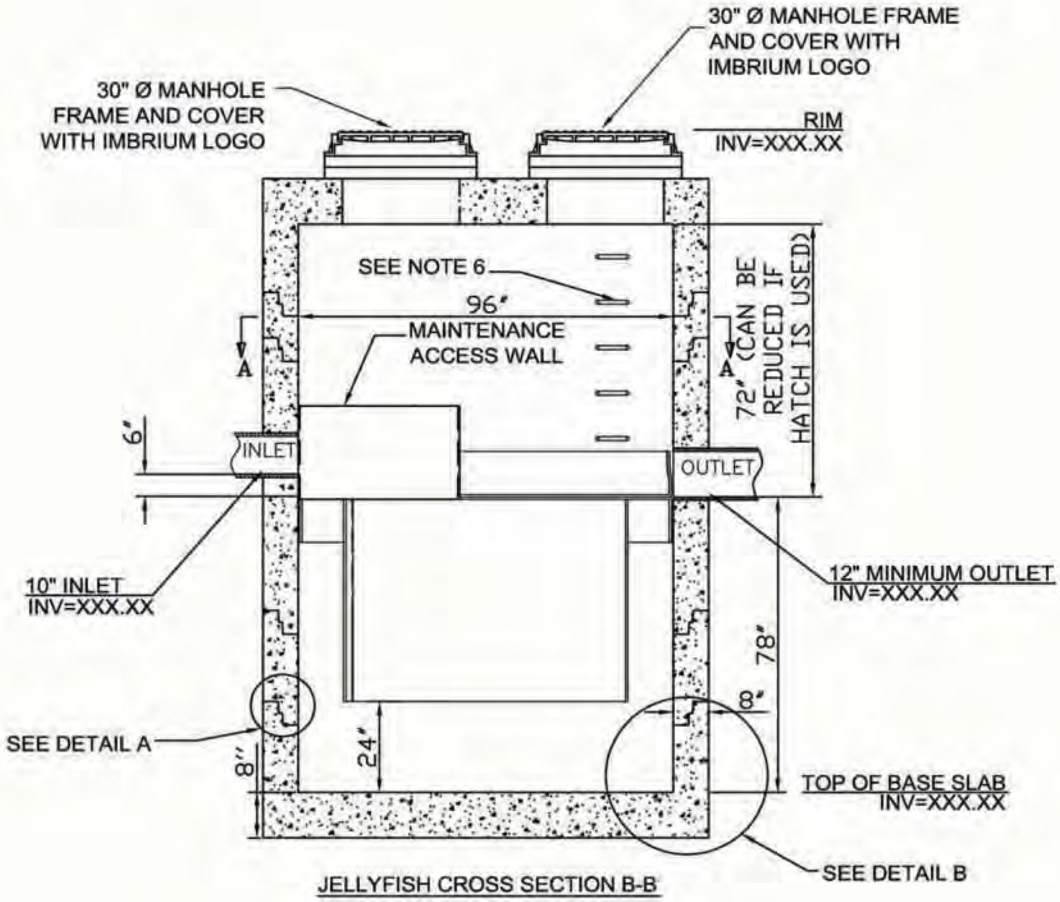


SECTION VIEW A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF8
Typical Section

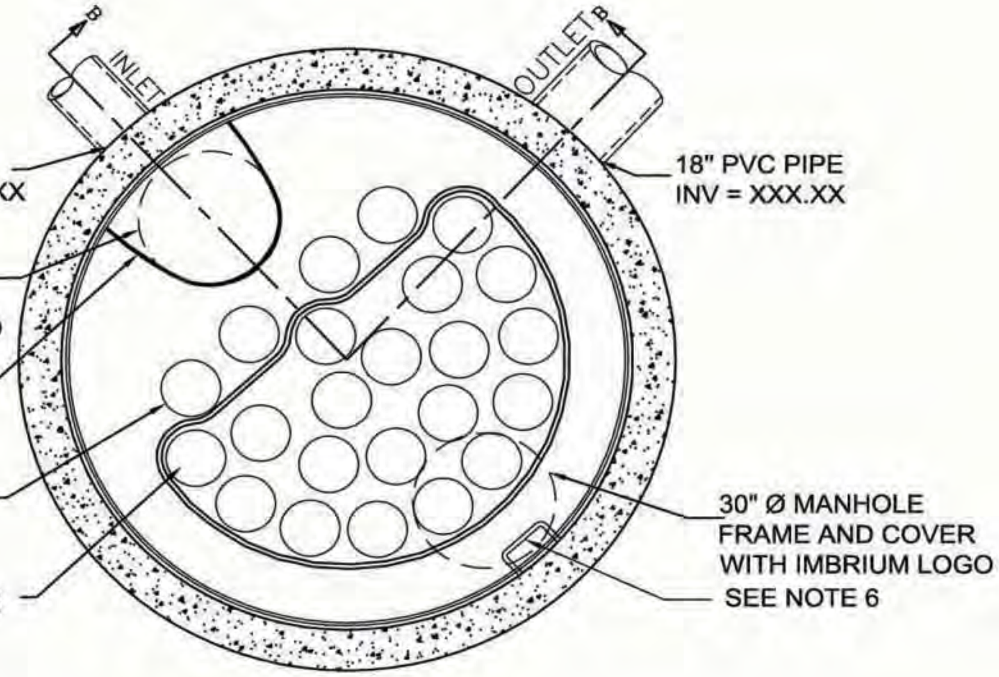


JELLYFISH CROSS SECTION B-B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF10
Typical Section

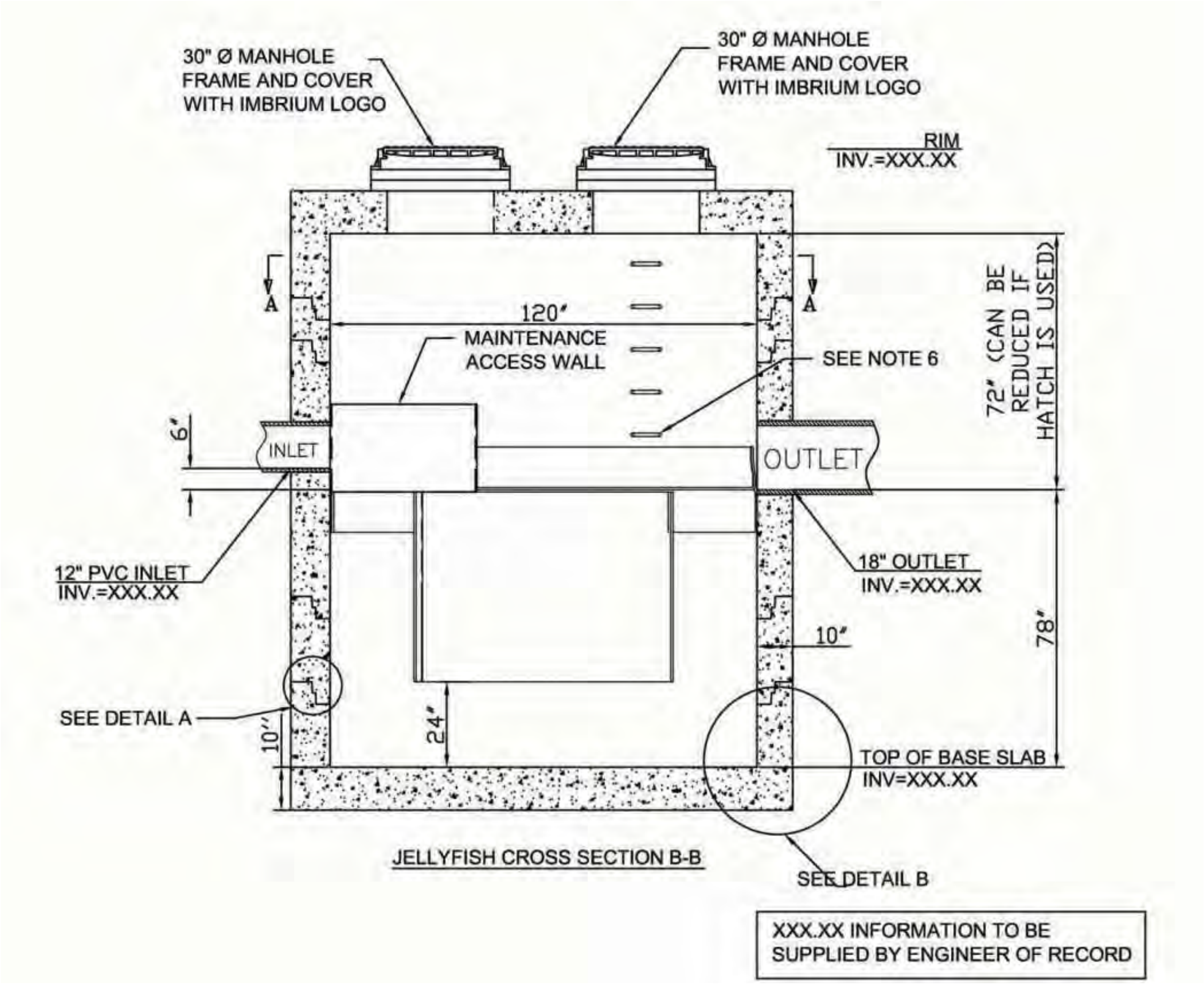


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

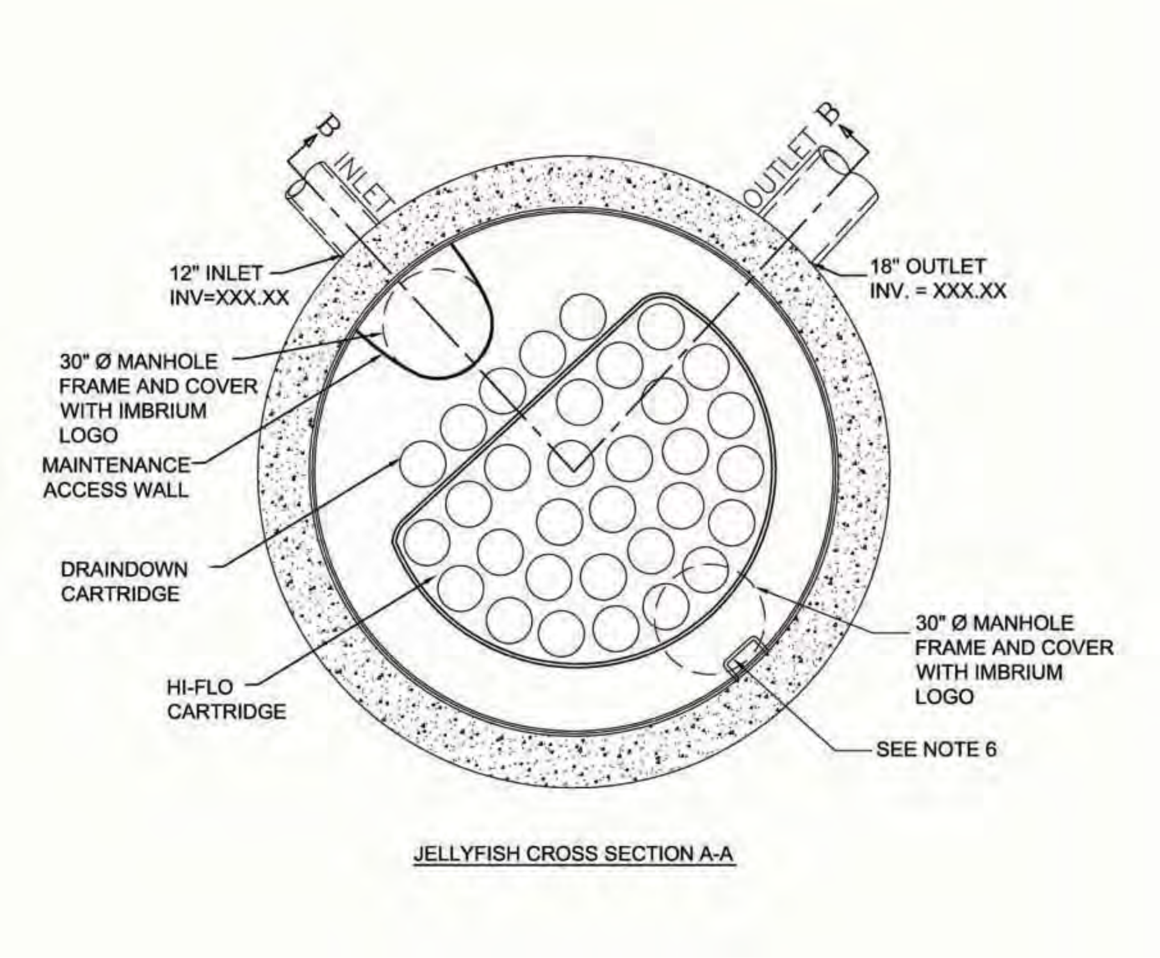
Jellyfish® Filter JF10
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF12
Typical Section

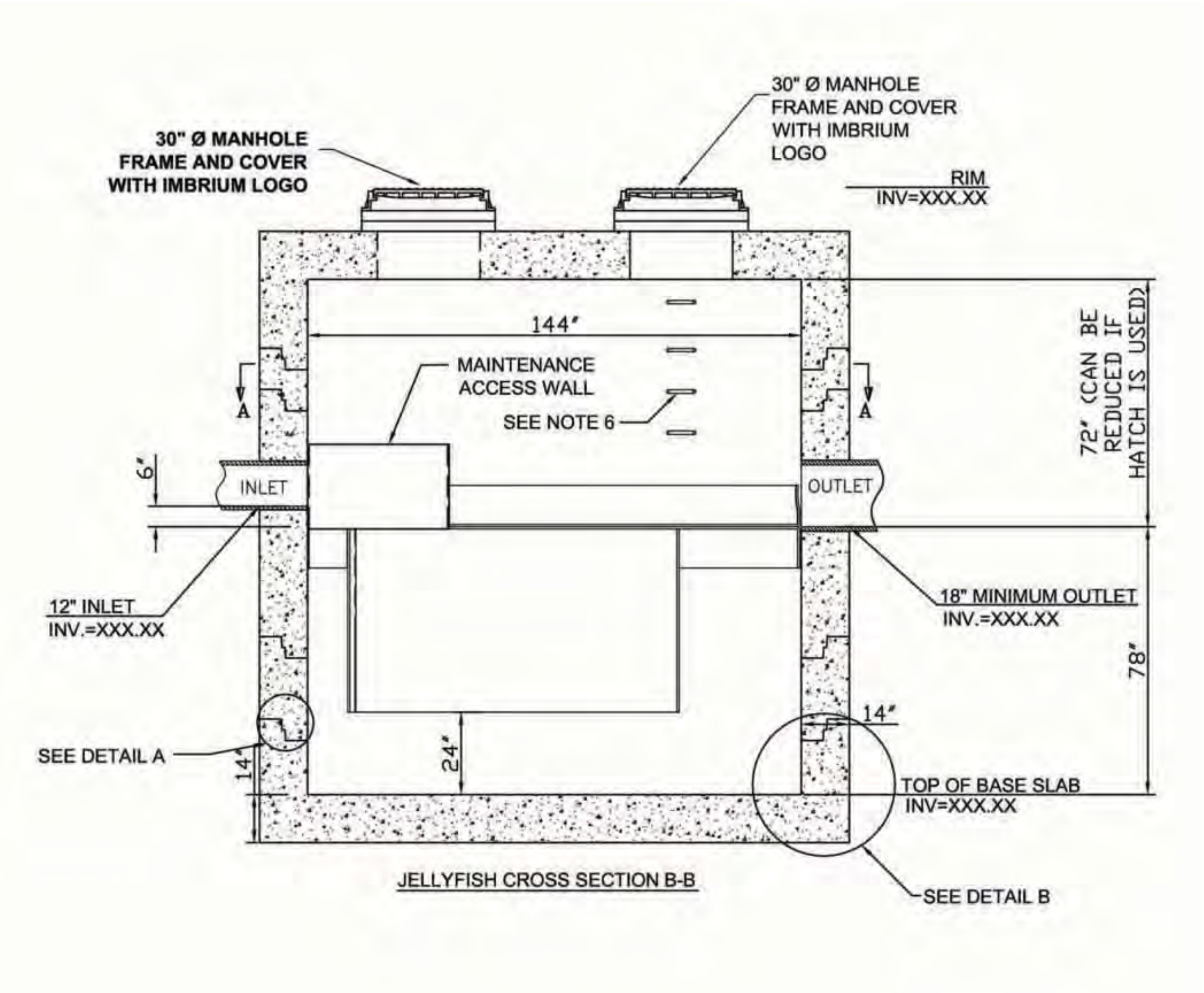


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

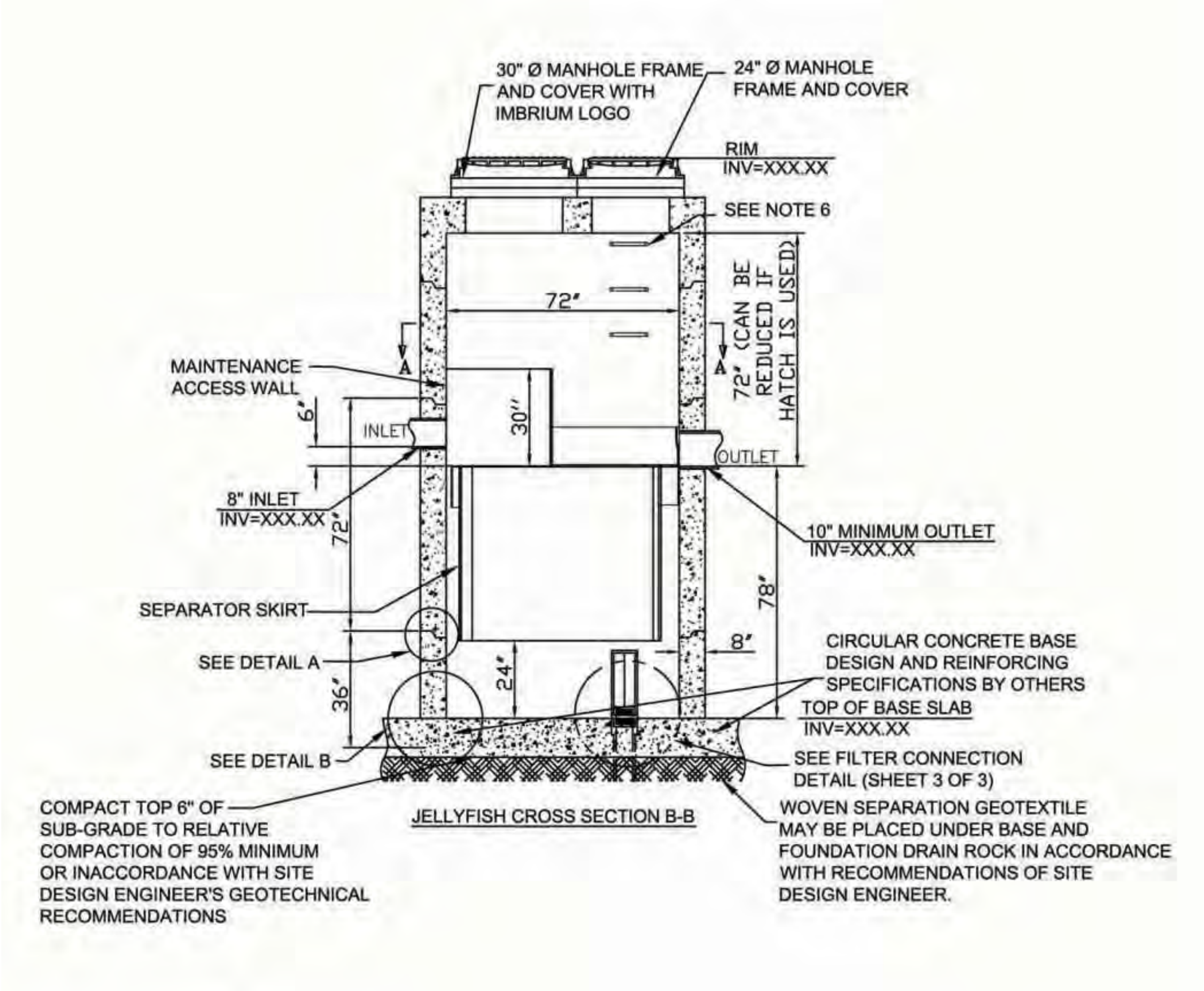
Jellyfish® Filter JF12
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

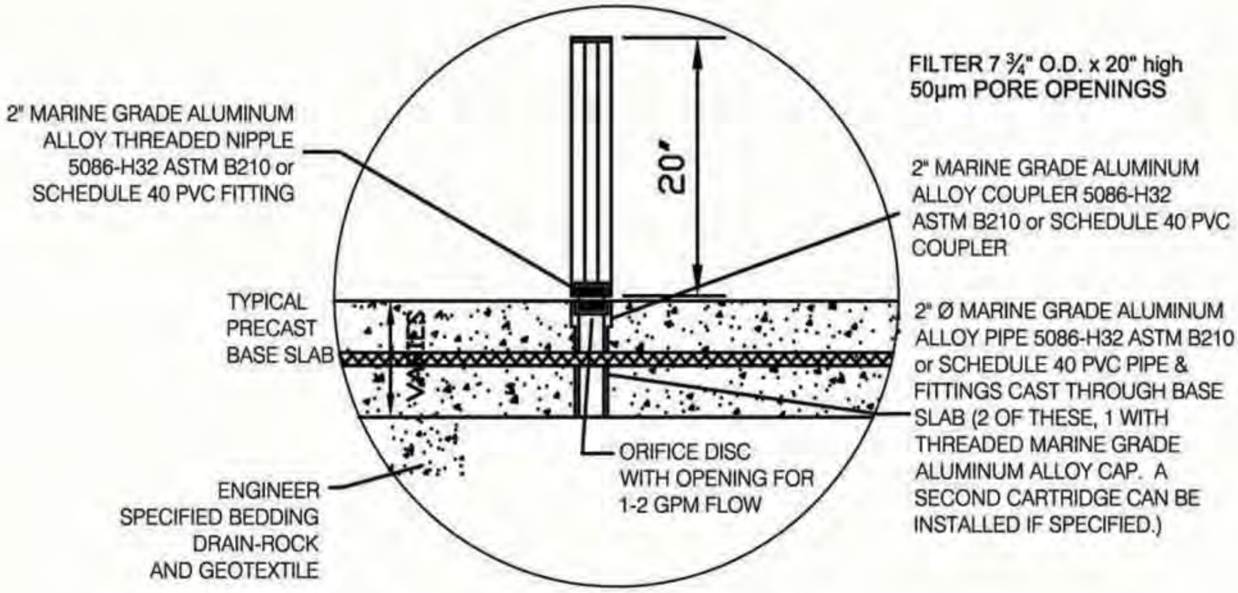
Jellyfish® Filter with Sump Drain
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter with Sump Drain Typical Section

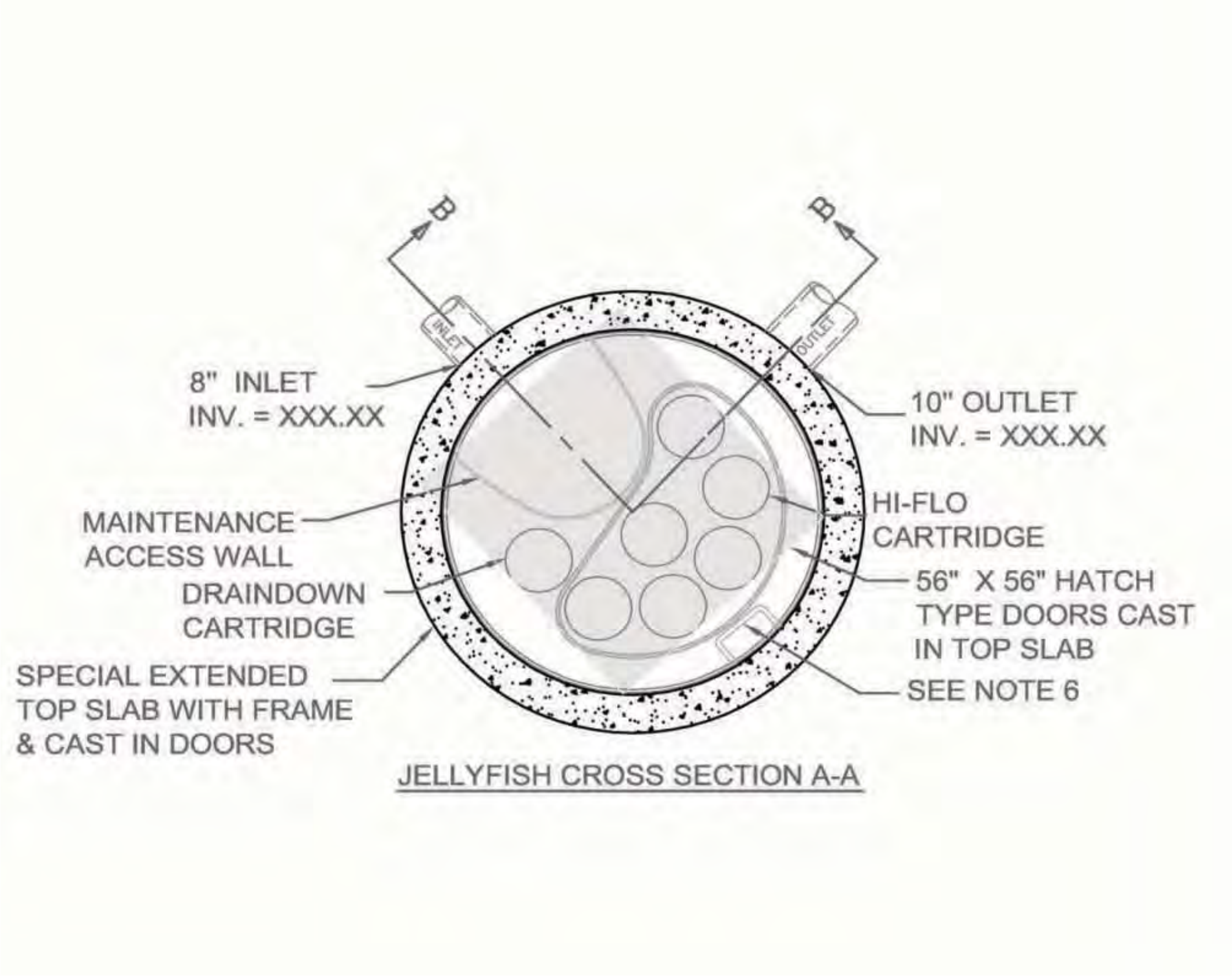


Filter Connection Detail

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

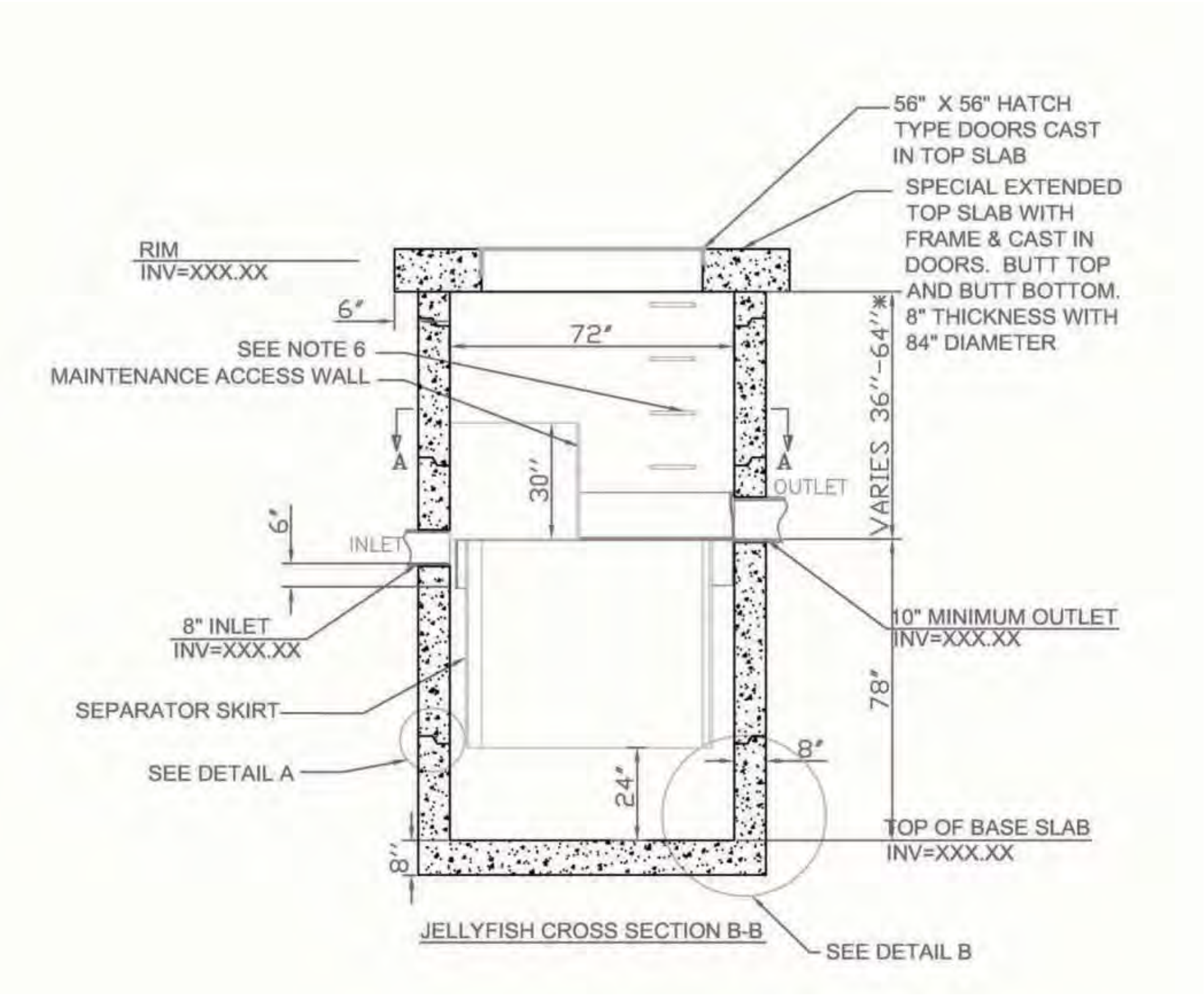
Jellyfish® Filter for Shallow Application (with Hatch) Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

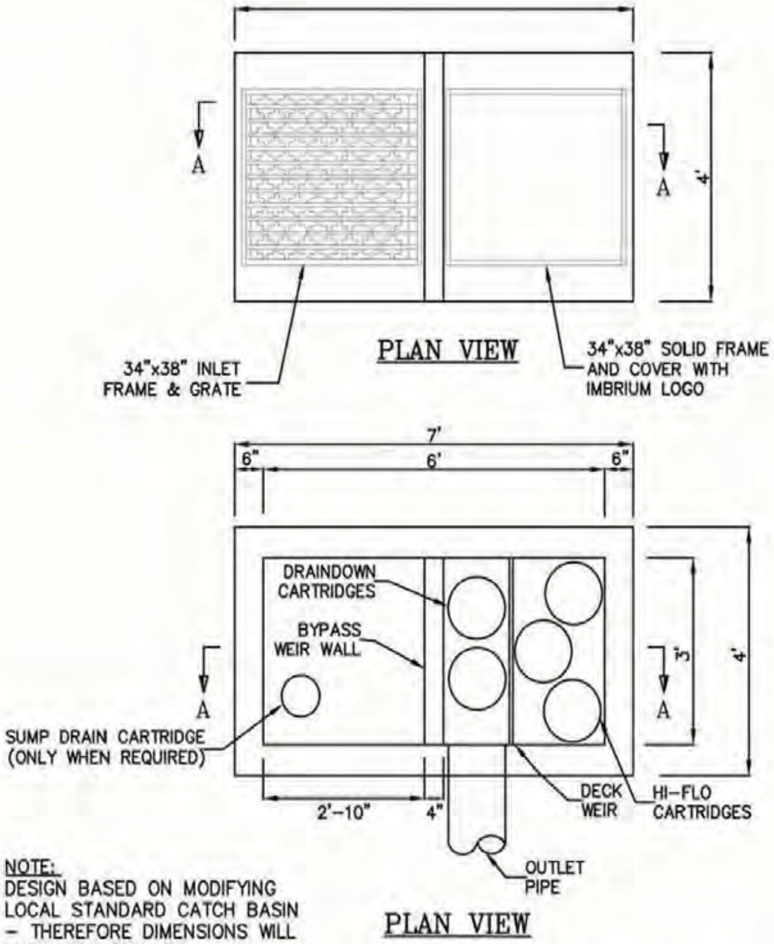
Jellyfish® Filter for Shallow Application (with Hatch) Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter with Grated Inlet Typical Drawing



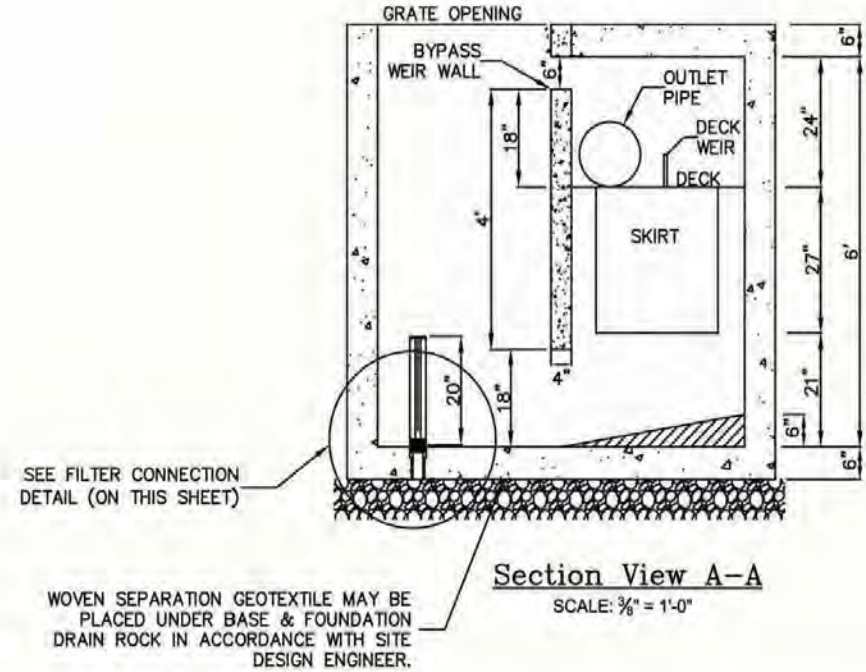
NOTE:
DESIGN BASED ON MODIFYING LOCAL STANDARD CATCH BASIN - THEREFORE DIMENSIONS WILL VARY AS REQUIRED

Cartridge Type	Cartridge Height (inches)	Flow Rate (gpm)
Draindown Cartridge	27	20.0
Hi-Flo Cartridge	27	40.0

Drainage Area	0.24 ac
Impervious Area	0.24 ac
**WQv Discharge	0.36 cfs
Treatment Flow Rate (gpm/cfs)	160 gpm/0.36 cfs
Hi-Flo Cartridges Req.	3
Draindown Cartridges Req.	2

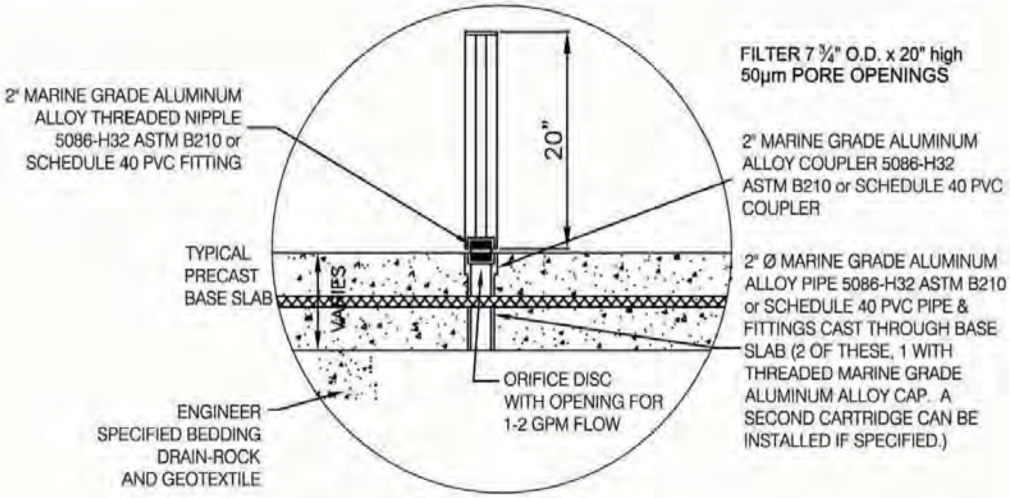
**Computed using 1.0" of rainfall depth as the runoff from 90% of the average annual rainfall

Jellyfish® Filter with Grated Inlet
Typical Section



Section View A-A

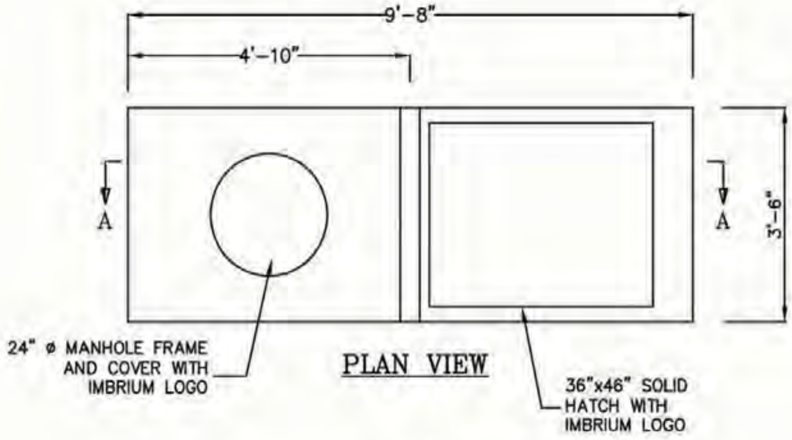
SCALE: ⅜" = 1'-0"



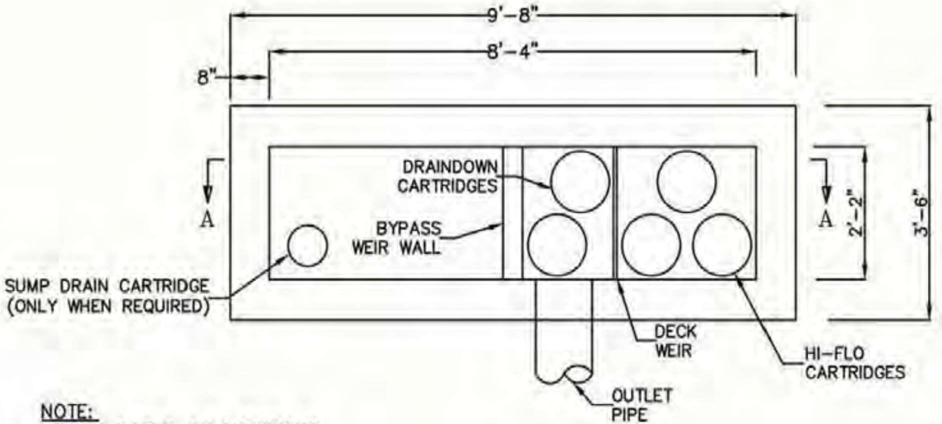
Filter Connection Detail

SCALE: ¾" = 1'-0"

Jellyfish® Filter with Curb Inlet Typical Drawing



PLAN VIEW



NOTE:
DESIGN BASED ON MODIFYING LOCAL STANDARD CATCH BASIN – THEREFORE DIMENSIONS WILL VARY AS REQUIRED

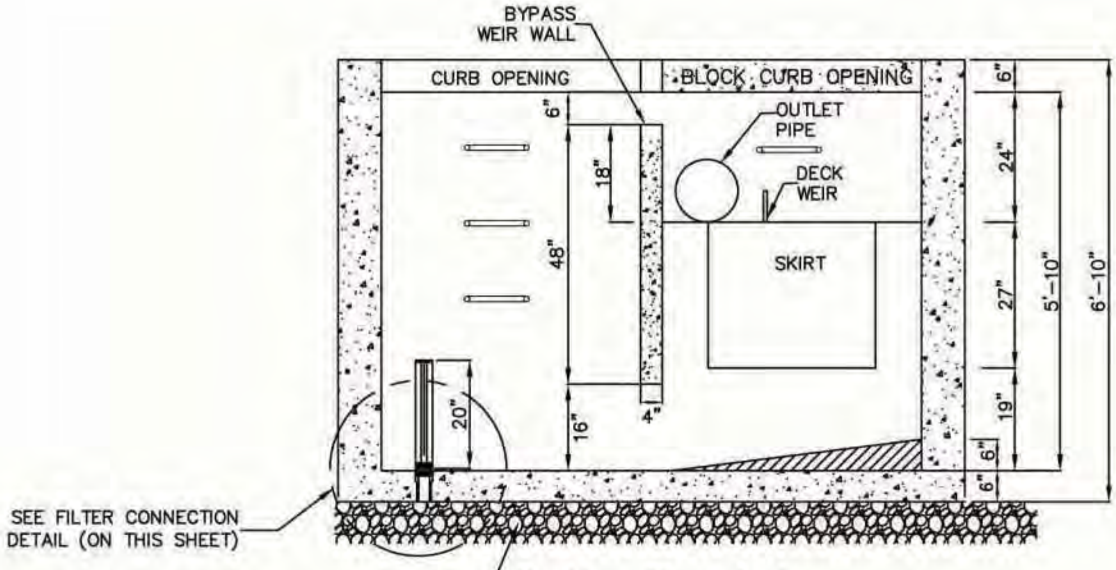
PLAN VIEW

Cartridge Type	Cartridge Height (inches)	Flow Rate (gpm)
Draindown Cartridge	27	20.0
Hi-Flo Cartridge	27	40.0

Drainage Area	0.24 ac
Impervious Area	0.24 ac
**WQv Discharge	0.36 cfs
Treatment Flow Rate (gpm/cfs)	160 gpm/0.36 cfs
Hi-Flo Cartridges Req.	3
Draindown Cartridges Req.	2

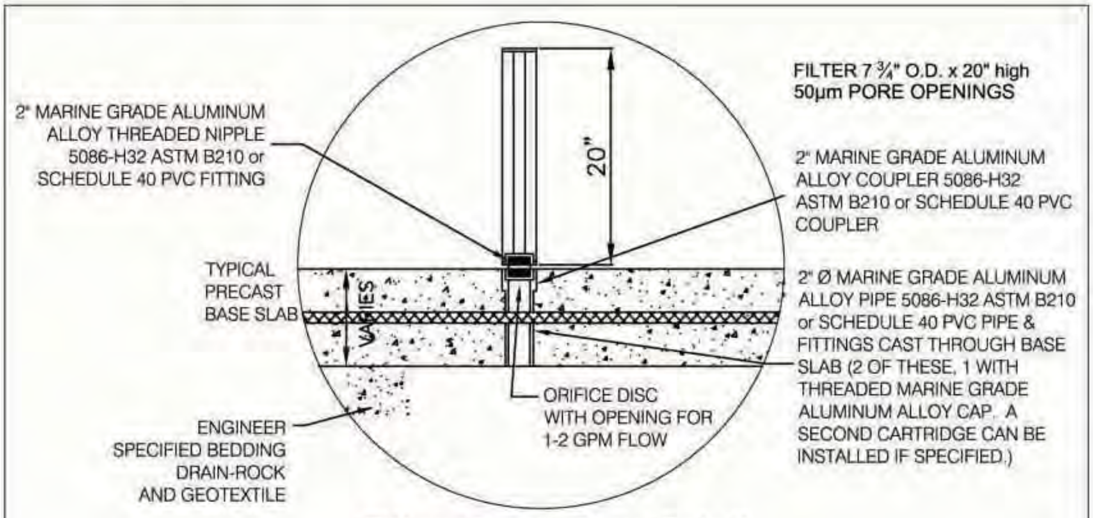
**Computed using 1.0" of rainfall depth as the runoff from 90% of the average annual rainfall

Jellyfish® Filter with Curb Inlet
Typical Section



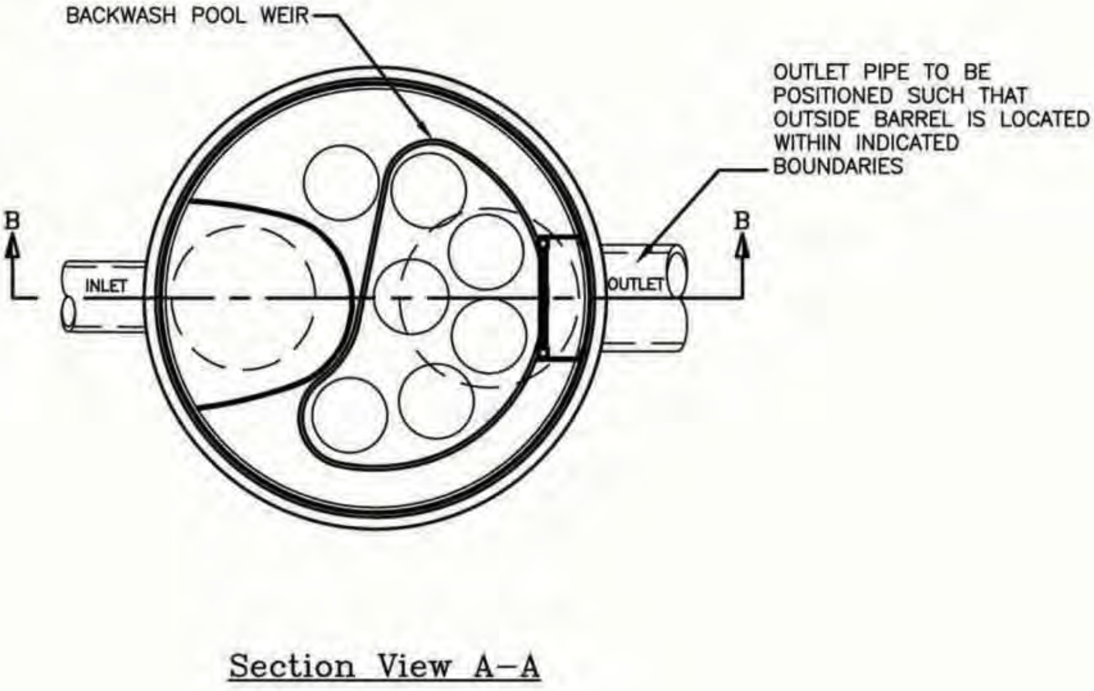
Section View A–A
SCALE: ⅜" = 1'-0"

WOVEN SEPARATION GEOTEXTILE MAY BE PLACED UNDER BASE & FOUNDATION DRAIN ROCK IN ACCORDANCE WITH SITE DESIGN ENGINEER.



Filter Connection Detail
SCALE: ¾" = 1'-0"

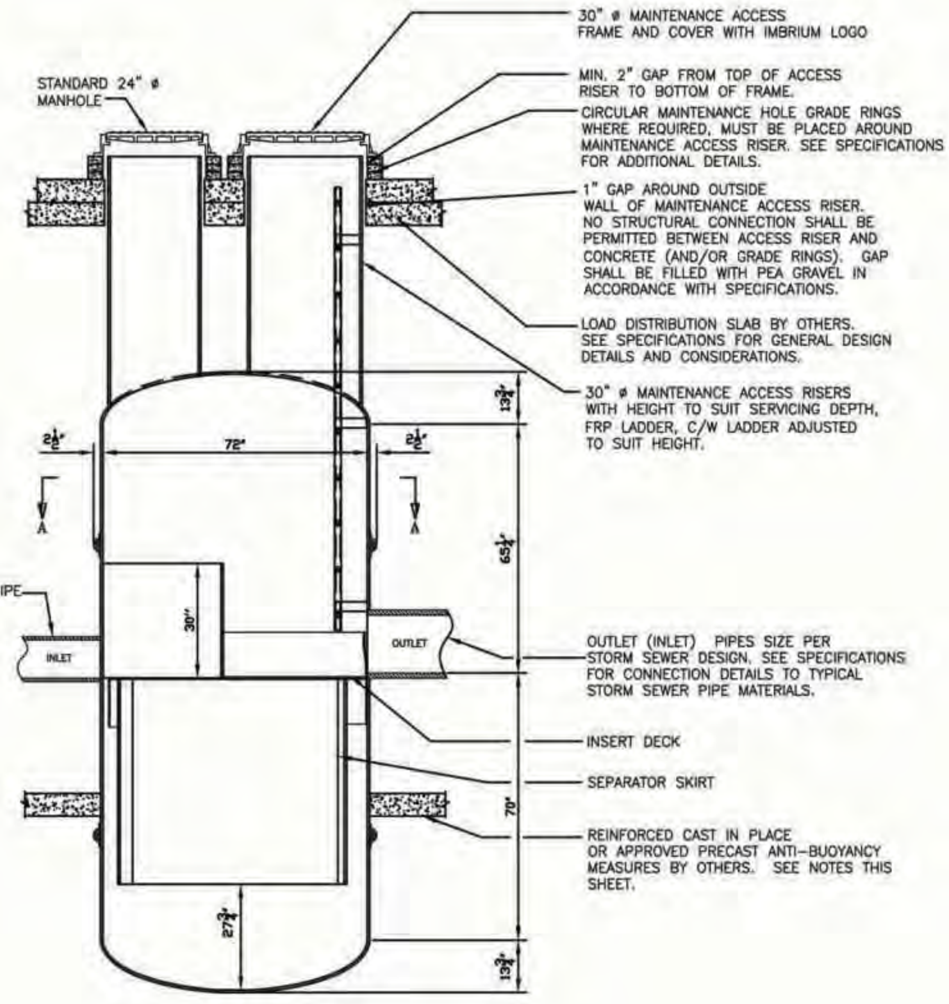
FRP (Fiberglass) Jellyfish® Filter
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

FRP (Fiberglass) Jellyfish® Filter Typical Section



Section View B–B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

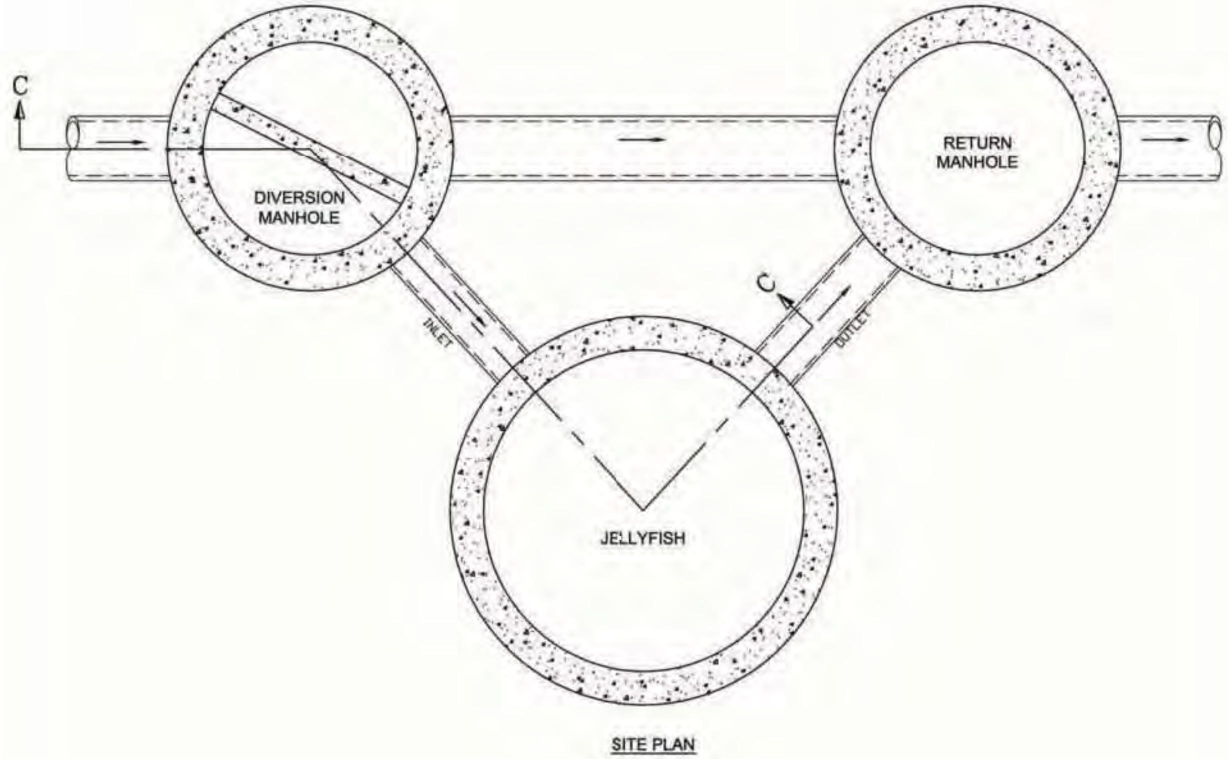
Notes

Appendix B

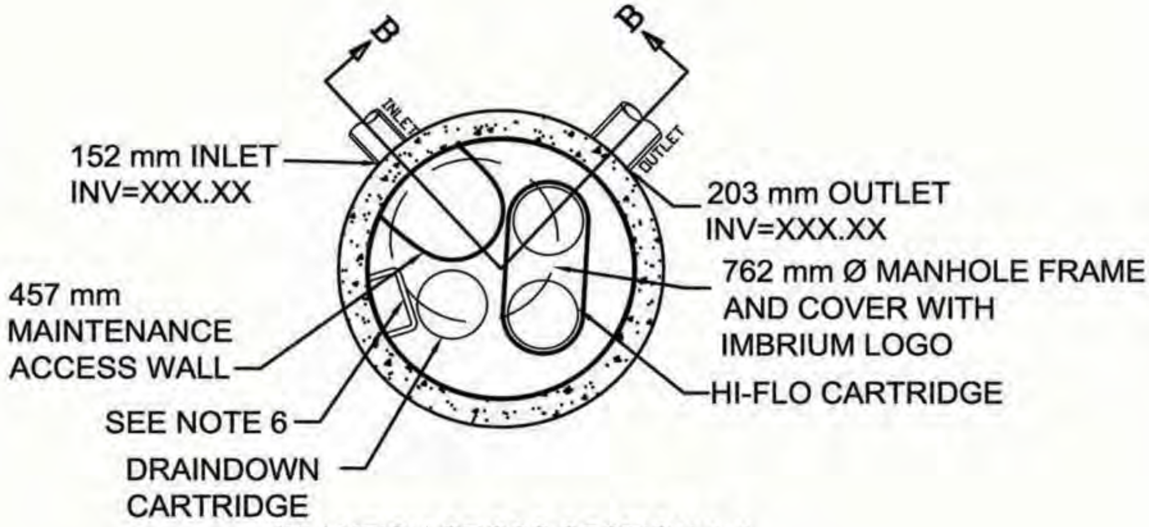
Jellyfish® Filter Standard Drawings
Metric Units

Notes

Jellyfish® Filter Typical Layout



Jellyfish® Filter JF4
Typical Section

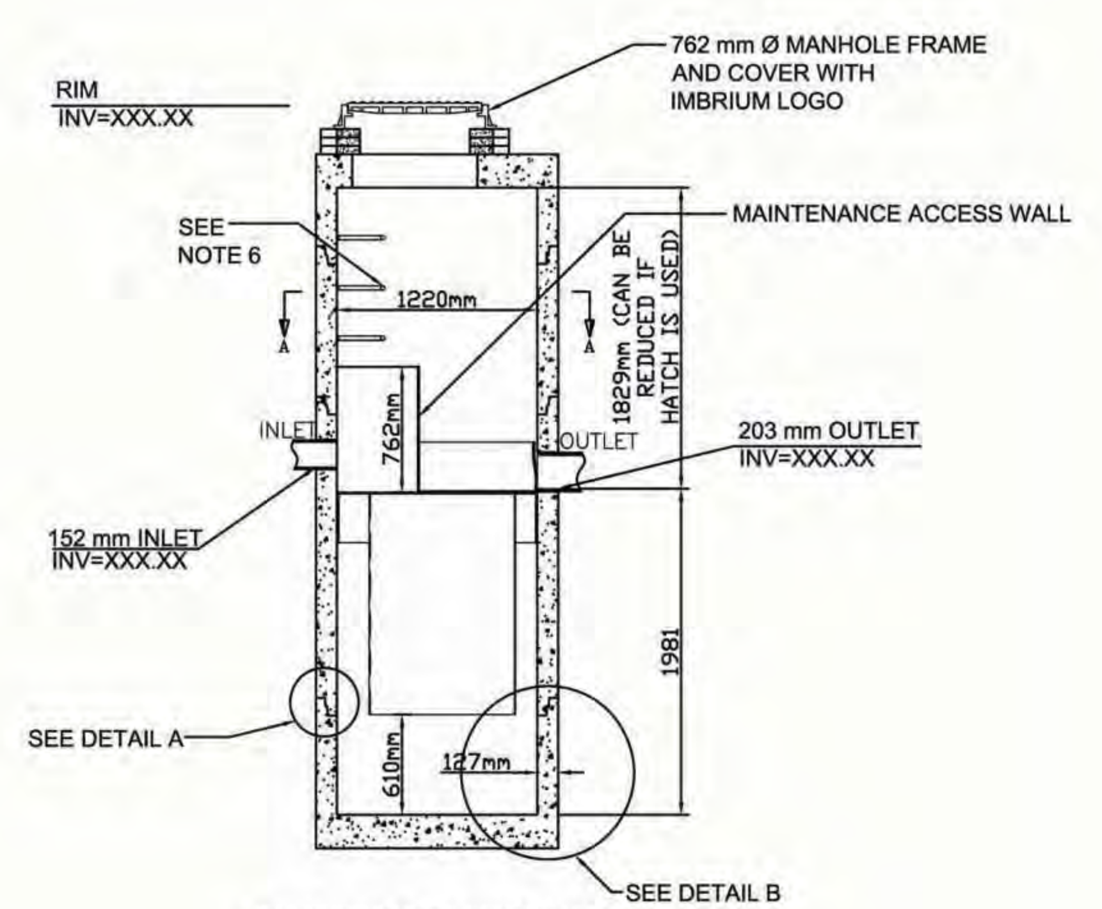


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF4
Typical Section

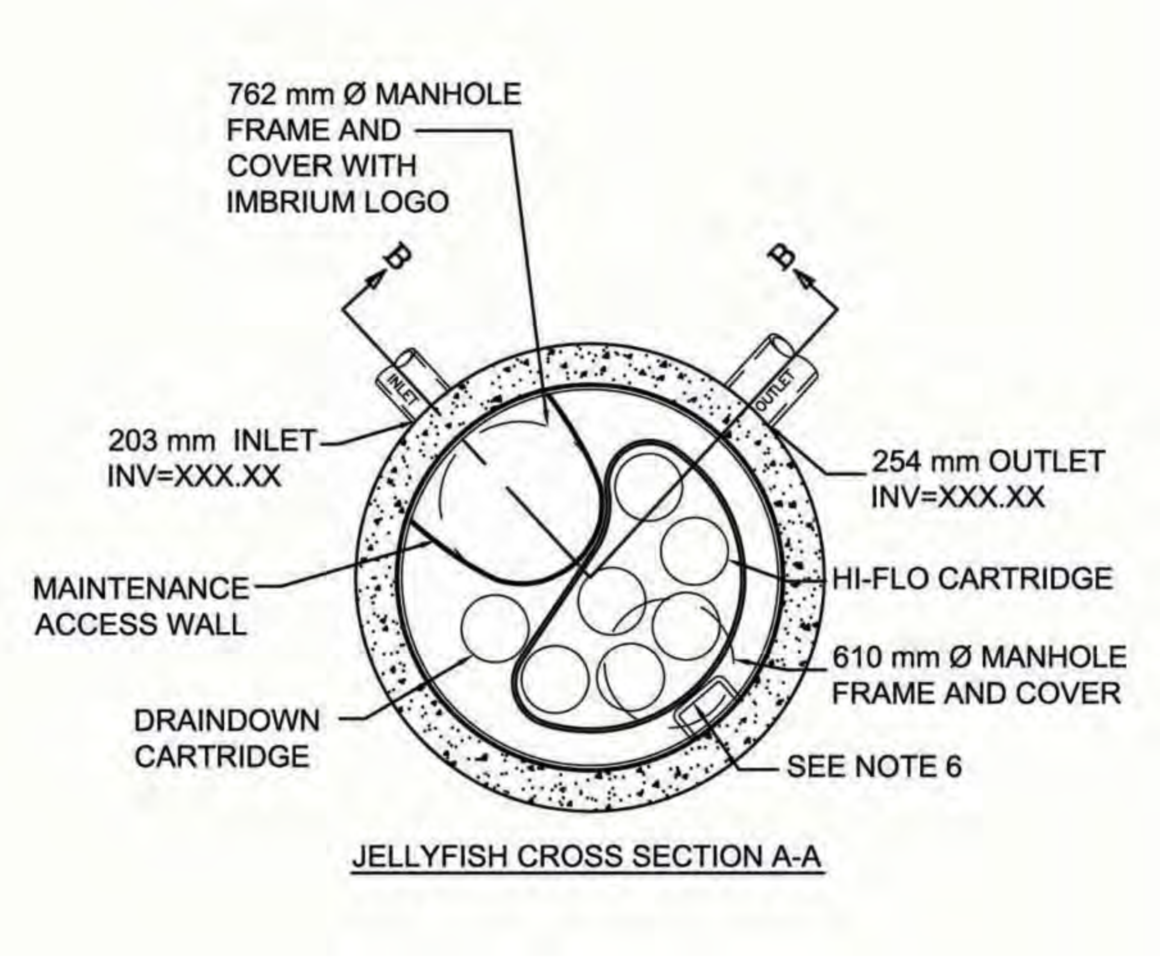


JELLYFISH CROSS SECTION B-B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

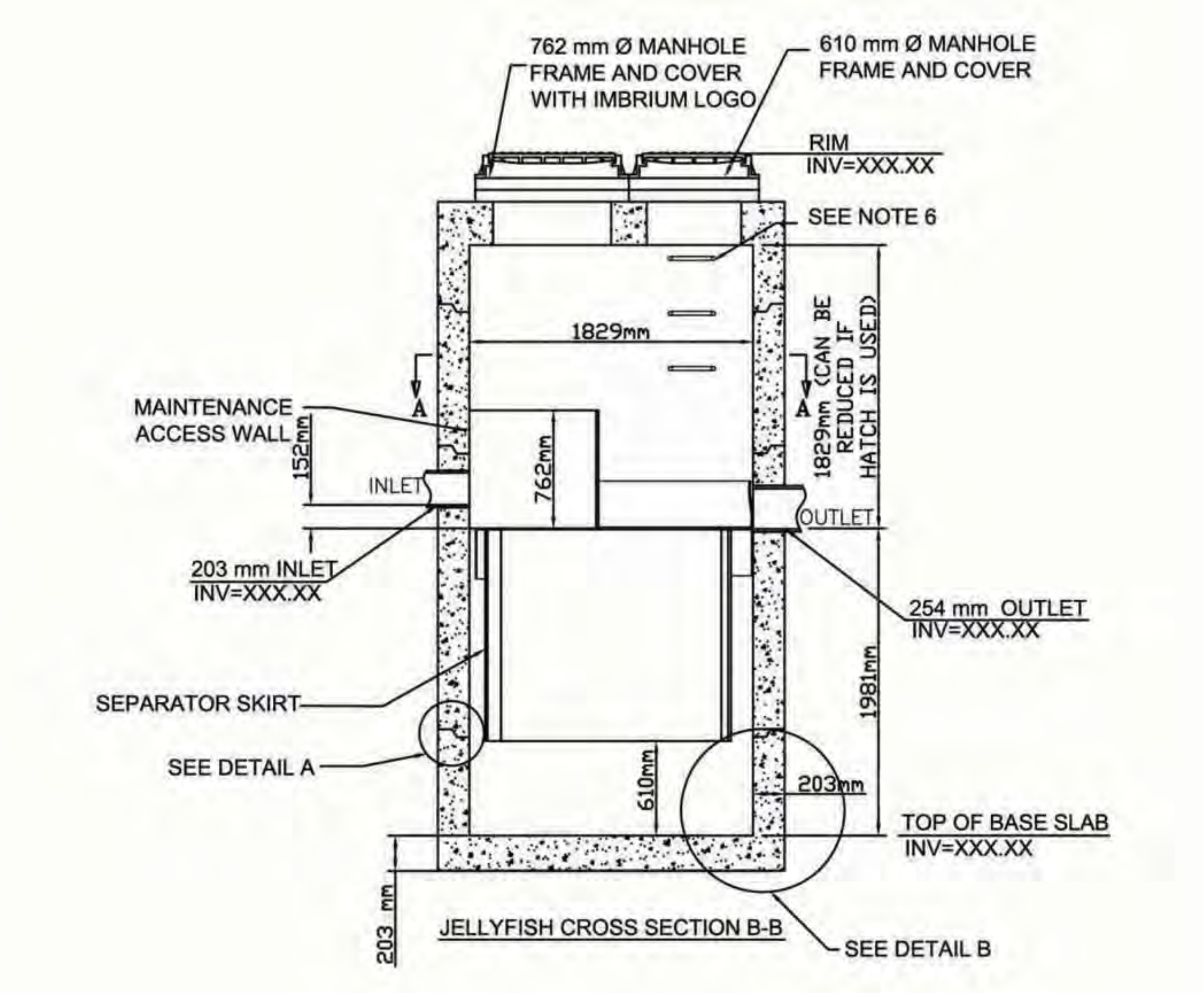
Jellyfish® Filter JF6
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

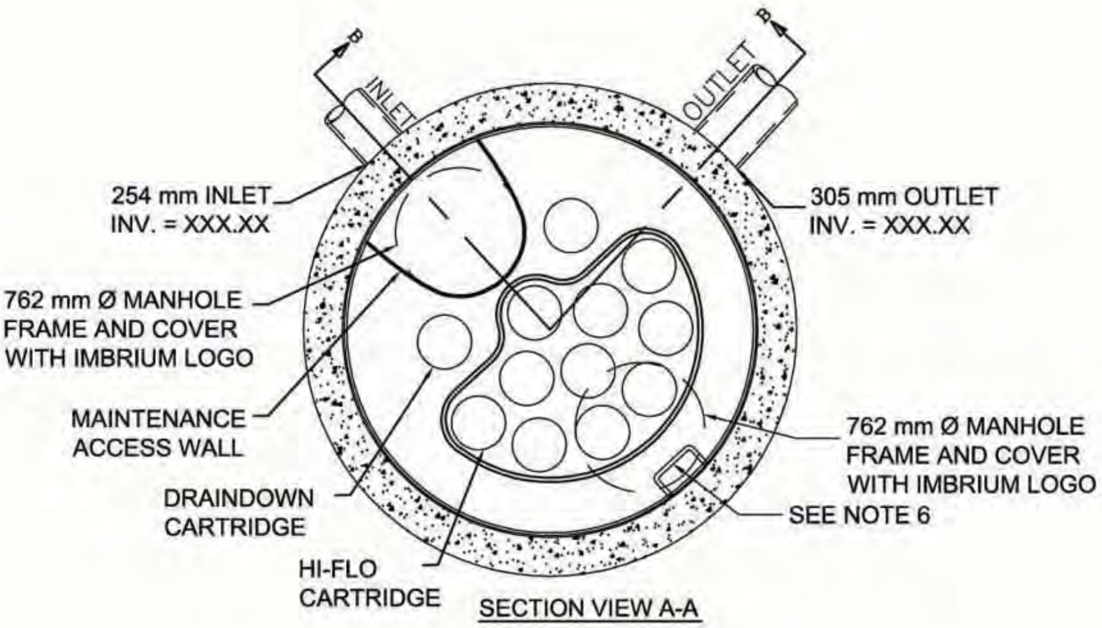
Jellyfish® Filter JF6
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF8
Typical Section

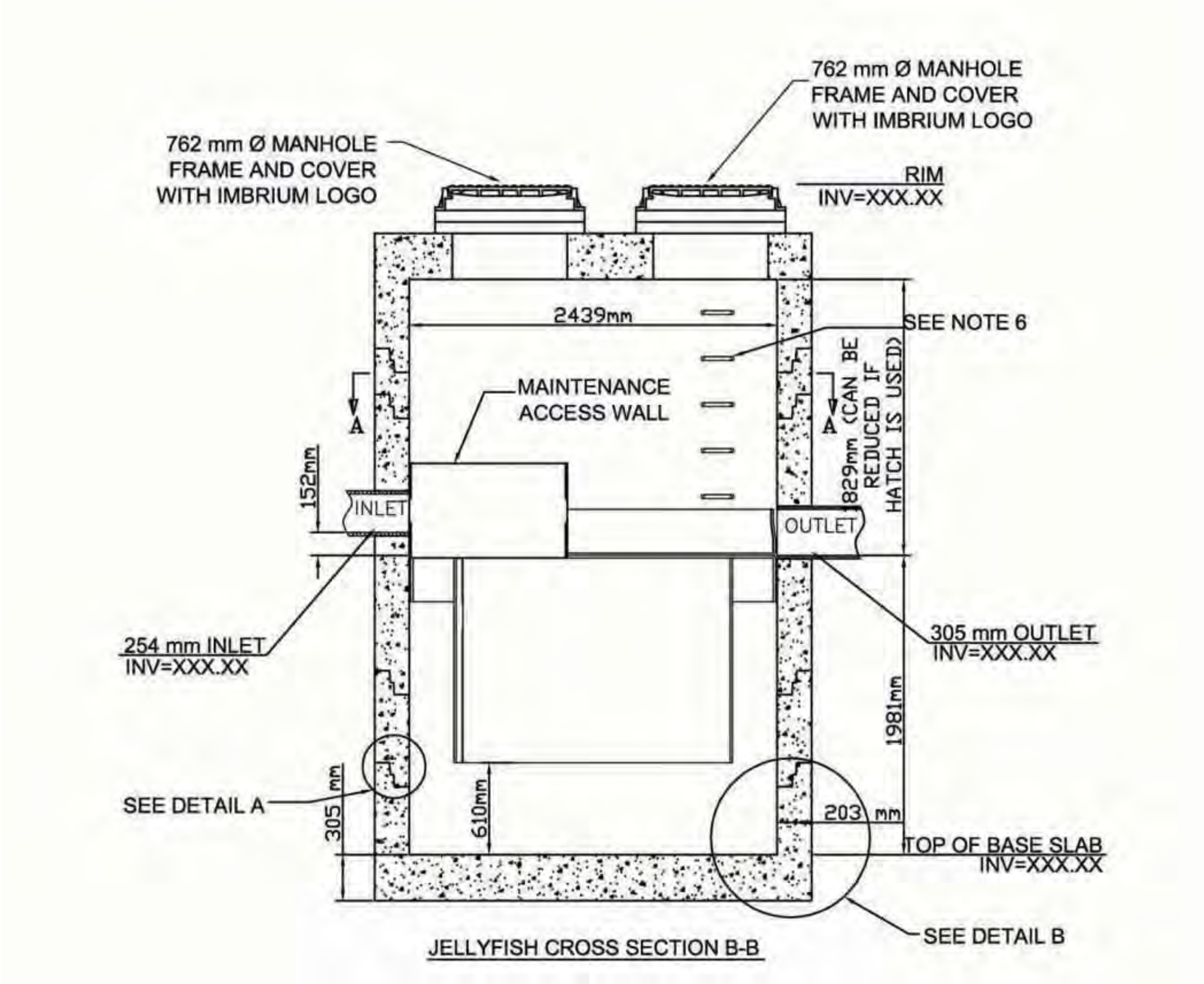


SECTION VIEW A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF8
Typical Section

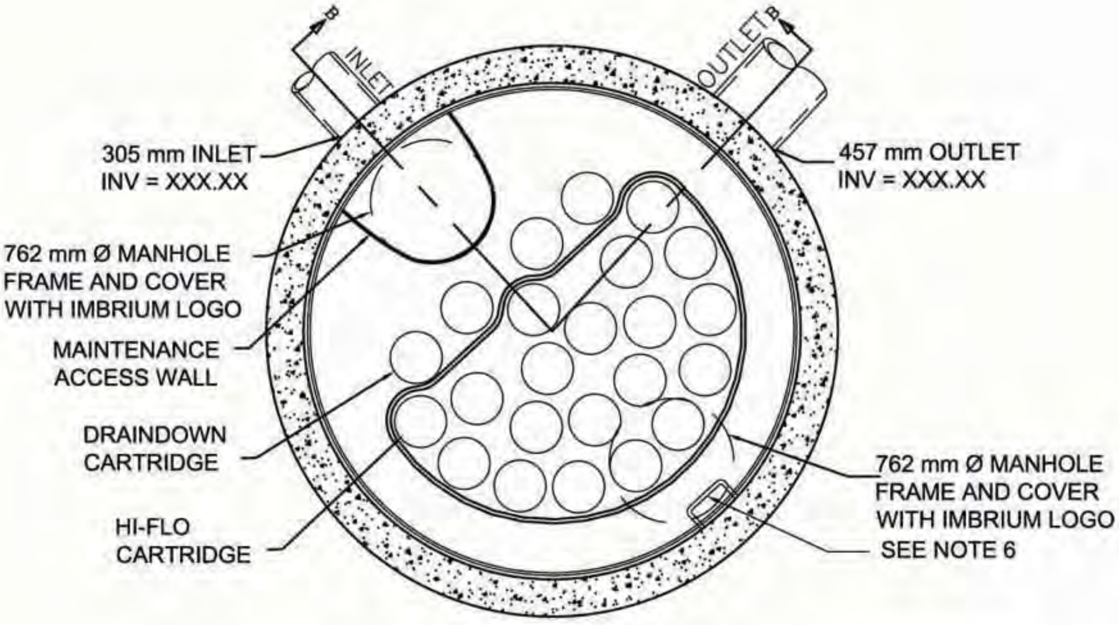


JELLYFISH CROSS SECTION B-B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter JF10 Typical Section

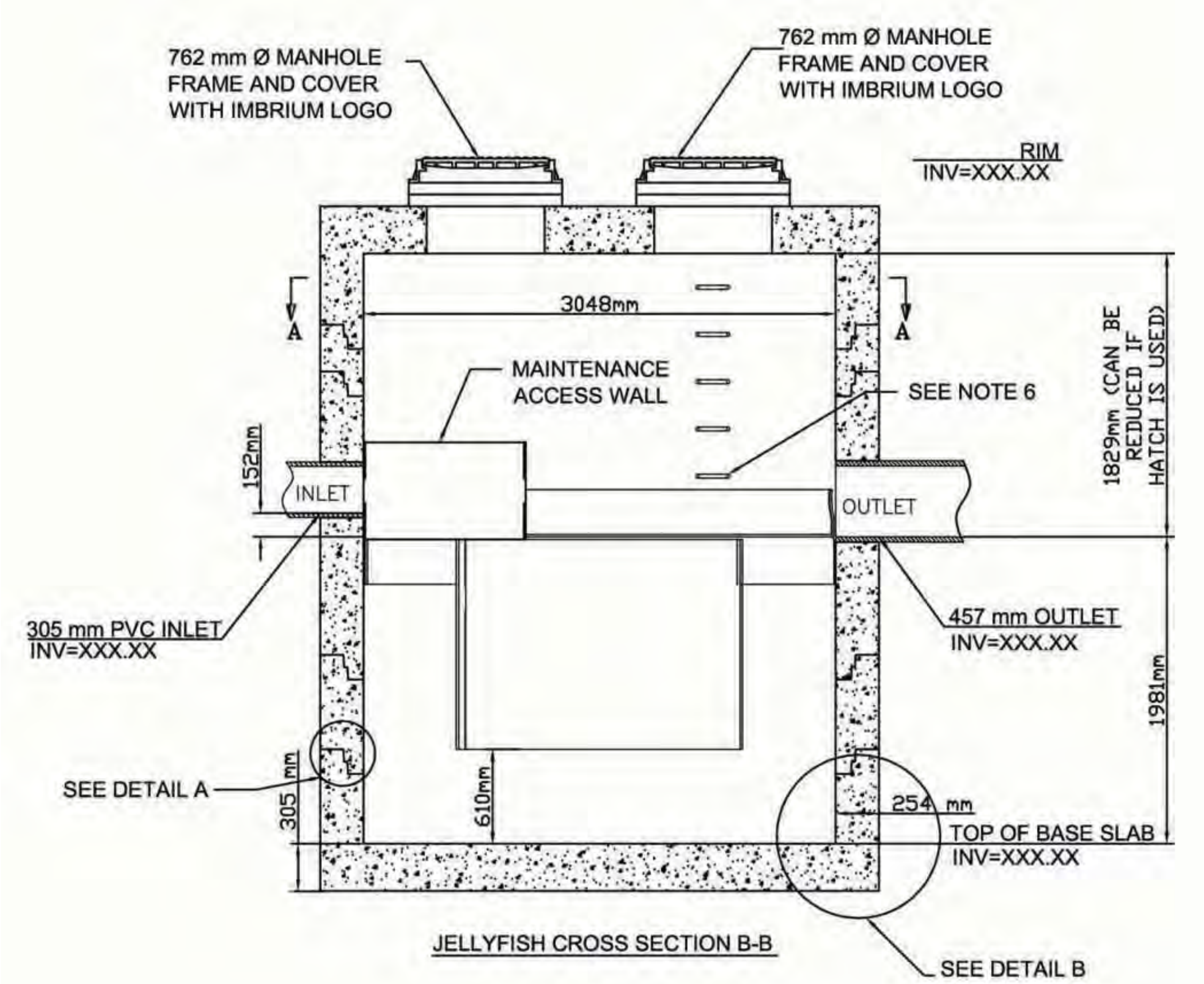


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

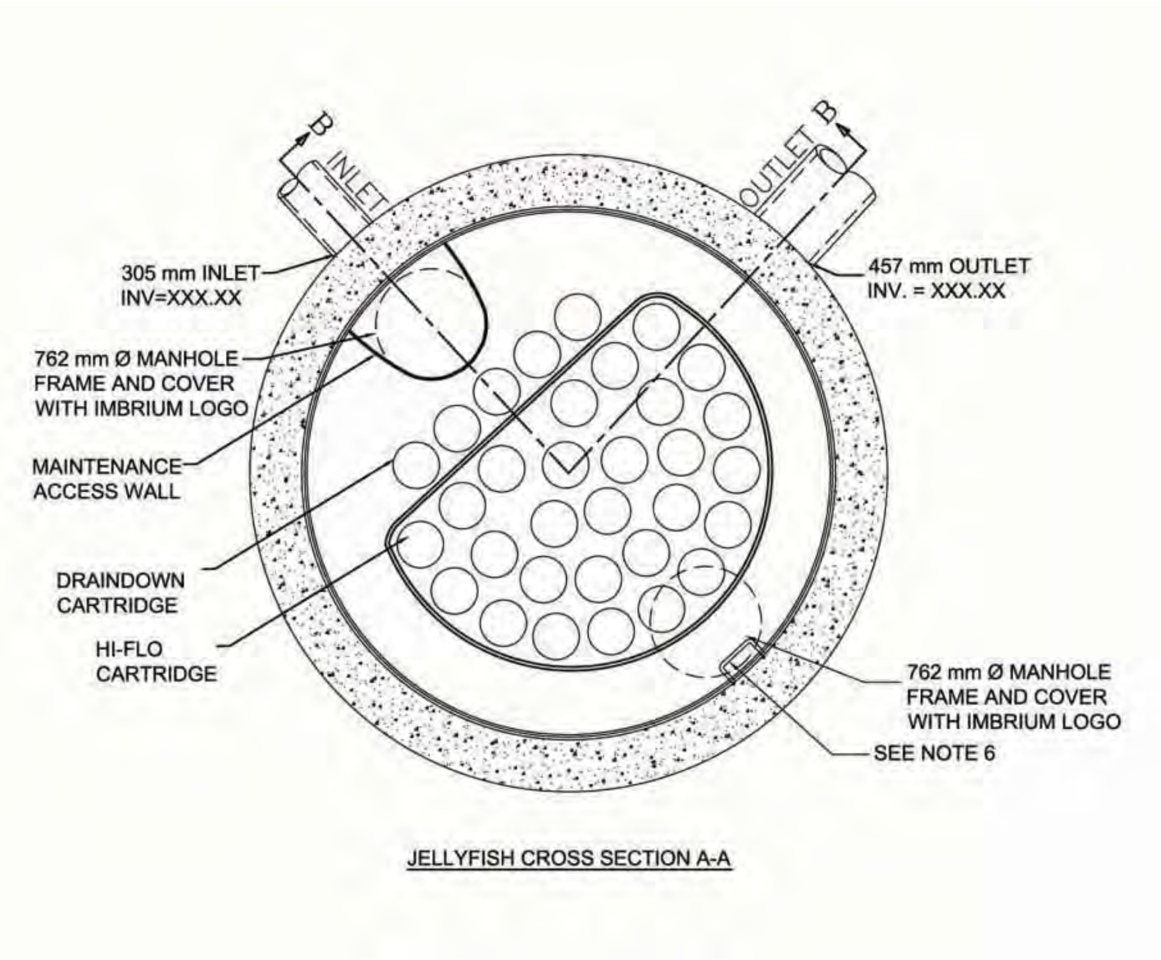
Jellyfish® Filter JF10 Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

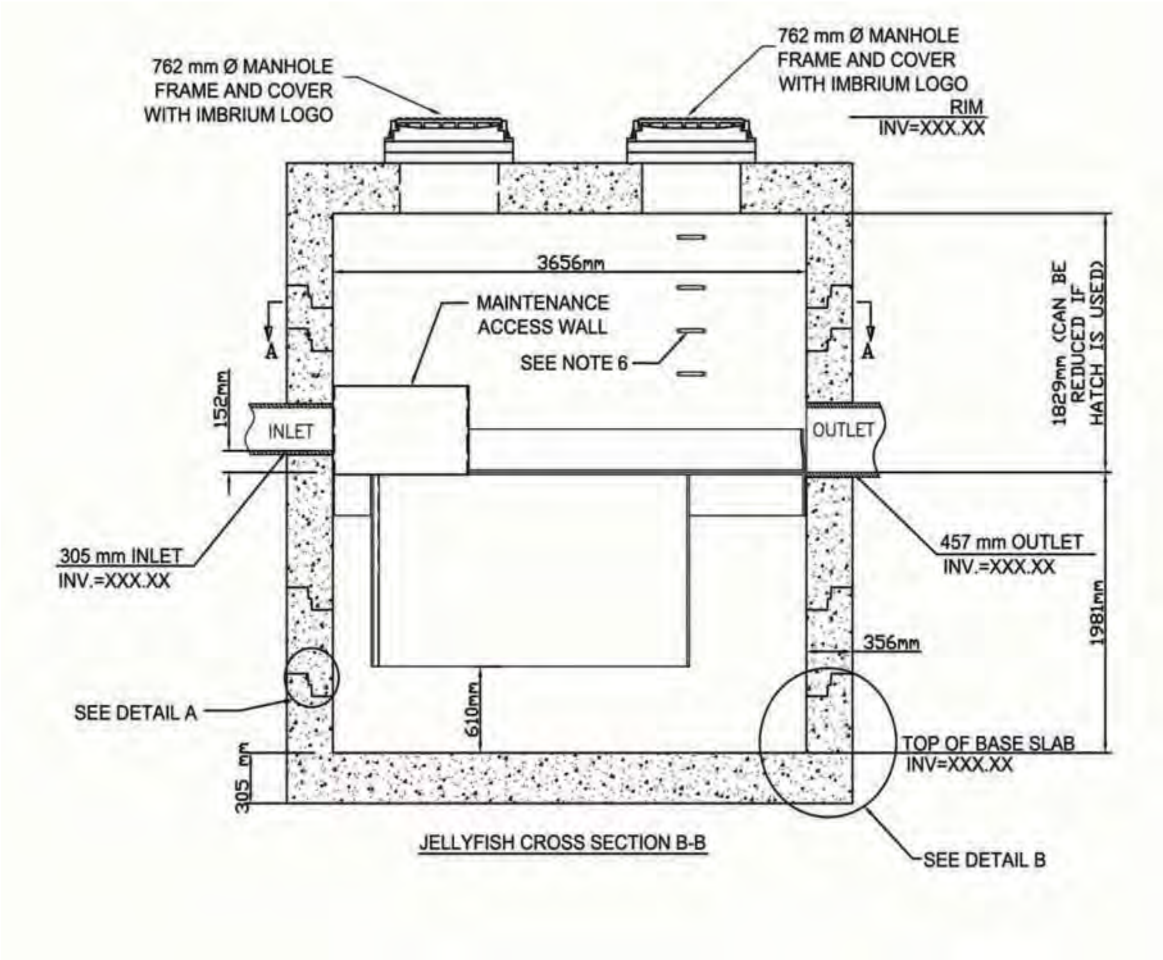
Jellyfish® Filter JF12
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

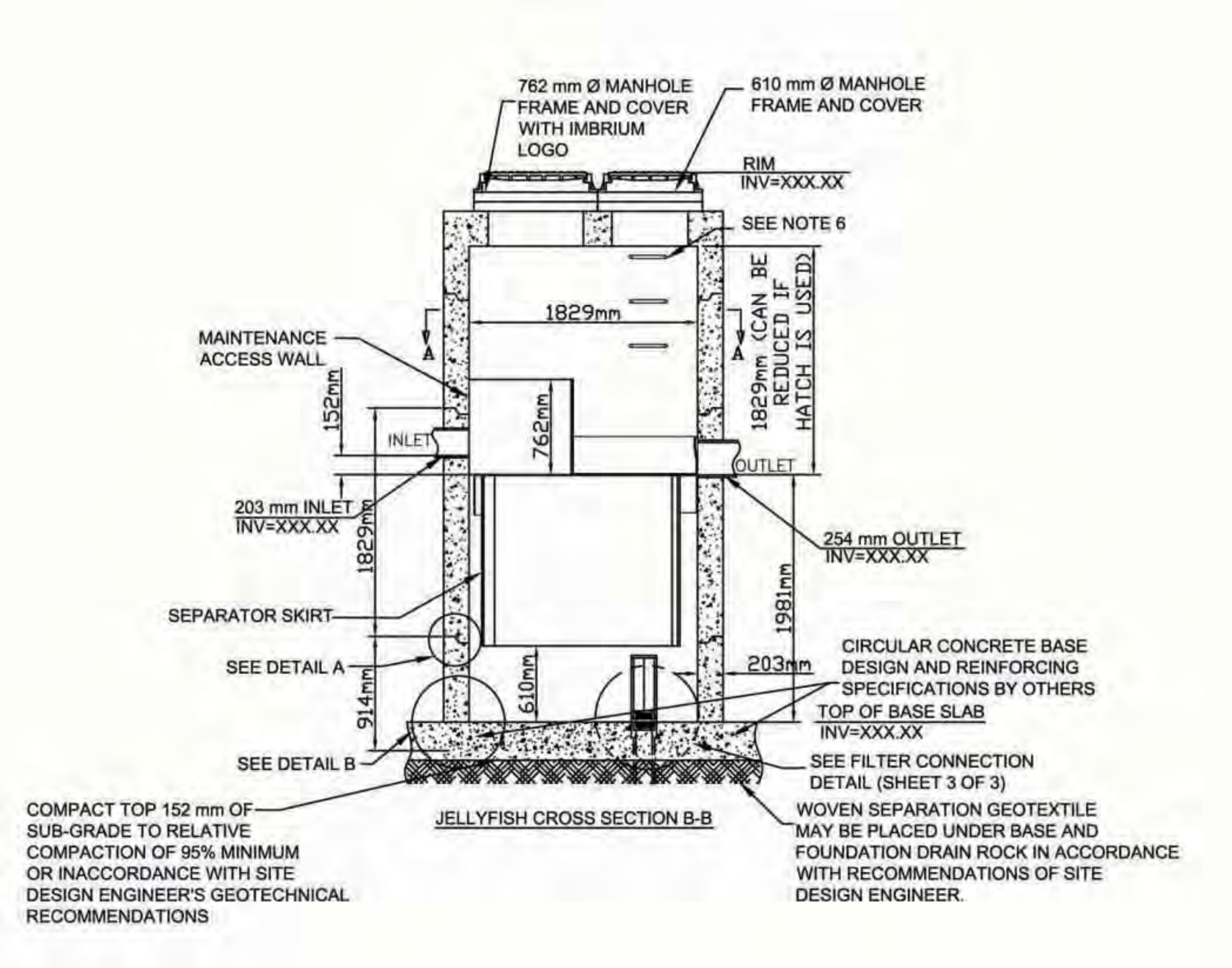
Jellyfish® Filter JF12
Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

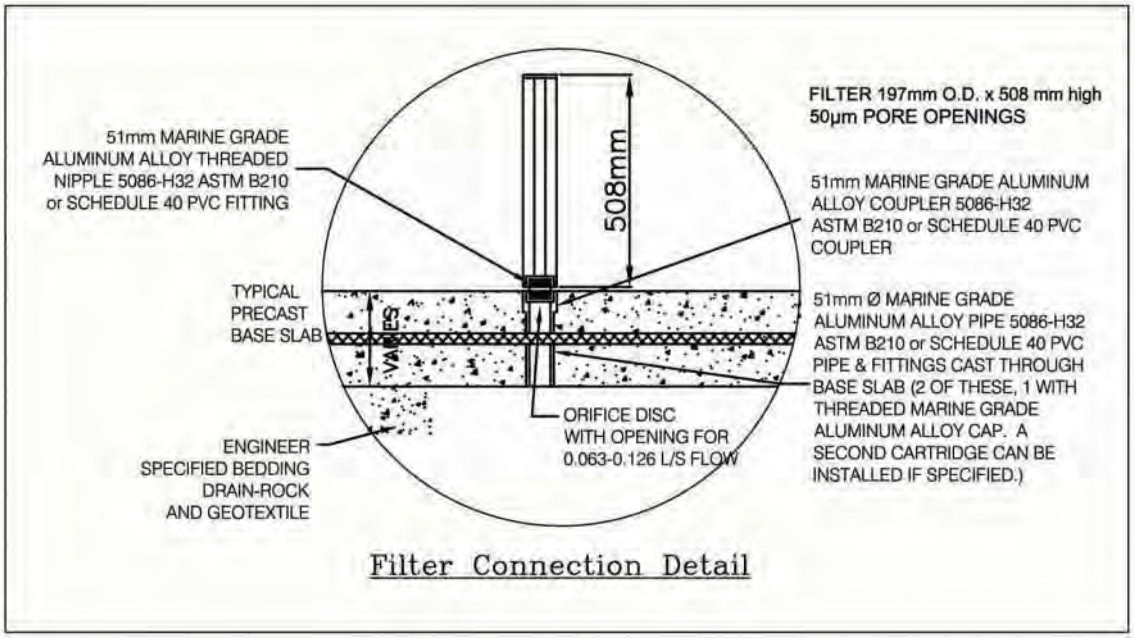
Jellyfish® Filter with Sump Drain Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

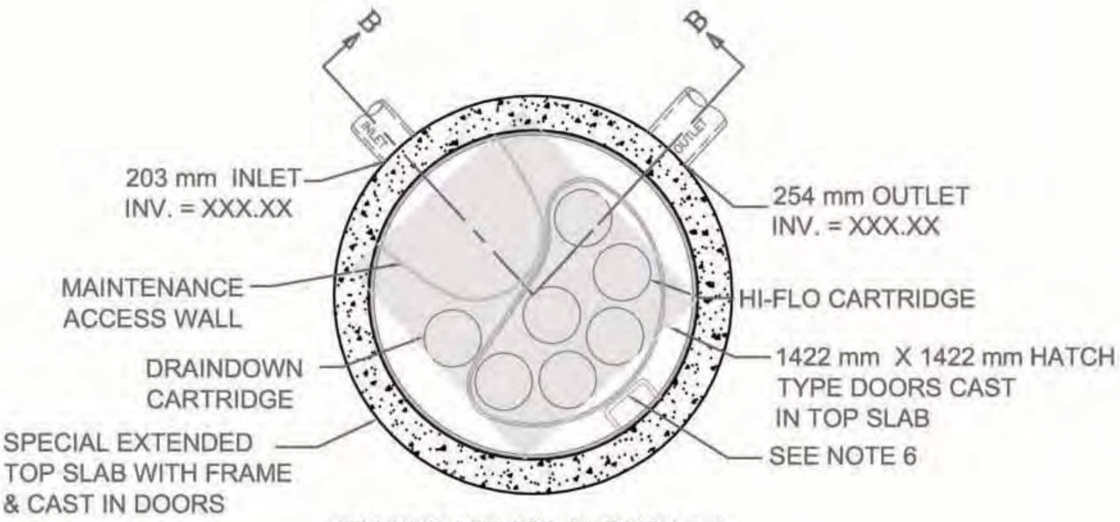
Jellyfish® Filter with Sump Drain Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter for Shallow Application (with Hatch) Typical Section

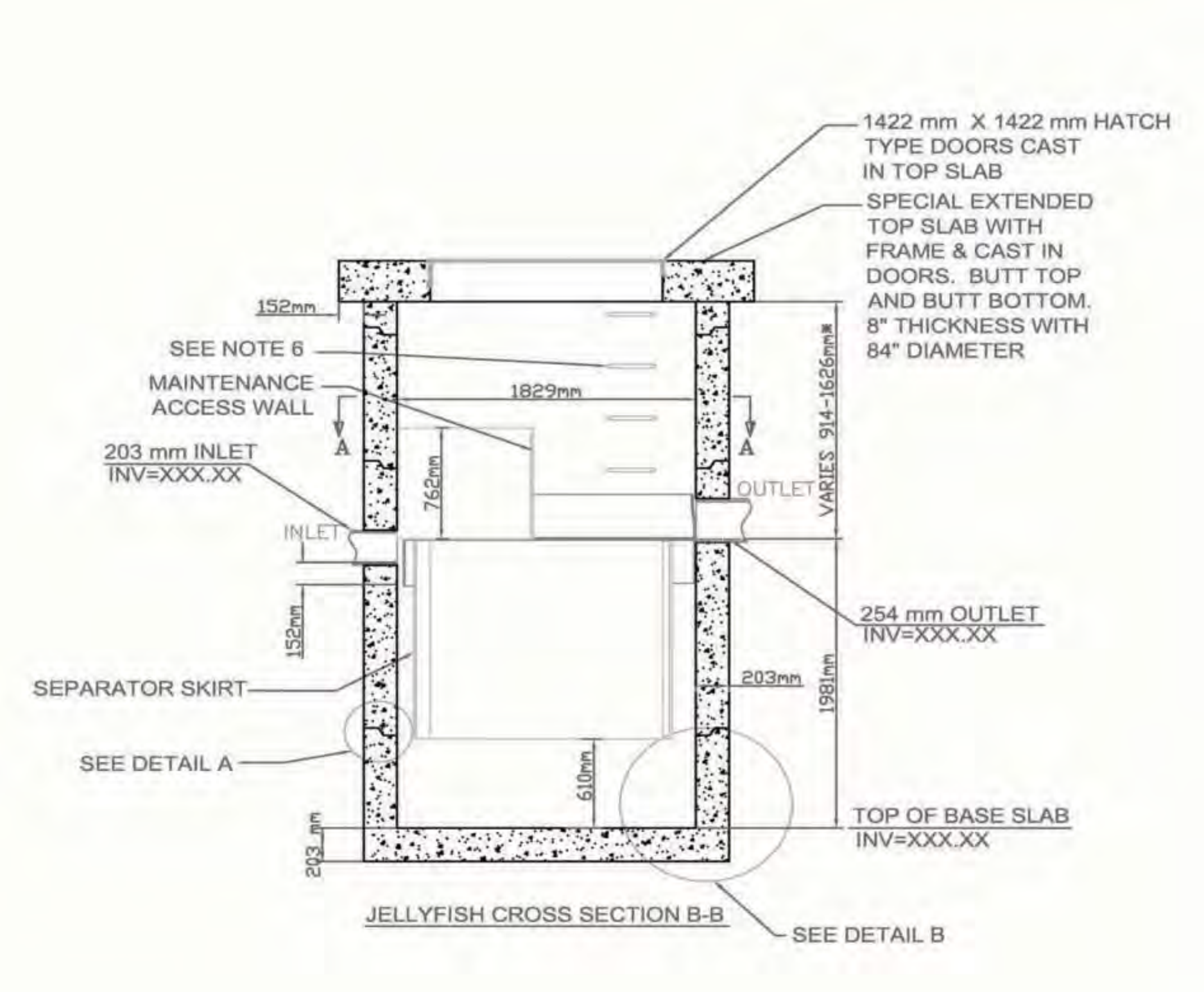


JELLYFISH CROSS SECTION A-A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

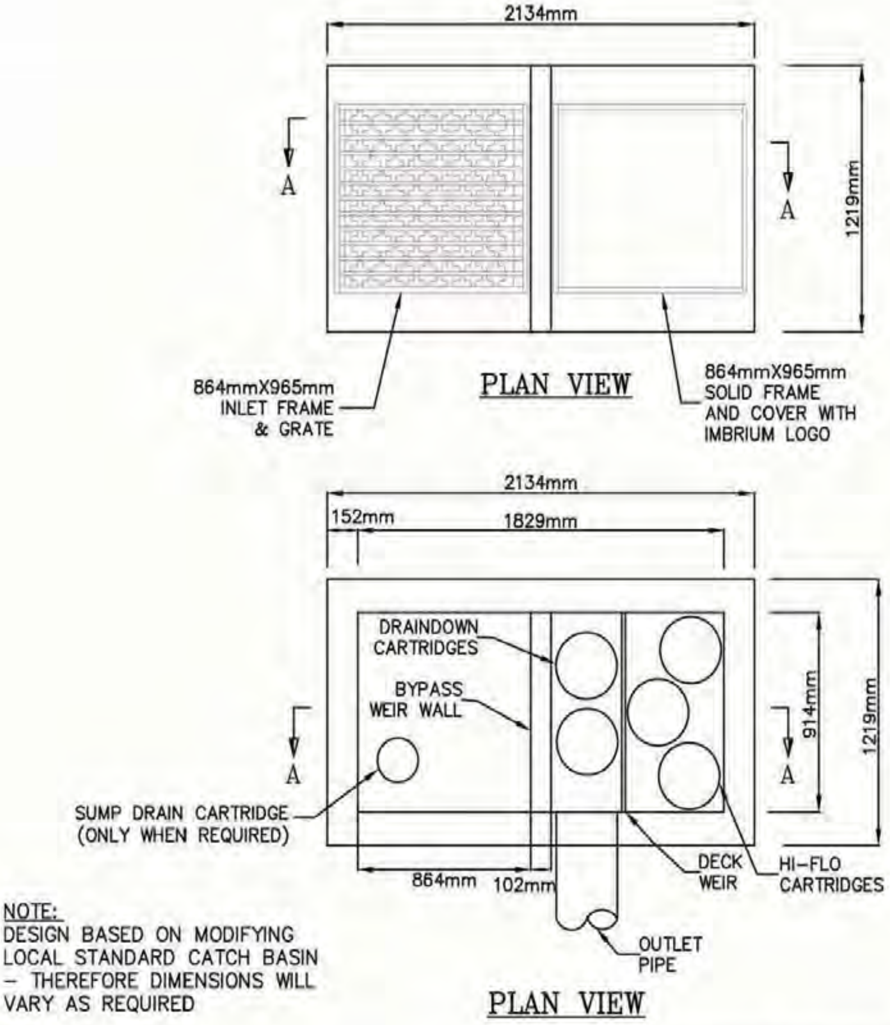
Jellyfish® Filter for Shallow Application (with Hatch) Typical Section



Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Jellyfish® Filter with Grated Inlet Typical Drawing

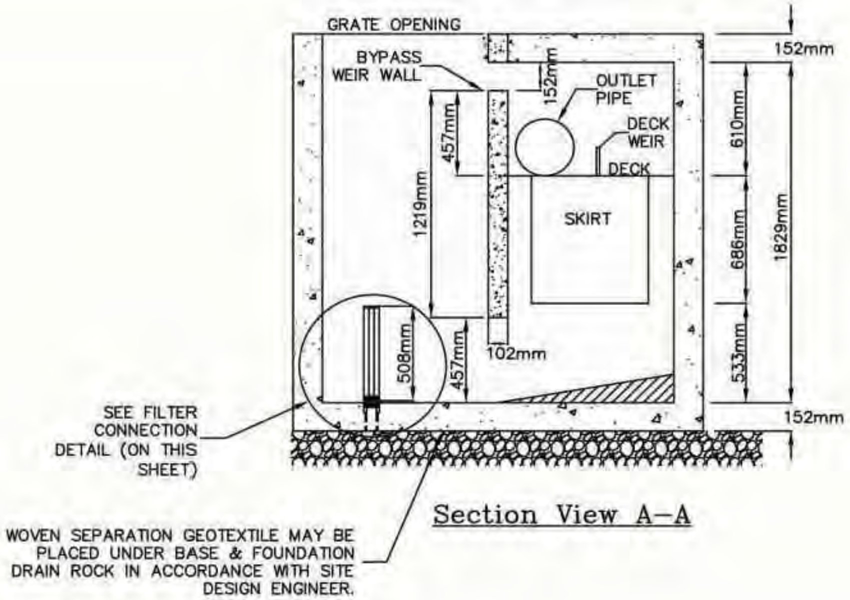


Cartridge Type	Cartridge Height (mm)	Flow Rate (L/S)
Draindown Cartridge	686	1.26
Hi-Flo Cartridge	686	2.52

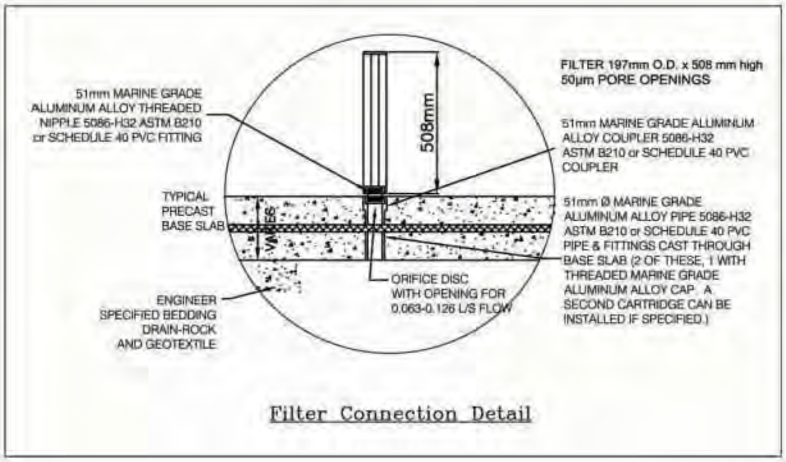
Drainage Area	0.10 ha
Impervious Area	0.10 ha
WQv Discharge	10.1 L/S
Treatment Flow Rate (L/S)	10.1 L/S
Hi-Flo Cartridges Req.	3
Draindown Cartridges Req.	2

**Computed using 1.0" of rainfall depth as the runoff from 90% of the average annual rainfall

Jellyfish® Filter with Grated Inlet
Typical Section

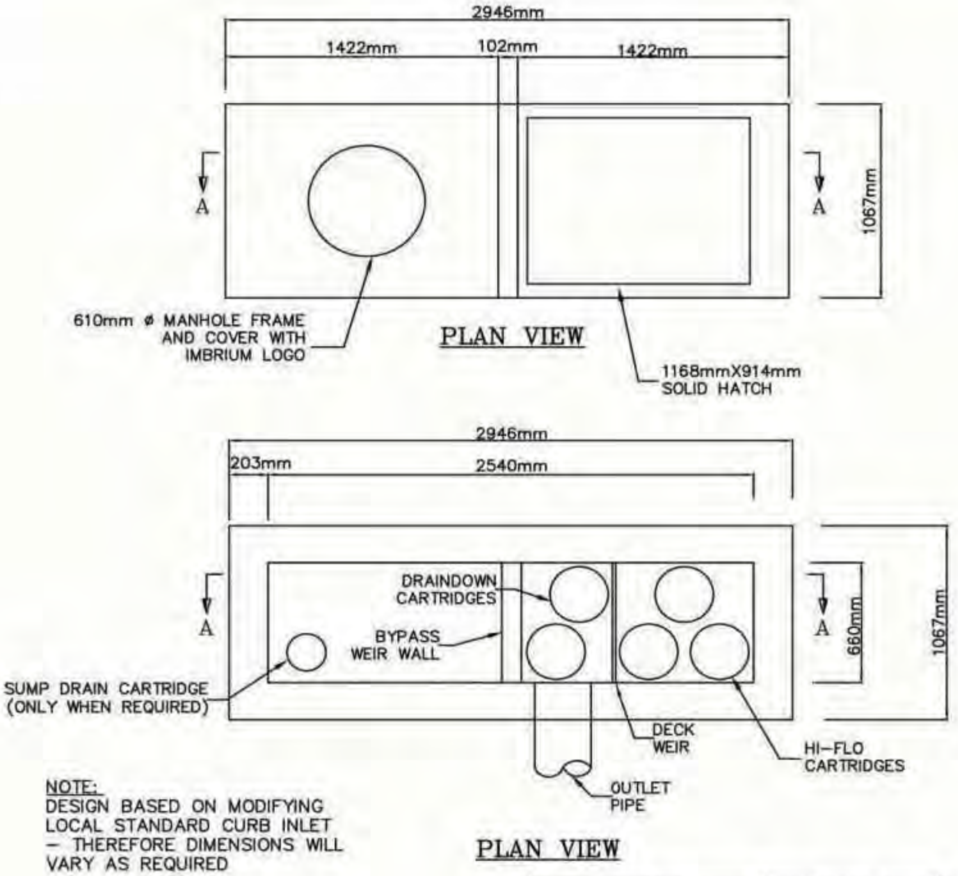


Section View A–A



Filter Connection Detail

Jellyfish® Filter with Curb Inlet
Typical Drawing



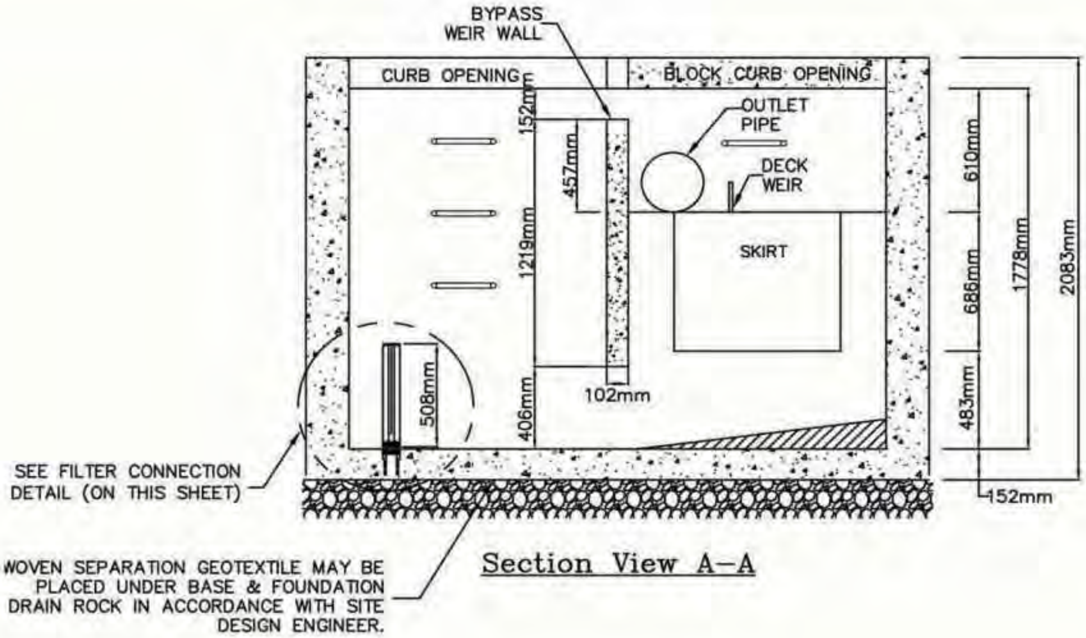
NOTE:
DESIGN BASED ON MODIFYING LOCAL STANDARD CURB INLET – THEREFORE DIMENSIONS WILL VARY AS REQUIRED

Cartridge Type	Cartridge Height (mm)	Flow Rate (L/S)
Draindown Cartridge	686	1.26
Hi–Flo Cartridge	686	2.52

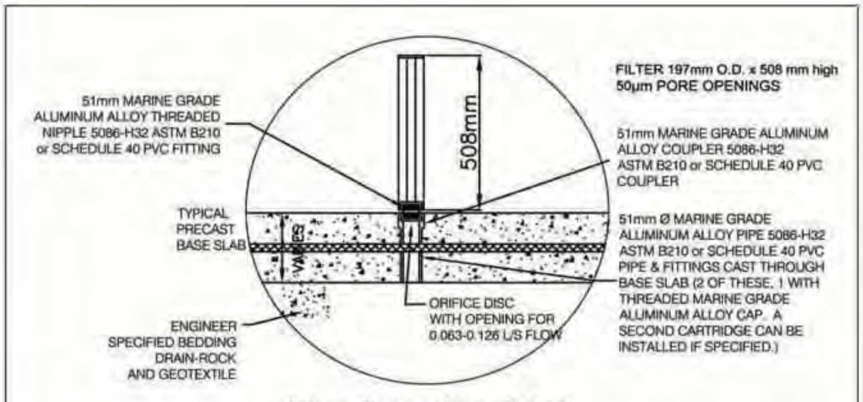
Drainage Area	0.10 ha
Impervious Area	0.10 ha
WQv Discharge	10.1 L/S
Treatment Flow Rate (L/S)	10.1 L/S
Hi–Flo Cartridges Req.	3
Draindown Cartridges Req.	2

**Computed using 1.0" of rainfall depth as the runoff from 90% of the average annual rainfall

Jellyfish® Filter with Curb Inlet Typical Section

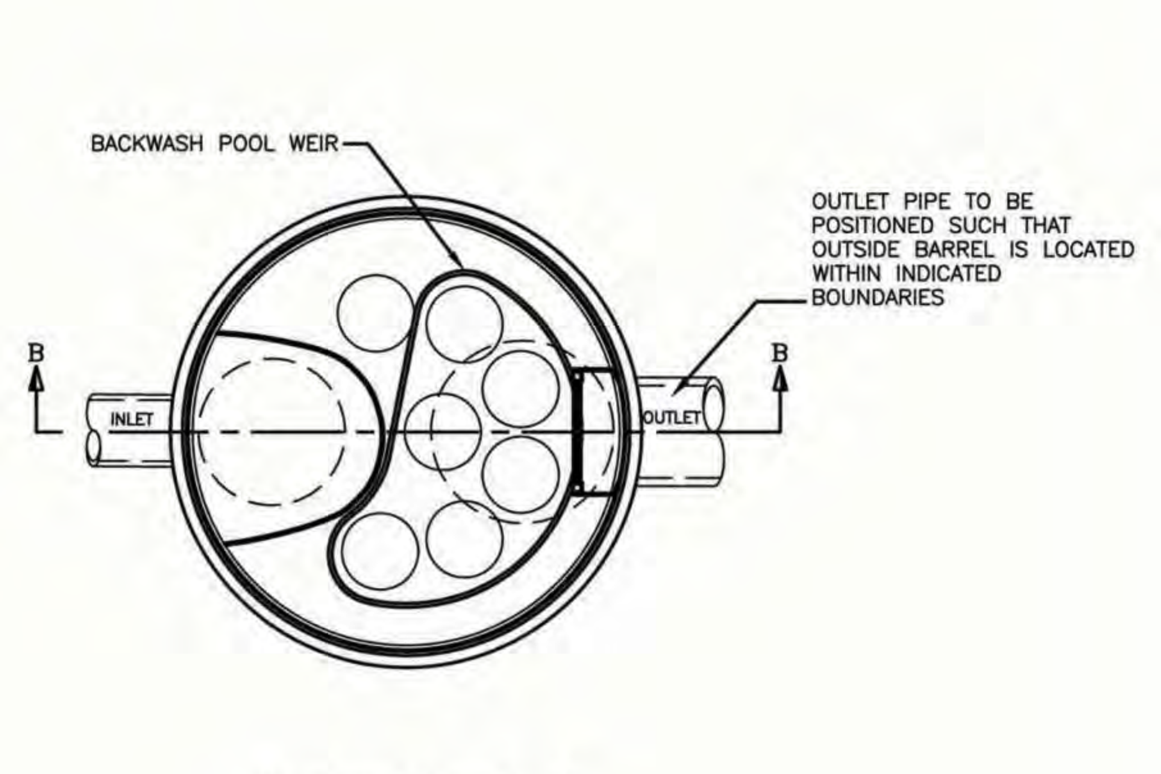


Section View A–A



Filter Connection Detail

FRP (Fiberglass) Jellyfish® Filter Typical Section

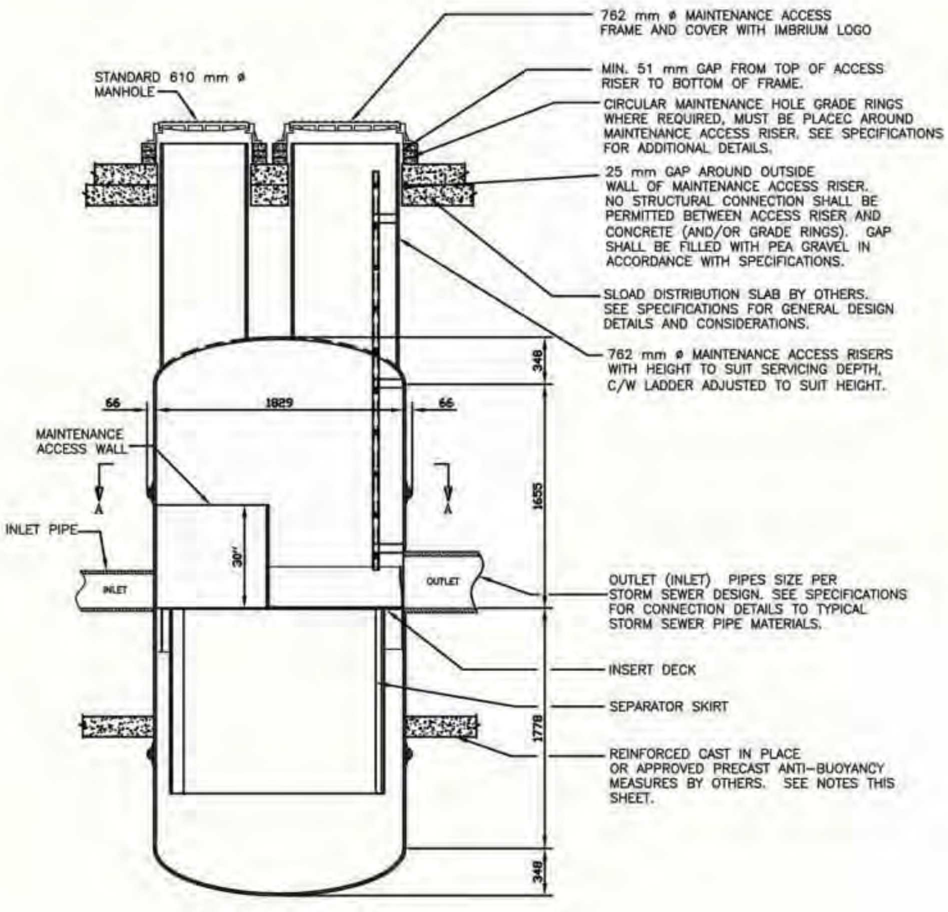


Section View A–A

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

FRP (Fiberglass) Jellyfish® Filter Typical Section



Section View B–B

Notes:

1. All sections and parts to meet or exceed ASTM C-478, ASTM C-443, and ASTM D-4097 corresponding to AASHTO specifications, and any other site or local standards.
2. Configuration of inlet and outlet can vary to meet site's needs.
3. Cartridge installation shall occur only after site has been stabilized and the Jellyfish unit is clean and free of debris. Cartridges shall be furnished new, at time of final acceptance.
4. The Jellyfish Membrane Filter is protected by the following patents: Patents Pending.
5. For site specific drawings please contact your local Imbrium Systems representative.

Notes

Appendix C

Jellyfish® Filter Standard Specifications
Water Quality Filter Treatment Device

Notes

Part 1- General

1.1 Work Included

Specifies requirements for construction and performance of an underground stormwater quality filter treatment device that removes pollutants from stormwater runoff through the unit operations of sedimentation, floatation and membrane filtration.

1.2 Reference Standards

ASTM C 891:	Specification for Installation of Underground Precast Concrete Utility Structures
ASTM D 4097:	Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks
ASTM C 478:	Specification for Precast Reinforced Concrete Manhole Sections
ASTM C 443:	Specification for Joints for Concrete Pipe and Manholes, Using Rubber Gaskets
ASTM D 4101:	Specification for Copolymer steps construction

1.3 Shop Drawings

Shop drawings for the structure and performance are to be submitted with each order to the contractor. Contractor shall forward shop drawing submittal to the consulting engineer for approval. Shop drawings are to detail the structure precast concrete and/or fiberglass (FRP) components.

1.4 Handling and Storage

Prevent damage to materials during storage and handling.

Part 2 - Products

2.1 General

2.1.1

The device shall be circular or rectangular and constructed from precast concrete riser and slab components or monolithic precast structure(s), installed to conform to ASTM C 891 and to any required state highway, municipal or local specifications. Alternatively, the device shall be constructed of fiberglass (FRP), installed to conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices.

2.1.2 Fiberglass Insert (Cartridge Deck)

The concrete device shall include a fiberglass insert bolted and sealed watertight inside the precast concrete chamber. Alternatively, the fiberglass device shall include a fiberglass insert bolted and/or chemically welded watertight inside the fiberglass chamber. The fiberglass insert shall serve as: (a) a horizontal divider between the lower treatment zone and the upper treated effluent zone; (b) a deck for attachment of filter cartridges such that the membrane filter elements of each cartridge extend into the lower treatment zone; (c) a platform for maintenance workers to service the filter cartridges; (d) a conduit for conveyance of treated water to the effluent pipe.

2.1.3 Membrane Filter Cartridges

Filter cartridges shall be comprised of cylindrical membrane filter elements connected to a perforated head plate. The number of membrane filter elements per cartridge shall be eleven 2.75-inch (70-mm) diameter elements. The length of each filter element shall be a minimum 27 inches (690 mm). Each cartridge shall be fitted into the cartridge deck by insertion into a cartridge receptacle that is permanently mounted into the cartridge deck. Each cartridge shall be secured by a cartridge lid that is threaded onto the receptacle. The maximum treatment flow rate of a filter cartridge shall be controlled by an orifice in the cartridge lid and based on a design flux rate determined by the maximum treatment flow rate per unit of filtration membrane surface area. The maximum flux rate shall be 0.21 gpm/ft2 (0.142 lps/m2).

Each lightweight membrane filter cartridge shall allow for manual installation and removal and shall have a dry installation weight not to exceed the following:

Cartridge Length		Maximum Cartridge Dry Weight for Installation	
27 inches	690 mm	20 pounds	9 kg
54 inches	1,370 mm	25 pounds	12 kg

2.1.4 Backwashing Cartridges

The filter device shall have a weir extending above the cartridge deck that encloses the high flow rate filter cartridges when placed in their respective cartridge receptacles within the cartridge deck. The weir shall collect a pool of water during inflow events that subsequently automatically backwashes the hi flo rate cartridges when the inflow event subsides. All filter cartridges shall allow for use of a manual backwashing or filtration membrane rinsing procedure to restore flow capacity and sediment capacity and extend cartridge service life.

2.1.5 Maintenance Access to Captured Pollutants

A Maintenance Access Wall shall enclose an opening in the cartridge deck that has minimum diameter of 18 inches (450 mm) and thereby provide suitable access for removal of accumulated floatable pollutants and sediment.

2.1.6 Bend Structure

The device shall be able to be used as a bend structure with minimum angles between inlet and outlet pipes of 66-degrees or less in the stormwater conveyance system.

2.1.7 Double-Wall Containment of Hydrocarbons

The precast concrete device shall provide double-wall containment for hydrocarbon spill capture by a combined means of an inner wall of fiberglass, to a minimum depth of 12 inches (305 mm) below the cartridge deck and the precast vessel wall. Alternatively, a device constructed of fiberglass (FRP) does not require double-wall containment as fiberglass is resistant to hydrocarbon penetration.

2.1.8 Separator Skirt

The device shall provide a flexible separator skirt that extends from the underside of the cartridge deck to a minimum length equal to the length of the membrane filter elements. The separator skirt shall serve as a baffle to protect the membrane filter elements from contamination by floatables and coarse sediment.

2.1.9 Sump

The device must include a minimum 24 inches (610 mm) of sump below the bottom of the cartridges for sediment accumulation, unless otherwise specified by the design engineer.

2.2 Precast Concrete Sections

All precast concrete components shall be manufactured to a minimum live load of HS-20 truck loading or greater based on local regulatory specifications, unless otherwise modified or specified by the design engineer.

2.3 Gaskets

All gaskets used for the concrete joints shall be manufactured using neoprene or nitrile rubber gaskets to prevent deterioration from presence of captured petroleum hydrocarbons. Mastic sealants or butyl tape are not an acceptable alternative as they are prone to leakage of petroleum hydrocarbons.

2.4 Frame and Cover

Frame and covers must be manufactured from cast-iron and embossed with the name of the device manufacturer or the device brand name.

2.5 Doors and Hatches

If provided shall meet designated loading requirements at a minimum for incidental traffic.

2.5 Concrete

All concrete components shall be manufactured according to local specifications and shall meet the requirements of ASTM C 478.

2.6 Fiberglass

The fiberglass portion of the water treatment device shall be constructed in accordance with the following standard: ASTM D-4097: Contact Molded Glass Fiber Reinforced Chemical Resistant Tanks.

2.7 Steps

Steps shall be constructed according to ASTM D4101 of copolymer polypropylene and be driven into preformed or pre-drilled holes after the concrete has cured, installed to conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices.

2.8 Inspections

All precast concrete sections shall be inspected to ensure that dimensions, appearance and quality of the product meet local municipal specifications and ASTM C 478.

Part 3 – Performance

3.1 General

3.1.1 Function

The stormwater quality filter treatment device functions to remove pollutants by the following unit treatment processes; sedimentation, floatation and membrane filtration.

3.1.2 Pollutants

The stormwater quality filter treatment device removes oil, debris, trash, sediment, sediment-bound pollutants, metals and nutrients from stormwater during frequent wet weather events.

3.1.3 Bypass

The stormwater quality filter treatment device typically operates off-line.

3.1.4 Treatment Flux Rate

The stormwater quality filter treatment device shall treat 100% of the required water quality treatment flow based on a maximum treatment flux rate across the membrane filter cartridges of 0.21 gpm/ft2 (0.142 lps/m2).

3.2 Field Test Performance

At a minimum, the stormwater quality filter device shall have been field tested with a minimum 20 TARP qualifying rain events and field monitoring conducted according to the TARP or TAPE field test protocol.

3.2.1 Suspended Solids Removal

The stormwater quality filter treatment device shall have demonstrated a minimum mean TSS removal efficiency of 85%, and a minimum mean SSC removal of 95%.

3.2.2 Fine Particle Removal

The stormwater quality filter treatment device shall demonstrate the ability to capture fine particles as indicated by an effluent d50 of 15 microns or lower for all monitored storm events, and an effluent turbidity of 25 NTUs or lower.

3.2.3 Nutrient (Total Phosphorus & Total Nitrogen) Removal

The stormwater quality filter treatment device shall have demonstrated a minimum mean Total Phosphorus removal of 55%, and a minimum mean Total Nitrogen removal of 50%.

3.3 Lab Test Performance

3.3.1 Suspended Solids Removal

The stormwater quality treatment device shall demonstrate the ability to remove a minimum of 85% of Sil-Co-Sil 106 (d50 = 22 microns), measured as SSC, with a 95% confidence interval at the system's 100% operating rate with influent sediment concentrations ranging from 100 to 300 mg/L.

3.4 Inspection and Maintenance

The stormwater quality filter device shall have the following features:

3.4.1 The membrane filter elements shall be designed to last three years prior to requiring replacement.

3.4.2 Inspection which includes trash and floatables collection, sediment depth determination, and visible determination of backwash pool depth shall be easily conducted from grade.

3.4.3 Manual backflushing of the filter cartridges shall be possible to restore the flow capacity and sediment capacity of the filter cartridges and therefore extend cartridge service life.

3.4.4 Filter treatment shall have a minimum 12 inches (610 mm) of sediment storage depth.

3.4.5 Sediment removal from the filter treatment device shall be conducted using a standard maintenance truck and vacuum apparatus, and a single point of entry through the cartridge deck that is unobstructed by filter cartridges.

3.4.6 Filter cartridges be easily maintained without the use of additional lifting equipment.

Part 4 – Execution

4.1 Precast & Installation

4.1.1 Construction Sequence

The installation of a precast concrete device should conform to ASTM C 891 and to any state highway, municipal or local specifications for the construction of manholes. Selected sections of a general specification that are applicable are summarized below.

The precast concrete device is installed in sections in the following sequence:

- aggregate base
- base slab
- treatment chamber and cartridge deck riser section(s)
- bypass section
- connect inlet and outlet pipes
- riser section and/or transition slab (if required)
- maintenance riser section(s) (if required)
- frame and access cover

The precast base should be placed level at the specified grade. The entire base should be in contact with the underlying compacted granular material. Subsequent sections, complete with joint seals, should be installed in accordance with the precast concrete manufacturer’s recommendations.

Adjustment of the stormwater quality treatment device can be performed by lifting the upper sections free of the excavated area, re-leveling the base, and re-installing the sections. Damaged sections and gaskets should be repaired or replaced as necessary. Once the stormwater quality treatment device has been constructed, any lift holes must be plugged watertight with mortar or non-shrink grout.

4.1.2 Inlet and Outlet Pipes

Inlet and outlet pipes should be securely set into the device using approved pipe seals (flexible boot connections, where applicable) so that the structure is watertight.

4.1.3 Frame and Cover Installation

Adjustment units (e.g. grade rings) should be installed to set the frame and cover at the required elevation. The adjustment units should be laid in a full bed of mortar with successive units being joined using sealant recommended by the manufacturer. Frames for the cover should be set in a full bed of mortar at the elevation specified.

4.2 Fiberglass (FRP) Installation

4.2.1 Construction Sequence

The installation of the FRP device should conform to applicable sections of state, provincial and municipal building codes, highway, municipal or local specifications for the construction of such devices. Selected sections of a general specification that are applicable are summarized below, For detailed installation instructions refer to the submitted drawing and installation details.

Structural - Proposed installation details shall conform with all federal, provincial, state, municipal or other local specifications as may be applicable, including all building code requirements.

Water Quality Device Construction Sequence - The water quality FRP device is installed in the following sequence:

- Water quality device as delivered to site placed on prepared bedding or slab using spreader bars and the lifting lugs provided on the structure. Avoid lifting chains or cables from contacting sides of tank. Do not drop, roll or slide vessel.
- Backfill using approved back fill material
- Pour anti-buoyancy slab as required per the drawing
- Connect inlet and outlet pipes
- Riser sections and/or transitions (if required and if shipped separately)
- Frame and access cover

4.2.2 Frame and Cover Installation

No direct structural connection shall be permitted to any FRP maintenance access surface riser pipe. No vertical structural connection shall be permitted to any FRP component under any circumstances unless approved by the manufacturer.

A minimum 1-inch (25 mm) gap shall be left around and above any required FRP maintenance access surface risers (i.e. not a buried installation), with this gap filled with pea gravel or approved fill material against the surrounding structure that must support the frame and cover in its entirety.

4.3 Maintenance Access Wall

In some instances the Maintenance Access Wall will require an extension attachment and sealing to the precast wall and cartridge deck at the job site, rather than at the precast facility. In this instance, installation of these components shall be performed according to instructions provided by the manufacturer.

4.4 Filter Cartridge Installation

Filter cartridges shall be installed in the cartridge deck after the construction site is fully stabilized, unless otherwise specified by the design engineer.

4.5 Filter Cartridge Installation

Manufacturer shall coordinate delivery of filter cartridges and other internal components with contractor. Filter cartridges shall be delivered and installed after site is stabilized and unit is ready to accept cartridges. Contractor shall take appropriate action to protect the filter cartridge receptacles and filter cartridges from damage during construction. For systems with cartridges installed prior to full site stabilization and prior to system commissioning, the contractor can plug inlet and outlet pipes to prevent stormwater from entering the device. Plugs must be removed after the device has been commissioned.

Part 5 – Quality Assurance

5.1 Clean Up and Restoration

Each component of the water quality treatment device shall be inspected by the Owners Representative prior to final acceptance. The contractor shall remove soil and debris created by the storm drainage work from the structure. At the completion of all work, the structure and surrounding area shall be left in a neat, safe and orderly condition.

5.2 Inspection and Maintenance

5.2.1

The manufacturer shall provide an Owner's Manual upon request.

5.2.2

After construction and installation, and during operation, the device shall be inspected and cleaned as necessary based on the manufacturer's recommended inspection and maintenance guidelines.

5.2 Replacement Filter Cartridges

When replacement membrane filter elements and/or other parts are required, only membrane filter elements and parts approved by the manufacturer for use with the stormwater quality filter device shall be installed.

Appendix D

Jellyfish® Filter Order Form

Jellyfish Filter Order Form

Jellyfish®

Project Information

Project Name: ____________________
Jobsite Address: ____________________
____
____
City/Town: ____________________
State/Province: ____________________

Contractor Information: ____________________
Contact Name: ____________________
Company: ____________________
Phone Number: ____________________
Fax Number: ____________________
E-Mail: ____________________

Consultant Information

Contact Name: ____________________
Company: ____________________
Phone Number: ____________________
Fax Number: ____________________
E-Mail: ____________________

Owner Information

Contact Name: ____________________
Company: ____________________
Phone Number: ____________________
Fax Number: ____________________
E-Mail: ____________________

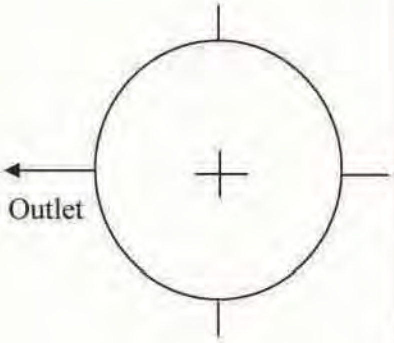
Design Information

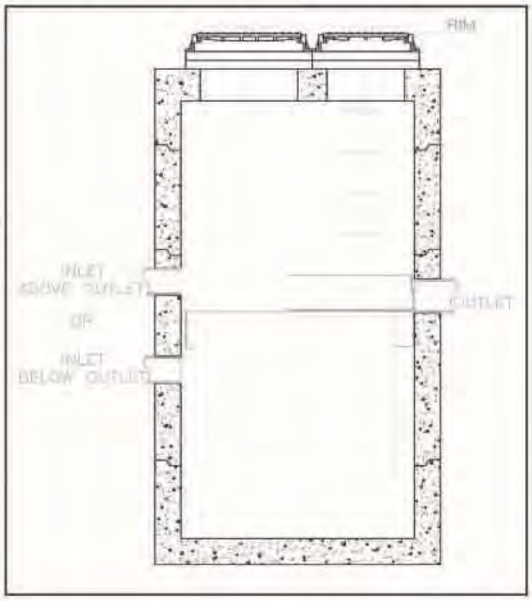
Outlet Pipe Size: ____________________
Outlet Pipe Material: ____________________
Upstream Weir Elev: ____________________
Drainage Area: ____________________
% Impervious: ____________________

Inlet Pipe Size: ____________________
Inlet Pipe Material: ____________________
Internal Bypass Required (Y/N): ____________________
Treatment Flow Rate: ____________________
Peak Bypass Flow Rate: ____________________
Detention on site (Y/N): ____________________
Filter Installed Downstream of Detention (Y/N): ______

Jellyfish Model Required: ____________________

Please sketch inlet pipe location below and mark angle





Notes: ____________________
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____
____

imbrium®

For Office Use Only
Imbrium Project Number ____________________
Quote Number ____________________

Notes

Jellyfish® Filter

General Design Notes

✓ **Driving Head**

- ✓ Typical driving head designed into the system is 18 inches (457 mm)

- ✓ Off-line configuration has an external bypass that uses an upstream diversion structure to provide the 18 inches (457 mm) of driving head

✓ **Inlet & Outlet Pipes**

- ✓ A wide range of angles can be accommodated
  - The inlet pipe can be located anywhere about the structure circumference
  - The separation angle relationship between the inlet pipe and outlet pipe can vary from 0 to 360 degrees providing maximum design flexibility.

- ✓ Multiple inlet pipes can be accommodated

- ✓ For the standard above-deck configuration, the inlet pipe's invert elevation is typically set 6 inches (150 mm) higher than the invert elevation of the outlet pipe.
  - Alternative invert elevations between the inlet and outlet pipe can easily be accommodated with most all configurations

✓ **Minimum Cover**

- ✓ Low cover installations generally need a minimum depth of cover of 36 inches (915 mm) from the outlet pipe invert to the underside of the top slab.

✓ **Cartridge Details:**

- ✓ Cartridge length is typically either 27 inches (686 mm) or 54 inches (1372 mm)
  - Design flow rates for the 54-inch (1372 mm) length:
    - hi-flo cartridge: 80 gpm (5.0 L/s)
    - draindown cartridge: 40 gpm (2.5 L/s)

  - Design membrane filtration flux rate (flow rate per unit surface area) for the 54-inch (1372 mm) length:
    - hi-flo cartridge: 0.21 gpm/ft2 (0.14 Lps/m2)
    - draindown cartridge: 0.11 gpm/ft2 (0.07 Lps/m2)

  - Weight for the 54-inch (1372 mm) length:
    - Dry weight of a new cartridge is < 20 pounds (9 kg)
    - Wet weight of a used cartridge is < 50 pounds (23 kg)

imbrium®
Engineered Stormwater Treatment

USA
Imbrium Systems
7564 Standish Place, Suite 112
Rockville, MD 20855

Phone: 301.279.8827
Toll Free: 888.279.8826

Canada/International
Imbrium Systems Inc.
2 St. Clair Avenue W., Suite 2100
Toronto, ON M4V 1L5

Phone: 416.960.9900
Toll Free: 800.565.4801

www.imbriumsystems.com

Jellyfish™ Filter System
Inspection and Maintenance Information

Jellyfish™ Inspection and Maintenance

Regular inspection and maintenance are proven, cost-effective ways to maximize water resource protection for all stormwater pollution control practices, and are required to insure proper functioning of the Jellyfish filter system. Inspection of the Jellyfish filter system is easily performed from the surface, while proper maintenance requires a combination of procedures conducted from the surface and with worker entry into the structure. The Jellyfish filter system's patent pending technology has no moving parts, keeping the process simple.

Please refer to the following information and guidelines before conducting inspection and maintenance activities.

When is inspection needed?

- Post-construction inspection is required prior to putting the Jellyfish filter system into service.
- Routine inspections are recommended during the first year of operation to accurately assess the sediment and floatable pollutant accumulation, and to ensure that the automatic backwash feature is functioning properly.
- Inspection frequency in subsequent years is based on the maintenance plan developed in the first year.
- Inspections should also be performed immediately after an oil, fuel or other chemical spill.

When is maintenance service needed?

- For optimum performance, the unit should be cleaned out once the sediment depth reaches 12 inches of accumulation. Generally, the minimum cleaning frequency is once annually, although the frequency can be based on historical inspection results.
- Filter cartridges should be cleaned and re-commissioned, or replaced, every 12 months or when the automatic backwash feature no longer functions, whichever occurs first. The automatic backwash function will be disabled if the filter cartridges become saturated with sediment. This saturated condition is indicated if the backwash pool contains more than 3 inches depth of water after 12 or more hours of dry weather have elapsed since the most recent rainfall/runoff event.
- The unit should be cleaned out immediately after an oil, fuel or chemical spill.

What conditions can compromise the Jellyfish filter system's performance?

- If sediment accumulates beyond 12 inches in depth, filter cartridge life and sediment removal efficiency may be reduced.
- If filter cartridges become saturated with sediment, the system may not provide filtration treatment at the designed water quality flow rate, and unfiltered water may bypass the filter cartridges.
- If an oil spill(s) exceeds the oil capacity of the system, subsequent spills may not be captured and may cause fouling of the filter cartridges.

- If debris clogs the inlet of the system, removal efficiency of sediment, hydrocarbons, and gross pollutants may be reduced.
- If a downstream blockage occurs, a backwater condition may occur in the system and removal efficiency of sediment, hydrocarbons, and gross pollutants may be reduced.

What training is required?

The Jellyfish filter system is inspected and maintained by professional vacuum cleaning service providers with experience in the maintenance of underground tanks, sewers and catch basins. Since some of the maintenance procedures require manned entry into the Jellyfish structure, only professional maintenance service providers trained in confined space entry procedures should enter the vessel. Service provider companies typically have personnel who are trained and certified in confined space entry procedures according to local, state, and federal standards.

For typical inspection and maintenance activities, no specific supplemental training is required for the Jellyfish filter system. Information provided in this document or the Jellyfish Filter System Operation and Maintenance Manual (provided to the system owner) contains sufficient guidance to maintain the system properly.

What equipment is typically required for inspection?

- Manhole access cover lifting tool
- Oil dipstick or sampling tool
- Sediment probe
- Flashlight
- Camera
- Data log
- Safety cones and caution tape
- Hard hat, safety shoes, safety glasses, and chemical-resistant gloves

How is the Jellyfish filter system inspected?

- The Jellyfish filter system can be inspected from the surface through the standard surface manhole access cover or custom doors.
- Sediment and oil depth inspections are performed with a sediment probe and oil dipstick. Sediment and oil depth are measured through the 30-inch diameter maintenance access pipe.
- Visual inspection for floatable pollutant accumulation such as litter and hydrocarbons is also performed by shining a flashlight into the 30-inch diameter maintenance access pipe.
- Visual inspection of the backwash pool (6-inch high kidney-shaped or oval-shaped weir) should also be performed to check for standing water in the pool. If at least 12 hours of dry weather have elapsed since the most recent rainfall/runoff event and the backwash pool contains more than 3 inches of water, this condition indicates that the filter cartridges are saturated with sediment and should be cleaned or replaced.
- Inspections also involve a visual inspection of the internal components of the system for obvious damage.

What equipment is typically required for maintenance?

- Vacuum truck equipped with water hose and jet nozzle
- Small pump and tubing for oil removal, if necessary
- Manhole access cover lifting tool
- Oil dipstick or sampling tool
- Sediment probe
- Flashlight
- Camera
- Data log
- Safety cones and caution tape
- Hard hats, safety shoes, safety glasses, chemical-resistant gloves, and hearing protection for service providers
- Gas analyzer, respiratory gear, and safety harness for specially trained personnel if confined space entry is required
- Replacement cartridges are required if manual cleaning and re-commissioning of existing cartridges is not possible or adequate to restore proper system function.
- Jellyfish Cartridge Backflush Pipe

How is the Jellyfish filter system maintained?

- The Jellyfish filter system can be maintained through the standard surface manhole access cover. All access covers should be removed to provide additional light and ventilation. If custom doors were installed instead of frames and covers, open all doors.
- If the filter cartridges are to be manually backflushed (see procedure below), perform the manual backflush service prior to vacuum removal of sediment, floatable, and water (i.e. perform the manual backflush with the lower chamber full of water).
- Insert the oil dipstick or sampling tool into the 30-inch diameter maintenance access pipe. If oil is present, pump off the oil layer into separate containment using a small pump and tubing. Some maintenance service providers may elect to use the vacuum hose if the oil amount is small.
- Maintenance cleaning of accumulated floatable litter and sediment is performed with a vacuum hose inserted through the 30-inch diameter maintenance access pipe.
- Using the vacuum hose, decant the water from the lower chamber to the sanitary sewer, if permitted by the local regulating authority, or into a separate containment tank.
- Remove the sludge from the bottom of the unit using the vacuum hose.
- For larger Jellyfish systems, (8-ft, 10-ft, 12-ft diameter), complete sediment removal may be facilitated by inserting a water hose with jet nozzle through a hole in the cartridge deck where a filter cartridge has been removed. Use the water jet to break up sediment on the bottom of vessel that is farthest from the 30-inch diameter maintenance access pipe. Rinse this sediment toward the maintenance access pipe for easy vacuum removal.
- To access the cartridge deck for manual cleaning or replacement of filter

cartridges, descend the ladder that is built into structure's sidewall, observing all precautions for safe and proper confined space entry. Note that the cartridge deck may be slippery. Care should be taken to avoid stepping directly onto the cartridge heads or onto the backwash pool weir.

- A manual backflush of the cartridges is recommended to remove a high percentage of accumulated sediment from the filtration tentacles, restore flow capacity, and extend the service life of the cartridges. A Jellyfish Cartridge Backflush Pipe (12-inch diameter x 40-inch length aluminum pipe with flapper valve) may be purchased from Imbrium Systems that allows each cartridge to be selectively backwashed using water that is supplied from either (a) the previously decanted water stored in a vactor truck compartment; (b) clean water from a separate water truck delivered to the site; or (c) water from a nearby fire hydrant or other clean water source. NOTE: Manual backflushing of the cartridges is best performed with the lower chamber full of water (i.e. prior to vacuuming out the sediment, floatables, and water). This ensures that a uniform backflush pressure is applied across all of the filter media surface area.
- <u>Manual backflush procedure</u>: Twist the threaded cartridge lid on the cartridge receptacle counter-clockwise to remove the lid and expose the tentacle holes. Place the Jellyfish Cartridge Backflush Pipe over the cartridge receptacle such that the gasket on the bottom of the Backflush Pipe is seated on the rim of the cartridge receptacle. Fill the Backflush Pipe with water (approximately 16 gallons). Pull the cord to open the flapper valve and backflush the water through the cartridge. Refill the Pipe and backflush a second time. The full Pipe contents should drain within approximately 20 seconds to remove a high percentage of accumulated sediment and restore the flow capacity of the cartridge. Remove the Pipe and re-install the lid hand-tight. For the most thorough backflushing, backflush the Draindown Cartridge(s) first, followed by the Standard Cartridges, then finish with a final single backflush on the Draindown Cartridge(s). (NOTE: The Standard Cartridges are those cartridges within the kidney-shaped 6-inch high backwash pool weir. The Draindown Cartridges are those cartridges outside the backwash pool weir. See the diagram below for reference.) When backflushing a cartridge, it is important to keep the lids in place on all other cartridges so that water displaced from the lower chamber during backflushing is properly filtered when discharged to the top of the cartridge deck.
- <u>Inspection of cartridge after manual backflushing</u>: After manually backwashing the first cartridge, a visual inspection of the filtration tentacles is recommended. With the threaded lid removed, lift the cartridge (using the lifting loops in the cartridge head) so that most or all of the filtration tentacle bundle is exposed. If upon visual inspection the degree or nature of any remaining sediment accumulation on the tentacles shows that the manual backwash was not effective, provisions must be made to replace all the spent cartridges with new cartridges as soon as possible. To re-commission a cleaned and regenerated cartridge, or to install a new cartridge, place the cartridge into the cartridge hole and re-install the threaded lid hand-tight to secure the cartridge.
- New cartridges are lightweight (less than 20 pounds), and can be easily lowered down to a worker on the cartridge deck. Care should be taken not to bend or otherwise damage the tentacles during the handling and installation procedures.
- For maximum safety, it is recommended that each spent cartridge be removed and

replaced one at a time, such that there is never more than one cartridge hole exposed. Removable cartridge hole cover plates can be purchased from Imbrium Systems if required.

- Remove spent cartridges from the vessel.
- After vacuuming out sediment, floatables, and water, re-fill the lower chamber with water where required by the local jurisdiction.

.

What is required for proper disposal?

- Disposal requirements for recovered pollutants and spent filter cartridges may vary depending on local guidelines. In most areas the sediment and spent filter cartridges, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.

What about oil spills?

- Petroleum-based pollutants captured by the Jellyfish filter system (oil/chemical/fuel spills) should be removed and disposed of by a licensed waste management company.
- Although the Jellyfish filter system captures virtually all free oil, a sheen at the outlet **does not** mean the unit isn't working. A rainbow or sheen can be visible at oil concentrations of less than 10 mg/L (ppm).

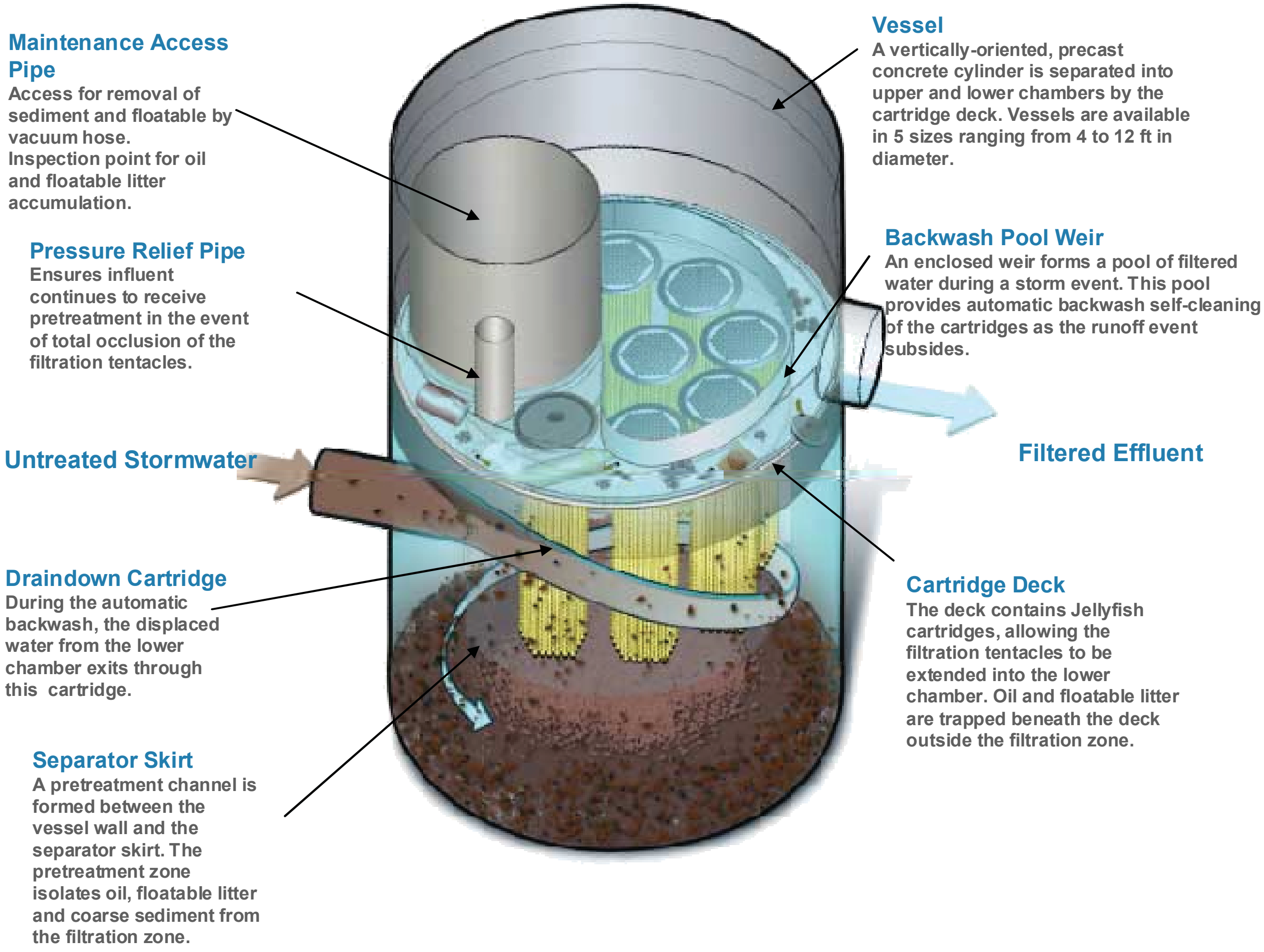
What factors affect the costs involved with inspection/maintenance?

- Inspection and maintenance costs are based on unit size, cartridge count, sediment/oil/hazardous material loads, transportation distances, tipping fees, disposal requirements and other local regulations. Maintenance costs are anticipated to be substantially lower in instances where dirty cartridges are manually cleaned and re-commissioned rather than replaced with new cartridges.

System schematic and component functions

Below is a schematic of the Jellyfish filter system with key components identified and their functions briefly described (6-ft diameter system is depicted).

Jellyfish™ Filter System



Maintenance Access Pipe
Access for removal of sediment and floatable by vacuum hose.
Inspection point for oil and floatable litter accumulation.

Pressure Relief Pipe
Ensures influent continues to receive pretreatment in the event of total occlusion of the filtration tentacles.

Untreated Stormwater

Draindown Cartridge
During the automatic backwash, the displaced water from the lower chamber exits through this cartridge.

Separator Skirt
A pretreatment channel is formed between the vessel wall and the separator skirt. The pretreatment zone isolates oil, floatable litter and coarse sediment from the filtration zone.

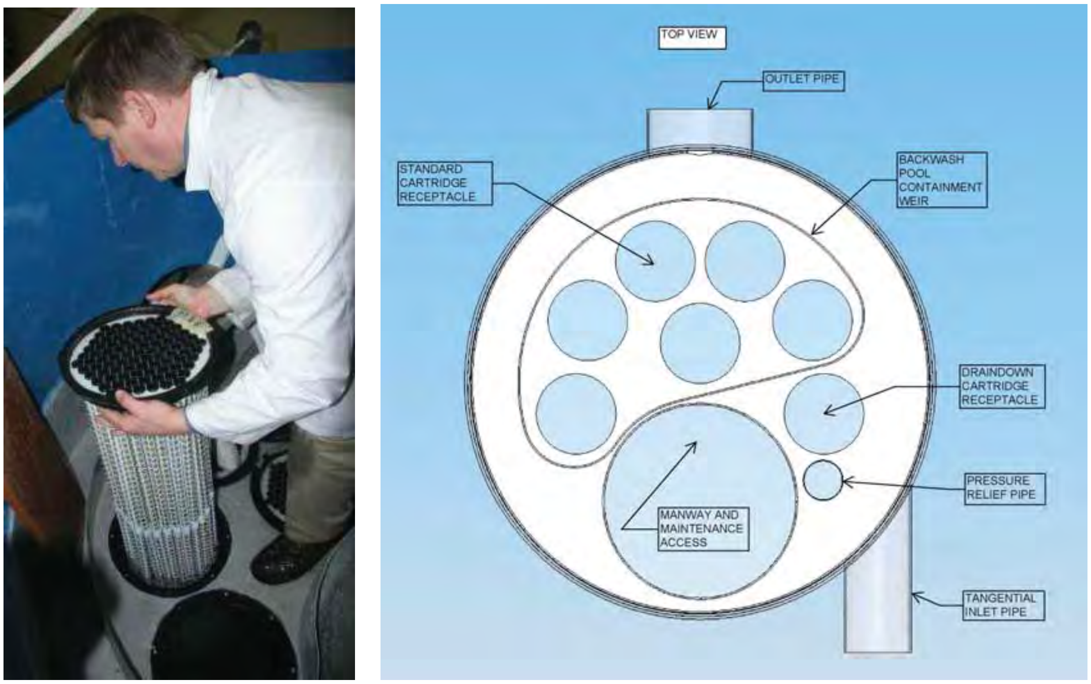
Vessel
A vertically-oriented, precast concrete cylinder is separated into upper and lower chambers by the cartridge deck. Vessels are available in 5 sizes ranging from 4 to 12 ft in diameter.

Backwash Pool Weir
An enclosed weir forms a pool of filtered water during a storm event. This pool provides automatic backwash self-cleaning of the cartridges as the runoff event subsides.

Filtered Effluent

Cartridge Deck
The deck contains Jellyfish cartridges, allowing the filtration tentacles to be extended into the lower chamber. Oil and floatable litter are trapped beneath the deck outside the filtration zone.

The Jellyfish filter system has no moving parts to wear out and therefore maintenance activities are generally focused on pollutant removal and filter cartridge service.



Lightweight Jellyfish filter cartridges are easily inserted into and removed from the cartridge deck by hand. The top view schematic (above right) and top view photo (below right) depict the 6-ft diameter system. Note the 6 standard cartridges enclosed by the kidney-shaped backwash pool weir. A single draindown cartridge is located outside the weir.

The depth of sediment and oil can be measured from the surface by using a sediment probe or dipstick tube equipped with a ball check valve and inserted through the 30-inch maintenance access pipe. This large port provides convenient access for inspection and vacuum removal of water and pollutants.

A maintenance worker stationed on the surface uses a vacuum hose to evacuate water, sediment, and debris from the system.

The benefits of regular inspection and maintenance are many – from ensuring maximum operation efficiency, to keeping maintenance costs low, to the continued protection of natural waterways – and provide the key to the Jellyfish filter system's long and effective service life.

Ordering Replacement Parts

Jellyfish filter cartridges, cartridge hole cover plates, Jellyfish Cartridge Backflush Pipes (for manual backflushing), and other system components can be ordered by contacting:

Imbrium Systems Corporation
1-888-279-8826
www.imbriumsystems.com

(revised 5-24-10)

APPENDIX E - Storm Water Management and Discharge Control Maintenance Agreement

for

One Paseo

SWMDCMA will be prepared during final engineering

(Intentionally Left Blank)

APPENDIX F - Estimated Maintenance Cost

for

Treatment Control Best Management Practices (BMPs)

Imbrium Systems Jellyfish Inspection and Maintenance Costs

Jellyfish System	Inspection (Annually)	Backflush (Year 3)	Full Maintenance (Year 3)	Filter Cartridge Replacement (Year 7)	**Annualized Maintenance Cost**
JF4	No Charge	$240	$740	$1650	**$562**
JF6	No Charge	$560	$1590	$3850	**$1267**
JF8	No Charge	$750	$2771	$6600	**$2116**
JF10	No Charge	$1170	$4284	$12,650	**$3625**
JF12	No Charge	$1356	$6153	$17,600	**$5017**

- Costs are estimates only and are based pricing submitted by a California stormwater maintenance contractor. Cost may vary depending on site specific conditions.

Definitions

Inspection:	Gauge accumulated sediment in sump to determine if Full Maintenance is required.
Backflush:	Manual backflush of filter cartridges using stand pipe to dislodge accumulated sediment on filter surface.
Full Maintenance:	Vacuuming out floatables and accumulated sediment in Jellyfish sump.

APPENDIX G - BMP Sizing Calculator Results

for

One Paseo

Project Summary

Project Name	One Paseo
Project Applicant	Kilroy
Jurisdiction	City of San Diego
Parcel (APN)	3040705200
Hydrologic Unit	Los Penasquitos

Compliance Basin Summary

Basin Name:	Entire Site
Receiving Water:	SD Public Storm Drain System
Rainfall Basin	Oceanside
Mean Annual Precipitation (inches)	13.3
Project Basin Area (acres):	23.69
Watershed Area (acres):	0.00
SCCWRP Lateral Channel Susceptiblity (H, M, L):	
SCCWRP Vertifical Channel Susceptiblity (H, M, L):	
Overall Channel Susceptibility (H, M, L):	HIGH
Lower Flow Threshold (% of 2-Year Flow):	0.1

Drainage Management Area Summary

ID	Type	BMP ID	Description	Area (ac)	Pre-Project Cover	Post Surface Type	Drainage Soil	Slope
16990	Drains to LID	BMP 1	West Basin Impervious	7.54	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Flat - slope (less ...
16991	Drains to LID	BMP 1	West Basin Pervious	1.54	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Flat - slope (less ...
17031	Drains to LID	BMP 2	East Basin Impervious	3.17	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Flat - slope (less ...
17032	Drains to LID	BMP 2	East Basin Pervious	0.23	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Flat - slope (less ...
18139	Drains to LID	BMP 3	North Basin Impervious	9.9	Pervious (Pre)	Concrete or asphalt	Type D (high runoff - clay soi...	Flat - slope (less ...
18140	Drains to LID	BMP 3	North Basin Pervious	0.47	Pervious (Pre)	Landscaping	Type D (high runoff - clay soi...	Flat - slope (less ...

LID Facility Summary

BMP ID	Type	Description	Plan Area (sqft)	Volume 1(cft)	Volume 2(cft)	Orifice Flow (cfs)	Orifice Size (inch)
BMP 1	Bioretention + Vault	West Basin Vault	13406	73735	0.00	0.158	2.00
BMP 2	Bioretention + Vault	East Basin Vault	5563	30600	0.00	0.059	1.00
BMP 3	Bioretention + Vault	North Basin Vault	17332	95327	0.00	0.181	2.00

APPENDIX H - StormTrap® DoubleTrap® Information

for

One Paseo

STORMTRAP® PATENTED
Precast Concrete Modular Stormwater Management System

1-87-STORMTRAP

Search

DOUBLETRAP®

View Projects >>

StormTrap Images

360° Rotational View

StormTrap offers the stormwater management solutions you need to control the volume and discharge timing of water runoff. Our engineers can customize the DoubleTrap solution to meet your exact needs, and our modular design allows us to maximize your storage volume while minimizing your footprint and overall costs.

Excess stormwater runoff can cause a myriad of problems, from flooding and erosion to stormwater quality degradation. StormTrap can integrate stormwater treatment functions to ensure that the discharged water will not be filled with contaminants and pollutants. The DoubleTrap system includes:

Features

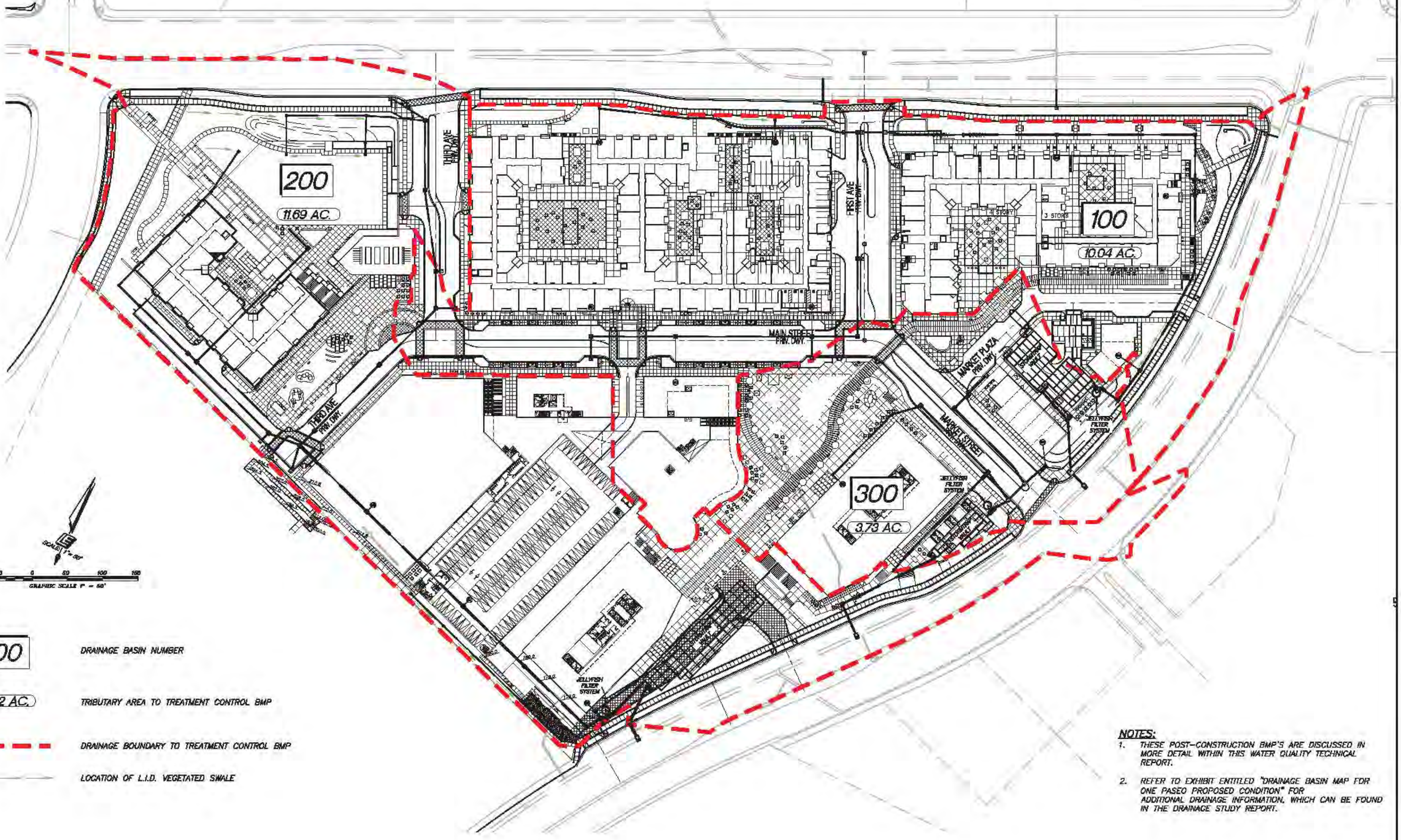
- Durable, reinforced, high-strength concrete with internal height dimensions that range from 2′-2″ to 11′-4″.
- An innovative design that facilitates quick and efficient installations and the smallest overall footprint.
- The lowest overall installed costs.
- A flexible design that can allow stormwater infiltration or remain a completely contained system.
- Lifetime Warranty

At StormTrap, we are committed to helping you get the stormwater detention or retention systems you need to manage the flow of runoff. Find out how our modular designs can provide the fast and reliable system you need today. Request a free preliminary design and budget estimate today.

Map Pocket 1 - Water Quality Technical Report Exhibit

for

One Paseo



100	DRAINAGE BASIN NUMBER
(10.82 AC.)	TRIBUTARY AREA TO TREATMENT CONTROL BMP
🟥	DRAINAGE BOUNDARY TO TREATMENT CONTROL BMP
—	LOCATION OF L.I.D. VEGETATED SWALE

NOTES:

1. THESE POST-CONSTRUCTION BMP'S ARE DISCUSSED IN MORE DETAIL WITHIN THIS WATER QUALITY TECHNICAL REPORT.
2. REFER TO EXHIBIT ENTITLED "DRAINAGE BASIN MAP FOR ONE PASEO PROPOSED CONDITION" FOR ADDITIONAL DRAINAGE INFORMATION, WHICH CAN BE FOUND IN THE DRAINAGE STUDY REPORT.

Leppert Engineering
CORPORATION

JOHN D. LEPPERT

PREPARATION AND REVISION LOG

WATER QUALITY TECHNICAL REPORT BASIN MAP FOR:
ONE PASEO – PROPOSED CONDITION

Appendix J

WATER SUPPLY ASSESSMENT AND WATER SUPPLY VERIFICATION

City of San Diego
PUBLIC UTILITIES
Water & Wastewater

WATER SUPPLY ASSESSMENT AND VERIFICATION REPORT

San Diego Corporate Center
(Project # 193036)

Prepared by:

City of San Diego Public Utilities Department

Approved by:

AH 9/6/11
MAS 9/6/11

09:06:11

Roger Bailey, Director of Public Utilities **Date**

Prepared: August 2011

City of San Diego Public Utilities Department
Water Supply Assessment Report

San Diego Corporate Center

Table of Contents

Section 1 - Purpose

On January 1, 2002, Senate Bill 610 (SB 610) and Senate Bill 221 (SB 221) took effect. The intent of SB 610 and SB 221 was to improve the link between information on water supply availability and certain land-use decisions made by cities and counties. Under SB 610 (codified in the Water Code beginning at Section 10910), a water supply assessment (WSA) must be furnished to cities and counties for inclusion in any environmental documentation of projects (defined in the Water Code) that propose to construct 500 or more residential units, or that will use an amount of water equivalent to what would be used by 500 residential units, and are subject to the California Environmental Quality Act (CEQA). Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply or water supply verification (WSV).

Not every project that is subject to the requirements of SB 610 is also subject to the mandatory water verification of SB 221 (e.g., if there is no subdivision map approval). Conversely, not every project that is subject to the requirements of SB 221 must also obtain a SB 610 water supply assessment.

A foundational document for compliance for both SB 610 and SB 221 is the Urban Water Management Plan (UWMP) of the relevant water agency. Both of these statutes repeatedly identify the UWMP as a planning document that can be used by a water supplier to meet the standards set forth in both statutes. Thorough and complete UWMPs will allow water suppliers to use UWMPs as a foundation to fulfill the specific requirements of these two statutes. Cities, counties, water districts, property owners and developers will all be able to utilize this document when planning for and proposing new projects. It is crucial that cities, counties and water suppliers work closely when developing and updating these planning documents. The City of San Diego's 2010 UWMP, which is used as the basis for this Report (WSA & WSV), was adopted by the San Diego City Council in June 2011.

The City's Development Services Department (DSD) requested that the City of San Diego Public Utilities Department (Public Utilities Department) prepare this Report as part of the environmental review for the San Diego Corporate Center (Project). A more detailed description of the Project is provided in Section 2 of this Report. This Report evaluates water supplies that are or will be available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet the projected demands of the Project, in addition to existing and planned future water demands of the Public Utilities Department. This Report provides an assessment of the availability of sufficient water supplies for the Project only and does not constitute approval of the Project.

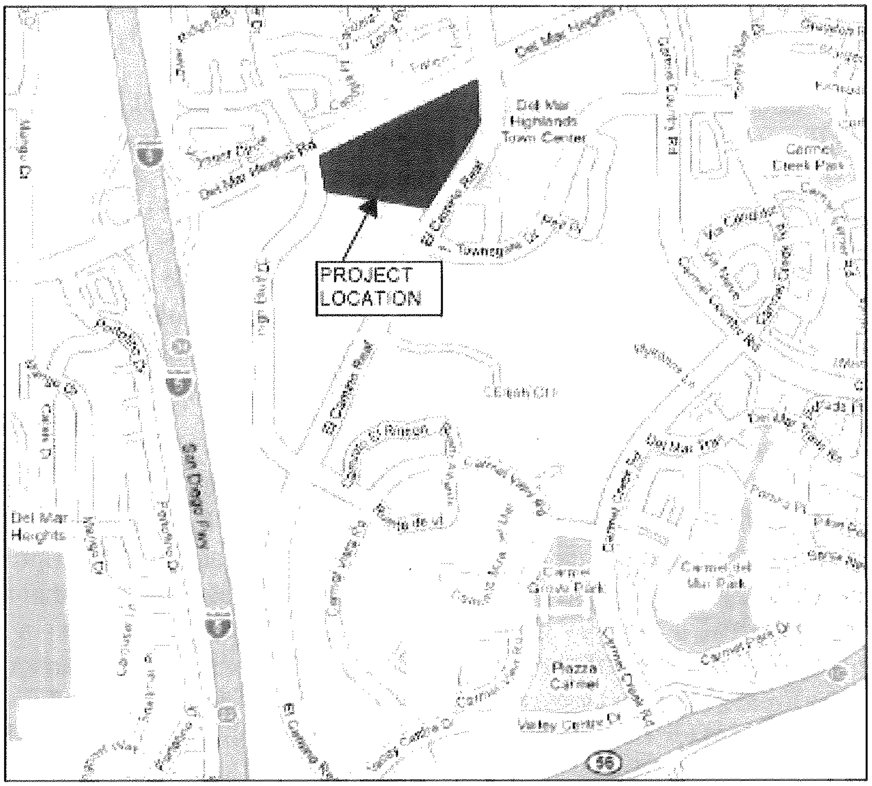
This Report includes, among other information, identification of existing water supply entitlements, water rights, water service contracts, or agreements relevant to the identified water supply for the Project and quantities of water received in prior years pursuant to those entitlements, rights, contracts and agreements.

This Report has been prepared in compliance with the requirements under SB 610 by the Public Utilities Department in consultation with DSD, the San Diego County Water Authority (Water Authority) and the Metropolitan Water District of Southern California (MWD).

Section 2 - Project Description

The project site is located at 12910 Del Mar Heights Place in the City of San Diego within the Carmel Valley Community Plan Area. The 23.6 acre project site is located at the southwestern corner of the Del Mar Heights Road and El Camino Real intersection. High Bluff Drive is located directly west of the project site and interstate 5 (I-5) is a quarter mile to the west of the project site. The site is located in the North City West Community Plan, the North City West Development Unit Number Two Precise Plan, and Council District 1. The site was previously graded as a part of the North City West Development Unit 2 (i.e., Carmel Valley Employment Center) mass grading under Tentative Parcel Map (TPM) 86-0276, and was planned to be developed with employment center uses.

FIGURE 2-1
VICINITY MAP OF SAN DIEGO CORPORATE CENTER



The project would entail the phased construction of up to 836,000 square feet (sq ft) of mixed-use development on the 23.6 acre graded and vacant site. The mixed-use development would include approximately 300,000 sq ft of commercial/retail, 536,000 sq ft of office, a 150 room hotel and 608 multi-family residential units. The project also would include public spaces, internal roadways, parking facilities, landscaping, hardscape treatments, and utility improvements to support these uses.

The required discretionary approvals include a Community Plan & Precise Plan Amendment, Rezone from CVPD-EC to MC, a Planned Development Permit, a Site Development Permit, an Easement Abandonment, a Vesting Tentative Map, and Right of Way Vacation to vacate a portion of Del Mar Heights Place.

Section 3 - Findings

Water Assessment

This Report identifies that the water demand projections for the Project, as proposed, are included in the regional water resource planning documents of the Water Authority, and MWD. Current and future water supplies, as well as actions necessary to develop the future water supplies, have been identified. This Report demonstrates that there will be sufficient water supplies available during normal, single-dry year, and multiple-dry water years during a 20-year projection to meet the projected demands of the Project, in addition to existing and planned future water demands of the Public Utilities Department.

Based on a normal water supply year, the estimated water supply projected in five-year increments for a 20-year projection will meet the City's projected water demand of 240,472 acre-feet[1] (AF) in 2015 to 298,860 AF in 2035 (**Table 6-5**). Based on a single-dry year forecast (**Table 6-7**), the estimated water supply will meet the projected water demand of 318,586 AF (2035). Based on a multiple-dry year, third year supply (**Table 6-8**), the estimated water supply will meet the projected demands of 281,466 AF (2015); 303,004 AF (2020); 322,166 AF (2025); 334,720 AF (2030); and 346,823 AF (2035).

The Water Authority's 2010 UWMP provides for a comprehensive planning analysis at a regional level and includes water use associated with accelerated forecasted residential development as part of its municipal and industrial sector demand projections. These housing units were identified by the San Diego Association of Government (SANDAG) in the course of its regional housing needs assessment, but are not yet included in existing general land use plans of local jurisdictions. The demand associated with accelerated forecasted growth is intended to account for SANDAG's land-use development currently projected to occur between 2035 and 2050, but has the likely potential to occur on an accelerated schedule. SANDAG estimates that this accelerated residential development could occur within the planning horizon of the 2010 UWMP update. These units are not yet included in local jurisdictions' general plans, so their projected demands are incorporated at a regional level. When necessary, this additional demand increment, termed Accelerated Forecasted Growth, can be used by member agencies to meet the demands of development projects not identified in the general land use plans.

The SANDAG Series 12 2050 Regional Growth Forecast (SANDAG Series 12 Forecast) did not include the level of development of the proposed Project for the 20-year planning horizon required by SB 610 and SB 221. The difference between the planned and proposed water demands of the Project can be accounted for in the Water Authority's 2010 UWMP accelerated forecasted growth demand increment. As documented in the Water Authority's 2010 UWMP, the Water Authority is planning to meet future and existing demands which include the demand increment associated with the accelerated forecasted growth. The Water Authority will also assist its member agencies in tracking the certified EIRs provided by the agencies that include water supply assessments that

---

[1] An acre-foot of water equals 325,851 gallons, which is enough water for two average families of four for one year.

utilize the accelerated forecasted growth demand increment, to demonstrate adequate supplies for the development. In addition, the next update of the demand forecast for the Water Authority's 2015 UWMP will be based on SANDAG's most recently updated forecast, which will include the Project.

As demonstrated in **Table 3-1** of this Report, which has been prepared by the Public Utilities Department in compliance with the requirements of SB 610 and using the City's and Water Authority's 2010 UWMP, which are based on SANDAG Series 12 Forecast, there is sufficient water planned to supply the Project's estimated annual average usage. The proposed water demands of the Project are 208,138 gallons per day or 233 acre feet per year (AFY). Per the City of San Diego 2010 UWMP, the planned water demands of the project's site are 76,800 gallons per day or 86 AFY. The remaining portion of the estimated 131,388 gallons per day or 147 AFY is accounted for through the Accelerated Forecasted Growth demand increment of the Water Authority's 2010 UWMP. Therefore, based on the findings from the City's 2010 UWMP and the Water Authority's 2010 UWMP, this project will result in no unanticipated demands.

TABLE 3-1
WATER DEMAND ANALYSIS

Planned Water Demands for the Project Site per the 2010 UWMP		
Category	**Quantity**	**Estimated Potable Water Use in Gallons per Day**
Employees[1]	*1280*	*76,800*
Total		***76,800 (or 86 AFY)***
Proposed Water Demands for San Diego Corporate Center		
Multi-Family Units[2]	*608*	*120,129*
Commercial-Office[3]	*536,000 sq ft*	*46,337*
Commercial-Retail	*270,000 sq ft*	*23,342*
Hotel[4]	*150 Rooms*	*14,250*
Landscaping[5]	*2.30 Acres*	*4,080*
Total[6]		***208,138 (or 233 AFY)***
Summary		
Proposed		***233 AFY***
City of San Diego 2010 UWMP - Planned		***86 AFY***
Planned from Water Authority's Accelerated Forecasted Growth		***147 AFY***
Net Unanticipated Demands		***0***

Table 3-1 Notes:

1. The utilization of 60 gallons per person per day is the City's acceptable standard for employment water use.
2. 80 gallons per person per day is the City's acceptable standard for multi-family water consumption. The person per household (residential) is estimated at 2.78 and the vacancy rate is 3.9 %.
3. Commercial (Retail and Office) water use is estimated at 91 gallons per day per 1000 sq ft.
4. Hotel water use is estimated at 100 gallons per room per day.
5. Landscaping water demands are calculated using City of San Diego online landscaping calculator.
6. The applicant is proposing advanced conservation measures which include waterless urinals, dual-flush toilets, high efficiency cooling towers, high-efficiency washing machines and dishwashers, dual-flush toilets, individually metered multi-family units, and smart meter with leak detection. Based on this information Public Utilities Department has accepted a water demand reduction of 5% for commercial uses and 7.5% for residential uses.

Water Verification

Verification, per SB 221, involves provision of substantial evidence that adequate water supplies will be available to meet projected demands based on the following: a) written contracts or agreements containing specifications and conditions under which future supply becomes available; b) capital outlay programs for financing delivery systems if needed; c) securing applicable agency permits for construction of infrastructure: and, d) necessary regulatory approvals to convey or deliver water to the subdivision.

Substantial evidence verifying local, regional, and state water supplies available for the proposed Project plus existing and projected demands within the Public Utilities Department service area is provided in Section 5 of this Report. The WSV findings presented in Section 5 substantiate that there will be sufficient water supply available to serve existing demands, demands of the Project, and projected future demands within the Public Utilities Department service area under normal and dry year forecasts.

Conclusion

In summary, these findings substantiate that there is sufficient water supply planned to serve this Project's future water demands within the Public Utilities Department service area in normal, single-dry year, and multiple-dry water year forecasts.

Therefore, this Report concludes that the proposed level of water use for this Project is within the regional water resource planning documents of the Water Authority and MWD. Current and future water supplies, as well as the actions necessary to develop these supplies, have been identified in the water resources planning documents of the Public Utilities Department, the Water Authority, and MWD to serve the projected demands of the Project, in addition to existing and planned future water demands of the Public Utilities Department.

Section 4 - City of San Diego Public Utilities Department

The City of San Diego (City) purchased its initial water system in 1901 from the privately owned San Diego Water & Telephone Company. Since then, continual expansion of the water system has been required to meet the demands of the growing population of the City. To meet the demand, the Public Utilities Department purchased a number of reservoirs between 1913 and 1935 to supplement local water supplies. Despite low annual precipitation for the area (approximately 10 inches per year), these reservoirs supplied the City's growing demands until 1940.

The need to import water emerged with the increased demand generated by the presence of the United States Navy before and up to World War II, and the ensuing population boom. As a result, the Public Utilities Department and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from MWD. The Public Utilities Department and other local retail water distributors began receiving imported water from the Colorado River in 1947.

Today, the Public Utilities Department treats and delivers more than 200,000 AFY of water to more than 1.3 million residents. The water system extends over 404 square miles, including 342 square miles in the City. The Public Utilities Department potable water system serves the City of San Diego and certain surrounding areas, including both retail and wholesale customers. The Project is located within the Public Utilities Department service area.

In addition to delivering potable water the City has a recycled water program. Its objectives are to optimize the use of local water supplies, lessen the reliance on imported water and free up capacity in the potable system. Recycled water provides the City a dependable, year-round, locally produced and controlled water resource.

4.1 Overview of Potable System Facilities

The water system consists primarily of nine raw water storage facilities with over 408,000 AF of storage capacity, three water treatment plants, 31 treated water storage facilities, and more than 3,213 miles of transmission and distribution lines.

The Public Utilities Department maintains and operates nine local surface raw water storage facilities, which are connected directly or indirectly to the City's water treatment operations. The Lower Otay, Barrett, and Morena Reservoirs (135,349 AF total capacity) service the Otay Water Treatment Plant in south San Diego; the El Capitan, San Vicente, Sutherland, and Lake Murray Reservoirs (236,311 AF total capacity) service the Alvarado Water Treatment Plant in central San Diego; and the Miramar Reservoir (6,682 AF total capacity) services the Miramar Water Treatment Plant in north San Diego. Lake Hodges Reservoir has a total capacity of 30,251 AF and is connected to Olivenhain Reservoir, which is owned by Water Authority and Olivenhain Municipal Water District. The connection provides the City the ability to access 20,000 AF of water in Hodges Reservoir via the Water Authority's delivery system.

The Public Utilities Department maintains and operates three water treatment plants with a combined total rated capacity of 294.4 million gallons per day (MGD). The Miramar Water

Treatment Plant (Miramar WTP), originally constructed in 1962, has a rated capacity of 140 MGD with the ability to increase to 215 MGD in the future with further approval from the State of California Department of Public Health (CDHP) based upon a future treatment process study (High Filtration Rate Study) that is yet to be performed. Current and short term (5 years) forecasted demands indicate no current need to increase the plants rated capacity from 140 MGD to 215 MGD. The required study to increase the rated capacity to 215 MGD will be performed in anticipation and as required to ensure future demands are met. The Miramar WTP generally serves the City's geographical area north of the San Diego River (north San Diego). The Alvarado Water Treatment Plant (Alvarado WTP), operational since 1951, had an initial capacity rating of 66 MGD. Several hydraulic improvements to the Alvarado WTP were constructed in the mid-1970s to increase the plant's capacity to 120 MGD. Upon completion of ongoing upgrades and improvements and approval of the operations plan by the CDHP, the rated capacity of the Alvarado WTP is anticipated to increase to 200 MGD. The Alvarado WTP generally serves the geographical area from National City to the San Diego River (central San Diego). The Otay Water Treatment Plant (Otay WTP) was originally constructed in 1940, and has a current rated capacity of 34.4 MGD, which meets current and short term forecasted demands. The Otay WTP has hydraulic capacity to increase to 40 MGD in the future. In order to do so, approval is required, similar to the process mentioned above for the Miramar WTP. The Otay WTP generally serves the geographical area bordering Mexico (south San Diego) and parts of the southeastern portion of central San Diego. Currently, the Otay WTP is in the process of being upgraded to include a third set of flocculation and sedimentation basins, filter piping and media improvements.

The Public Utilities Department maintains and operates 31 treated water storage facilities including steel tanks, standpipes, concrete tanks and rectangular concrete reservoirs, with capacities varying from less than one to 35 million gallons.

The water system consists of more than 3,213 miles of pipelines, including transmission lines up to 84 inches in diameter and distribution lines as small as four inches in diameter. Transmission lines are pipelines with larger diameters that convey raw water to the water treatment plants and convey treated water from the water treatment plants to the treated water storage facilities. Distribution lines are pipelines with smaller diameters that directly service the retail users connected to a meter. In addition, the Public Utilities Department maintains and operates 49 water pump stations that deliver treated water from the water treatment plants to approximately 274,000 metered service connections in over 127 different pressure zones. The Public Utilities Department also maintains several emergency connections to and from neighboring water agencies, including the Santa Fe Irrigation District (Miramar WTP), the City of Poway, Olivenhain Municipal Water District (Miramar WTP), the Cal-American Water Company (Alvarado and Otay WTP's), the Sweetwater Authority (Otay WTP) and the Otay Water District (Otay WTP).

4.2 Overview of Recycled System Facilities

The City of San Diego built the North City Water Reclamation Plant (NCWRP) and the South Bay Water Reclamation Plant (SBWRP) to treat wastewater to a level approved for irrigation, manufacturing, and other non-potable purposes.

The NCWRP provides recycled water to businesses, golf courses, homeowner associations, and other users in the northern service area of the City; as well as the City of Poway and the

Olivenhain Municipal Water District. The NCWRP currently treats 22.5 MGD of wastewater, although the Plant has an ultimate treatment capability of 30 MGD. In CY 2010, an average of 6.2 MGD of the wastewater flows were treated to a tertiary level and beneficially reused. During dry months, the beneficial reuse of recycled water has peaked at 11.6 MGD. The Public Utilities Department maintains and operates the North City recycled water distribution system which consists of 83 miles of recycled water pipeline, two reservoirs, and two pump stations.

In July 2006 SBWRP began production of recycled water with service to the International Boundary and Water Commission (IBWC). Recycled water production at South Bay expanded in May 2007 when the Otay Water District began taking deliveries. The SBWRP currently treats approximately 10 MGD of wastewater, although the Plant has an ultimate treatment capability of 15 MGD. In CY 2010, an average of 3.9 MGD of the wastewater flows were treated to a tertiary level and beneficially reused. During dry months, the beneficial reuse of recycled water has peaked at 7.92 MGD. Winter beneficial reuse from SBWRP is approximately 3 MGD. The Public Utilities Department maintains and operates the South Bay recycled water distribution system which consists of 3000 feet of recycled water pipeline, one storage tank, and one pump station.

Section 5 - Existing and Projected Supplies

The Public Utilities Department relies on imported water as its major water supply source, and is a member public agency of the Water Authority. The Water Authority is a member agency of MWD. The statutory relationships between the Water Authority and its member agencies, and MWD and its member agencies, respectively, establish the scope of the Public Utilities Department's entitlements to water from these two agencies. Due to the Public Utilities Department's reliance on these two agencies, this Report relies and includes information on the existing and projected supplies, supply programs, and related projects of the Water Authority and MWD.

The City of San Diego relies on the long-term water resources planning documents of the Water Authority and MWD to support the work on this Report. These documents are available at the following websites and contacts:

San Diego County Water Authority

http://www.sdcwa.org/2010-urban-water-management-plan

Dana Friehauf, Principal Water Resources Specialist (858) 522-6749

Metropolitan Water District of Southern California

http://www.mwdh2o.com/mwdh2o/pages/yourwater/ywater01.html#RUWMP

MWD staff, (213) 217-6000

The Water Authority and MWD are actively pursuing programs and projects to diversify their water supply resources. A description of these efforts as well as the challenges facing the Water Authority and MWD can be found in the San Diego County Water Authority Official Statement, dated January 21, 2010, relating to Water Revenue Bonds 2010B, and MWD's Official Statement, dated June 8, 2011, relating to Water Revenue Refunding Bonds, 2011 Series B. These Official Statements are available at the following websites[1]:

http://www.sdcwa.org/sites/default/files/files/finance-investor/2010Bond.pdf

http://www.mwdh2o.com/mwdh2o/pages/finance/statement.html

A brief overview of MWD and the Water Authority, including the Public Utilities Department relationship to these agencies, is included below.

A description of local surface and local recycled water supplies available to the Public Utilities Department can be found is Section 5.4 of this Report.

---

[1] This information is current at the time this document was prepared.

5.1 Metropolitan Water District of Southern California

MWD was created in 1928, under authority of the Metropolitan Water District Act (California Statutes 1927, Chapter 429, as reenacted in 1969 as Chapter 209, as amended) (the "MWD Act"). MWD's primary purpose is to provide a supplemental supply of wholesale water for domestic and municipal uses to its constituent agencies. The MWD service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. There are 26 member agencies of MWD, consisting of 14 cities, 11 municipal water districts and the Water Authority. A Board of Directors, currently numbering 37 members, governs MWD. Each constituent agency has at least one representative on the MWD Board. Representation and voting rights are based upon the assessed valuation of property within each constituent agency. The Water Authority has four members on the MWD Board. The total population of the MWD service area is currently estimated at approximately 19 million.

MWD's existing water supplies have been historically sufficient to meet demands within the service area of MWD during years of normal precipitation. Although MWD plans and manages reserve supplies to account for normal occurrences of drought conditions, regulatory restrictions, including but not limited to restrictions under the Federal and California Endangered Species Acts, have placed limitations on MWD's ability to provide water to its member agencies. In the future, population growth, regulatory restrictions, increased competition for low-cost water supplies, and other factors such as climate change could impact MWD's ability to supply its member agencies even in normal years.

MWD Water Supply

MWD's two major sources of water are from the Colorado River and the State Water Project (SWP).

<u>Colorado River Water:</u> The Colorado River was MWD's original source of water after MWD's establishment in 1928. The Colorado River Aqueduct, which is owned and operated by MWD, is 242 miles long, starting at Lake Havasu and terminating at Lake Mathews in Riverside County.

Under applicable laws, agreements and treaties governing the use of water from the Colorado River, California is entitled to use 4.4 million acre-feet of Colorado River water annually, plus one-half of any surplus that may be available for use collectively in Arizona, California and Nevada as declared on an annual basis by the United States Secretary of the Interior. Under the priority system that governs the distribution of Colorado River water made available to California, MWD holds the fourth priority right of 550,000 acre-feet per year and a fifth priority right of 662,000 acre-feet per year. MWD's fourth priority right is within California's basic annual apportionment of 4.4 million acre-feet; however, the fifth priority right is outside of this entitlement and therefore is not considered a firm supply of water.

Several fish species and other wildlife species either directly or indirectly have the potential to affect Colorado River operations, thus changing the amount of water deliveries to the Colorado River Aqueduct. A number of species that are on either "endangered" or "threatened" lists under the federal and/or California endangered species acts ("ESAs") are present in the area of the Lower Colorado River. MWD and other stakeholder agencies have developed a multi-species conservation program that allows MWD to obtain federal and state permits for any incidental take of protected species resulting from current and future water and power operations of its Colorado River facilities and to minimize any uncertainty from additional listings of endangered species.

State Water Project: The SWP is owned by the State of California and operated by the State Department of Water Resources ("DWR"). The SWP transports Feather River water stored in and released from Oroville Dam and unregulated flows diverted directly from the San Francisco Bay/Sacramento-San Joaquin Delta Estuary ("Bay-Delta") south via the California Aqueduct to four delivery points near the northern and eastern boundaries of MWD. The total length of the California Aqueduct is 444 miles. MWD is one of 29 agencies that have long-term contracts for water service from DWR, but is the largest agency in terms of the number of people it serves, the share of SWP water to which it is entitled, and the total amount of annual payments made to DWR. MWD's contract with DWR provides for the ultimate delivery of 1,911,400 acre-feet per year (46 percent of the total SWP entitlement). MWD also retains a "call" on 100,000 acre-feet per year on water transferred to the Coachella Valley Water District and the Desert Water Agency, if needed, so long as it pays for the financial obligations associated with the water during the call period. The SWP was originally intended to meet demands of 4.2 million acre-feet per year. Initial SWP facilities were completed in the early 1970s, and it was envisioned that additional facilities would be constructed as contractor demands increased. Several factors, including public opposition, increased costs, and increased non-SWP demands for limited water supplies, combined to delay the construction of additional facilities.

The quantity of SWP water available for delivery each year is controlled by hydrology, environmental and operational considerations. In addition to its importance to urban and agricultural water users, the Bay-Delta is of critical ecological importance. The Bay-Delta is the largest estuary on the West Coast of the United States and provides habitat for more than 750 plant and animal species. One hundred fifty years of human activity have contributed to the destruction of habitat, the decline of several estuarine and anadromous fish species, and the deterioration of water quality. These activities include increasing water demands from urban and agricultural uses, the dredging and filling of tidal marshes, the construction of levees, urban runoff, agricultural drainage, runoff from abandoned mines, and the introduction of non-native species, thus affecting the supply and reliability of this source. Since 2008, layers of new pumping restrictions have been put in place to address the migration pattern of various fish species. Delta pumping restrictions now exist in nine out of twelve months of the year. The result is a loss of supply of approximately 30 percent in an average year.

5.2 San Diego County Water Authority

The Water Authority's service area lies within the foothill and coastal areas of the westerly third of San Diego County, encompassing 952,208 acres (1,488 square miles). When the Water Authority was established in 1944, its service area consisted of 94,707 acres. Growth has primarily resulted from the addition and annexation of additional service areas by member agencies. The City of San Diego, with 210,726 acres, is the largest service area within the Water Authority's total service area. Of the total population of San Diego County, 97 percent live within the Water Authority's service area. The City of San Diego represents approximately 43 percent of the total population of the Water Authority's service area.

The Water Authority's service area is a semi-arid region where historically the natural occurrence of water from rainfall and groundwater provides a firm water supply for only a small portion of the water needs of the current population. Since 1990, the Water Authority has provided an average of 85 percent of the water supply within its service area. As a wholesaling entity, the Water Authority has no retail customers, but serves only its member agencies.

The Water Authority's mission is to provide its service area a safe and reliable water supply. Historically, the principal source of supply for the Water Authority's service area has been water purchased by the Water Authority from MWD for sale to the Water Authority's member agencies. However, drought conditions and population growth in the Water Authority's service area have highlighted the need for diversification of the Water Authority's water supply. Therefore, consistent with its mission statement, the Water Authority has actively pursued a strategy of supply diversification that includes the acquisition and importation of additional water supplies, the development of additional local water supply projects and augmentation of its water supply via local and regional water storage capacity. Water supplies utilized within the Water Authority service area originate from two sources: (1) water imported by the Water Authority and (2) local supplies (such as local runoff, groundwater, recycled water and, prospectively seawater desalination). Since 1990, local supplies have grown to constitute 15 percent of the Water Authority's water supply, and the Water Authority has implemented programs and supported new technologies in order to assist its member agencies in increasing this percentage. Although MWD remains the Water Authority's largest source of imported water, recent years have also seen the diversification of the Water Authority's sources of imported water through core and spot water transfers with other agencies.

The Quantification Settlement Agreement (QSA) for the Colorado River was completed in October 2003. This historic agreement was enacted to provide California the means to implement water transfers and supply programs that will allow California to live within the state's 4.4 million acre-foot basic annual apportionment of Colorado River water. The QSA also commits the state to a restoration path for the environmentally sensitive Salton Sea and provides full mitigation for these water supply programs.

Specific programs under the QSA that directly benefits the Water Authority include the San Diego County Water Authority-Imperial Irrigation District water transfer agreement, which will provide up to 200,000 acre-feet of water a year through water conservation measures in Imperial Valley. The QSA also allows for the transfer of water conserved from the concrete lining of portions of the previously earthen All-American and Coachella Canals from the Imperial Irrigation District. The canal lining projects reduce the loss of water that occurs through seepage. The Water Authority will annually receive 77,700 acre-feet of this conserved water.

The QSA intended to assure California up to 75 years of stability in its Colorado River water supplies. In February 2010, Sacramento County Superior Court Judge Roland Candee invalidated the QSA on grounds that a provision in the contract failed to cap the State of California's Salton Sea environmental mitigation fees. The MWD, IID, Water Authority, the State and others have appealed various aspects of the court's ruling, which has been stayed pending outcome of the appeal. If the ruling stands, it could delay the implementation of programs authorized under the QSA or result in increased costs or other adverse impacts. The impact, if any, which the ruling might have on water supplies, cannot be adequately determined at this time.

The Water Authority has encouraged development of additional local water supply projects such as water recycling and groundwater projects through the award of Local Water Supply Development ("LWSD") incentives of up to $200 per acre-foot for recycled water and groundwater produced and beneficially reused within the Water Authority's service area. The purpose of the Water Authority's LWSD program is to promote the development of cost-effective water recycling and groundwater projects that prevent or reduce a demand for imported water and improve regional water supply reliability. The LWSD Program reimburses member agencies for all, or a portion of the difference between the actual per acre-foot cost of producing recycled water, and the revenue generated by the LWSD participant through the sale of that acre-foot of recycled water (not to exceed $200 per acre-foot). In February 2008, the program was expanded to include funding for local brackish and seawater desalination projects.

5.3 2009 Comprehensive Water Package

On November 4, 2009, the California State Legislature passed a comprehensive package of water legislation (the "2009 State Water Legislation") that included five bills (four of which were subsequently signed by Governor Schwarzenegger) addressing California's statewide water situation, with particular emphasis on the Bay-Delta. The 2009 State Water Legislation includes, among other things, a 20 percent water conservation mandate for most localities in the State by 2020, new regulations regarding voluntary monitoring of groundwater levels by localities, and an $11.1 billion State general obligation bond measure. The 2009 State Water Legislation also created two new governmental agencies – the Delta Stewardship Council and the Sacramento-San Joaquin Delta Conservancy. The Delta Stewardship Council is charged with developing and implementing a Delta Plan, which would include the Bay Delta Conservation Plan, upon meeting certain conditions. The Sacramento-San Joaquin Delta Conservancy will implement ecosystem restoration activities in the Bay-Delta. In addition, the 2009 State Water Legislation includes legislation addressing unauthorized Bay-Delta water diversions. At this time, it is not known what effect the 2009 State Water Legislation will have on future water supplies.

The $11.1 billion State general obligation bond measure originally set to be presented to the voters for their approval in 2010 would provide funding for projects and programs throughout the State and in the Bay-Delta. Major categories of bond funding would include statewide water system operational improvements, Bay-Delta sustainability, water supply reliability, conservation and watershed protection, groundwater protection, water quality improvements, and water recycling and water conservation.

On August 9, 2010, the California Legislature voted to postpone the water bond to the 2012 general elections. The decision was made since the state was facing a massive budget deficit and the chances of the bond passing by a general vote were slim. Postponing the bond required amendment of the water bond legislation. Governor Schwarzenegger affirmed that delaying the bond will not impact other parts of the 2009 water legislation. Supporters of the bond say that the delay will help lawmakers eliminate any imperfections in the bond.

Additional information regarding the 2009 Comprehensive Water Package can be found at the following website: http://www.sdcwa.org/

5.4 Public Utilities Department

The Public Utilities Department currently purchases approximately 85 to 90 % of its water from the Water Authority, which supplies the water (raw and treated) through two aqueducts consisting of five pipelines. While the Public Utilities Department imports a majority of its water, it uses three local supply sources to meet or offset potable demands: local surface water, conservation, and recycled water.

The availability of sufficient imported and regional water supplies to serve existing and planned uses within the Public Utilities Department service area is demonstrated in the prior discussion on the water supply reliability of MWD and the Water Authority. The City has been receiving water from the Water Authority since 1947 and during the last 20 years the City has purchased between 100,000 and 228,000 AFY. For Calendar Year 2010, water purchases totaled approximately 180,488 AF. Depending upon demands, growth and the success of local water supply initiatives, this could remain somewhat constant or increase up to a projected maximum of 298,860 AFY in 2035 during normal years. For the purpose of this analysis the maximum is used.

5.4.1 Demonstrating the Availability of Sufficient Supplies

Imported Supplies

Section 5, subdivision 11 of the County Water Authority Act states that the Water Authority "as far as practicable, shall provide each of its member agencies with adequate supplies of water to meet their expanding and increasing needs." Depending on local weather and supply conditions, the Water Authority provides between 75 to 95 percent of the total supplies used by its 24 member agencies. As mentioned in Section 4, the Public Utilities Department and other local retail water distributors formed the Water Authority in 1944 for the purpose of purchasing Colorado River water from the MWD.

Local Surface Water Supplies

The Public Utilities Department maintains and operates nine local surface raw water storage facilities which are connected directly or indirectly to water treatment operations. In the San Diego region approximately 13 percent of the local precipitation produces surface runoff to streams that supply Public Utilities Department reservoirs. Approximately half of this run-off is used for the municipal water supply, while the remainder evaporates during reservoir storage. In very wet years, the run-off remainder may spill over the reservoir dams and return to the Pacific Ocean. Average rainfall produces less than half of the average runoff in San Diego. The local climate requires about average rainfall to saturate the soils sufficiently for significant surface run-off to occur. Therefore, most of the run-off to reservoirs is produced in years with much greater than average rainfall. Some flooding may occur even during average or below average rainfall years if the annual rainfall is concentrated in a few intense storms.

The use of local water is affected by availability and water resource management policies. The Public Utilities Department's policy is to use local water first to reduce imported water purchases and costs. The Public Utilities Department also operates emergency and seasonal storage programs in conjunction with its policy.

The purpose of emergency storage is to increase the reliability of the imported water aqueduct system. This is accomplished by maintaining an accessible amount of stored water that could provide an uninterrupted supply of water to the City's water treatment facilities should an interruption to the supply of imported water occur. The management of reservoirs is guided by Council Policy 400-04, which outlines the City's Emergency Water Storage Program. The policy mandates that the Public Utilities Department store sufficient water in active, available storage to meet six-tenths of the normal annual (7.2 months) City water demand requirements (conservation is not included). Active, available storage is that portion of the water that is above the lowest usable outlet of each reservoir.

The monthly emergency storage requirement changes from month to month and is based on the upcoming seven months water demand. This results in a seasonally fluctuating emergency storage requirement, generally peaking in May and reaching its minimum in October. This seasonally fluctuating requirement makes a portion of the required emergency storage capacity available for impounding or seasonal storage.

The purpose of seasonal storage is to increase imported water supply. This is done by storing surplus imported water in the wet winter season for use during the dry summer season. This may also be accomplished by increased use of imported water in lieu of local water in the winter when local water may be saved in reservoirs or groundwater basins for summer use. In addition to increased water yield, this type of seasonal operation also reduces summer peaking on the imported water delivery system.

Conservation

The Public Utilities Department's Water Conservation Program is effective in promoting permanent water savings. Established by the City Council in 1985, the Water Conservation Program now accounts for over 34,000 AF of potable water savings per year. This savings has been achieved by creating a water conservation ethic, adopting programs, policies and ordinances designed to promote water conservation practices, and implementing comprehensive public information and education campaigns.

The City offers a broad range of conservation methods to help meet the needs of our residential and commercial water customers. These include:

- Rebate programs for high efficiency toilets, washing machines and commercial water saving devices
- Survey programs
- Regulations
- Landscape and irrigation efficiency
- Public Education and Outreach

Research conducted by the City, the Water Authority, and the Water Research Foundation has shown that more than half of residential water-use is outdoors. Therefore, the City has added outdoor conservation programs to focus on water efficient landscaping and irrigation management which provide the best opportunity to achieve significant water savings.

Tools and services available and being developed for customers include:

- Commercial and Residential Water-Use Survey Programs — account for all water-use, determine leaks, and check irrigation systems for proper function and uniform coverage. Residential surveys average 15% water savings, while commercial surveys, depending on type of facility, can achieve 15% to 25% water savings. The current focus is on multi-family surveys.

- Nationally recognized Landscape Watering Calculator — an on-line tool that creates watering schedules based on landscaping features, soil type, and weather data. The Calculator is very popular and those who have used it are impressed with its ease of use. MWD has adapted this tool and it is available throughout Southern California.

- Water Resources Landscape Database — another tool used to create water budgets and manage irrigation using aerial photographs, GIS maps, weather data, etc. This service has generated significant water savings in City parks, freeway landscapes, schools, and homeowner associations.

- New programs in place include incentives to install water efficient irrigation equipment and evapo-transpiration controllers (smart irrigation clocks that use weather data to set watering schedules); as well as incentives to replace turf with sustainable landscapes.

In addition to offering landscape water conservation programs to existing customers, the Public Utilities Department is also working closely with the City's Planning and Development Services Departments to incorporate water conservation requirements in the City's General Plan and permitting process. This will ensure that new communities and properties will also have water efficient landscapes.

Planning to increase water conservation is an ongoing process. The aforementioned water conservation programs undergo periodic reevaluation to ensure the realization of forecasted savings. Additionally, changes in water conservation technologies may require reassessment of long-range plans. The Public Utilities Department continues to work with proven water conservation programs, while including irrigation management programs to maximize water savings. The Public Utilities Department regularly examines new technologies and annually checks progress towards conservation goals. The Public Utilities Department continues to work collaboratively with MWD and the Water Authority to formulate new conservation initiatives.

Drought Management

In response to the Governor's Executive Order in 2008, the Mayor declared a water shortage emergency for the City of San Diego under Municipal Code and implemented a "Level 1 – Voluntary Compliance – Water Watch" and called for redoubling of efforts aimed to achieve voluntary water reduction. Also in 2008, the Mayor directed the Public Utilities Department to review the City's existing Emergency Water Regulations and propose amendments with the goal of improving the City's response to water shortage conditions. The review resulted in a series of amendments to the existing Municipal Code which established year-round water waste prohibitions, provided clear water shortage "triggers" for moving from one drought response level to another, provided clear targets for achieving water use reductions, and provided an updated penalty and hardship variance process which governs the application and enforcement of the emergency water restrictions. These amendments became effective January 14, 2009. On April 27, 2009 the City Council adopted a "Level 2 – Drought Alert". Level 2 consists of additional mandatory water use restrictions. These restrictions became effective on June 1, 2009. In FY 2011, an unusually heavy snow and rainfall season brought California's water storage levels way up after three drought years. Following the footsteps of DWR, MWD and the Water Authority, the San Diego City Council decided to end mandatory water-use restrictions in May 2011. The move did not affect several water-waste restrictions that remain permanent year-round.

Recycled Water Supplies

Recycled water is produced from wastewater processed at two water reclamation plants owned and operated by the City of San Diego: North City and South Bay. In CY 2010, financial incentives from the sale of recycled water resulted in nearly $2.3 million in savings towards imported water purchases. The financial incentives are a result of local water resources development agreements with MWD and Water Authority.

In 2010, the beneficial reuse of the recycled water was 11,317 AF: 6,948 AF from the North City Water Reclamation Plant and 4,369 AF from the South Bay Plant. Proactive marketing activities targeting existing irrigation customers, to encourage them to convert their cooling systems to recycled water, coupled with outreach efforts to connect new customers have been successful, as recycled water meter connections have increased over 25% (2007 figures compared to 2010). On December 31, 2007, 406 retail meters were connected to the distribution system and as of December 31, 2010, 511 retail meters are connected. Major retail customers include the City of San Diego Park & Recreation Department, CalTrans, University of California at San Diego, Black Mountain Ranch HOA, Santa Luz Golf Course, the City of San Diego Metro Biosolids Center, Miramar Marine Corps Air Station Golf Course, and the IBWC. The City also provides recycled water to 4 wholesale connections. The majority of customers use the recycled water for irrigation purposes.

By the end of CY 2011, the Public Utilities Department, in cooperation with the Park & Recreation Department, will have completed thirteen parkland/street median irrigation system conversions to recycled water. The retrofits are funded in part by reimbursement grants from the Bureau of Reclamation, MWD and San Diego Gas & Electric.

Public Utilities Department's Capital Improvement Program

The Public Utilities Department reevaluates the projects contained in the Capital Improvements Program (CIP) and the timing thereof periodically. Changes to the CIP are made to reflect changing priorities within the water system and occur as a result of project scope changes, date revisions, project sequencing, and operational considerations. The Public Utilities Department expended approximately $1.1 billion from July 1, 1998 through June 30, 2010 on CIP projects. Improvements included projects to upgrade and expand water treatment plants, rehabilitate raw and treated water storage facilities, construct major transmission pipelines, replace and/or upgrade existing pump stations, replace cast iron water mains citywide, expand the recycled water system, and other new supply initiatives. In February 2007, the City Council adopted increases for the next four fiscal years of 6% per year. These rate increases will provide needed revenue to continue funding the upgrade and expansion of the water system through the CIP in order to ensure a reliable water supply for all City residents. For the Fiscal Years ending June 30, 2008 through June 30, 2011, the Public Utilities Department plans to expend approximately $585 million on such improvements.

With the above program coming to a close, the Public Utilities Department initiated a facilities master plan in 2009 to identify long-term facility needs. Over 80 projects were identified through this master planning effort and will comprise the 2012-2032 CIP. Project scopes were based on findings primarily from facility condition assessments and system evaluations that identified areas in which hydraulic performance criteria cannot all be met. Council Policy 800-14 (CP 800-14) establishes a framework for prioritizing CIP projects, and it has been refined to reflect water-specific needs. The refined framework has provided a mechanism for objectively and consistently prioritizing over 80 recently-identified projects. CP 800-14 refinements were made with significant input from staff throughout the department as well as IROC (Independent Rates Oversight Committee). The list of prioritized projects, along with cost estimates and durations, will be the basis for 2012-2032 CIP.

Summary of Supplies

Historic imported water deliveries from the Water Authority to the Public Utilities Department and local surface water, conservation savings and recycled water deliveries are shown in **Table 5-1.**

Table 5-1
Historic Imported, Local and Recycled Water Demands*
Public Utilities Department

Fiscal Year	Imported Water (acre-feet)	Local Surface Water (acre-feet)	Conservation[1] (acre-feet)	Recycled Water (acre-feet)	Total[2] (acre-feet)
1990	233,158	22,500	-	-	255,658
1995	162,404	59,024	8,914	-	230,342
2000	207,874	39,098	17,410	3,250	267,632
2005	204,144	26,584	29,410	4,294	264,432
2010	188,337	13,117	34,317	12,173	247,944

[1] Conserved water results in savings and is not a direct supply.
[2] Total includes water supplied and conserved.
*Includes retail and wholesale demands

5.4.2 Plans for Acquiring Additional Supplies

Future Supplies

In 2002, the City of San Diego City Council adopted the Long-Range Water Resources Plan 2002-2030 (Long-Range Plan). This plan provides a decision-making framework for evaluating water supply options. The Long-Range Plan identifies water conservation, water recycling, groundwater desalination, groundwater storage, ocean desalination, marine transport, water transfers, and imported supply from the Water Authority and MWD as potential near-term and long-term supplies. The Long-Range Plan concluded that no single supply source would be sufficient to meet the City's future water demands, but a portfolio of supply options would reduce the dependence upon imported water over time.

The Public Utilities Department has begun work on updating the Long-Range Plan and will have the update complete in 2012. The 2012 Long-Range Plan will evaluate supply options such as water conservation, recycled water, groundwater storage, brackish groundwater desalination and indirect potable reuse. Conservation and water recycling have been implemented and will be increased. The Public Utilities Department is currently investigating the development of groundwater. Once these supplies are developed, and contracts, permits, and approvals obtained, these new supplies will be included in the UWMP.

Conservation

Future conservation supply development programs and technologies that may be pursued include:

1) Hot water circulating pump: This emerging water-savings technology reduces "warm-up" time for showers and other fixtures throughout the home. This system can save the average family approximately 2 gallons per use at the fixture.
2) "ShowerStart™": ShowerStart™ is an innovative device designed to be installed at the shower. This device has an internal temperature sensor and valve that works to stop the flow of water to a trickle once hot water has arrived at the fixture.
3) Flow restrictors: Flow restrictions for hospital sinks can reduce water waste during medical "scrubbing".

"Other" potential programs

- Special programs for dedicated landscape meters
- Landscape requirements and water budgets
- Tiered water rates to encourage water savings
- Retrofit multi-family meters with sub meters
- Retrofit mixed use commercial meters with separate irrigation meters

For the purposes of this Report, these enhanced conservation programs are not included as a resource to meet demands.

Recycled Water Study

The City of San Diego is currently conducting a Recycled Water Study. The purpose of this study is to identify opportunities to increase the usage of recycled water for potable and non-potable uses, the potential costs of implementing such opportunities, and to what extent such recycling could feasibly offload wastewater flows to the Point Loma Wastewater Treatment Plant (PLWTP).

The United States Environmental Protection Agency (USEPA) recently made a decision to grant the City San Diego a waiver to its National Pollutant Discharge Elimination System Permit. The waiver allows the City to continue to operate the PLWTP as an Advanced-Primary Treatment facility rather than requiring an upgrade to secondary treatment. Members of the environmental community (San Diego Coastkeeper and Surfrider Foundation) have traditionally opposed past permit waiver issuance in favor of urging higher level of water recycling. However, during the 2009 permit waiver process and in lieu of such opposition, San Diego Coastkeeper and the San Diego Chapter of Surfrider Foundation entered into a Cooperative Agreement with the City to conduct a Recycled Water Study. In accordance with the Agreement, both of these organizations will provide their support of the USEPA's decision to grant the waiver. The City's responsibility per the Agreement is to execute this study.

Additional goals of the study include identification and evaluation of recycling alternatives that would result in:

- The upgrade of the existing PLWTP to secondary treatment at the lowest possible cost.
- Maximizing water reclamation and to use recycled water to the fullest extent possible, including indirect potable reuse, non potable reuse and direct potable reuse.
- Evaluating opportunities to increase recycled water reuse via satellite facilities or via existing water reclamation plants. Evaluation will include detailed economic analysis that will consider potential capital and operation and maintenance savings on both the water and wastewater systems.

Groundwater

The City has several groundwater basins within its jurisdiction, including San Pasqual in the north; San Diego River System in the center of the City comprising the Mission Valley Basin and the El Monte/Santee Basin; the Tijuana River Valley Basin in the south; and the San Diego Formation, a large geological water bearing formation, underlying the southwestern portion of San Diego County along the coast, roughly from the Mexican border to Mission Valley.

The groundwater from these basins is predominantly brackish. Improved technologies provide consideration of affordable water supply sources, such as brackish groundwater, that were not available a few decades ago. This supply source is a viable alternative and is part of the City's planning efforts. Local water supply projects, particularly groundwater exploration, benefit city rate payers, offer drought protection, and are locally controlled. The City is presently pursuing groundwater feasibility projects in San Pasqual, Mission Valley Basin, El Monte/Santee Basin, Tijuana River Valley Basin, and the San Diego Formation.

In the San Pasqual Basin, the San Pasqual Brackish Groundwater Desalination Project, which included a small scale demonstration project and looked at the feasibility of building a full-scale desalination facility in the lower western end of the San Pasqual basin, is complete. In addition, a planning study for San Pasqual Conjunctive Use that investigates the feasibility of storing and recovering raw water in the upper eastern portion of the San Pasqual basin has been completed. Identified in the report are percolation basins alternatives and project costs. The project team is focused on investigating the synergies between the potential full scale desalination facility and conjunctive use studies completed. Finally, efforts are in progress to implement basin recommendations and actions from the Council adopted 2007 San Pasqual Groundwater Management Plan (GMP).

The City is executing a feasibility study in the Mission Valley Basin, El Monte/Santee Basin, and the San Diego Formation known as the Pilot Production Wells Investigation. The goal of this investigation is to install a single production well in each of the basins to test the performance of the basin, evaluate potential environmental impacts, and assess appropriate treatment technologies for approximate two year duration while delivering the groundwater for beneficial use. At the end of the testing period, the City will decide whether to keep the wells in operation, expand the facilities, or shut down operations depending on the outcome of the investigation in each basin.

Separately, the City is examining the feasibility of using the Tijuana River Valley alluvial basin for aquifer storage and recovery (ASR) to seasonally store recycled water during the wet season, and extraction during the dry season to meet the service area peak demands for recycled water. A number of concerns will be addressed including: useable storage capacity of the alluvial aquifer, the injection or spreading of tertiary treated wastewater into a groundwater basin, potential lowering or mounding of the groundwater table near environmentally sensitive lands, potential of contributing to sea water intrusion, the mixing of native groundwater with recycled water when extracted for distribution, compliance with Basin Plan objectives, and potential impacts to neighboring Tijuana municipal supply wells.

Water Purification Demonstration Project

The City has implemented a Water Purification Demonstration Project to evaluate the feasibility of using advanced water purification (AWP) on recycled wastewater for eventual augmentation of supplies in a local reservoir. Reservoir water would undergo further treatment before being distributed as drinking water. The AWP Demonstration Facility will operate for 18 months. During the first 12 months of operation the advanced purified water will be frequently tested to determine the effectiveness of the treatment equipment in removing contaminants; the equipment will be monitored for flow-and overall performance; operating data will be gathered and analyzed to refine operation and maintenance estimates for a full-scale system; tours are being conducted as part of the public outreach effort; a study of the San Vicente Reservoir will be conducted to establish residence time and short circuiting conditions of the AWP water in the reservoir and all necessary steps will be taken to ensure that the treatment process meets the requirements set by the CDHP. A Final Project Report for the Demonstration Project will be prepared and serve as a single document describing the results of the Demonstration Project for elected officials, regulators, and the public. The Demonstration Project is an essential step towards full implementation of the Indirect Potable Reuse/Reservoir Augmentation program. On November

18, 2008, the City Council approved a rate increase to fund the $11.8 million Demonstration Project. The rate increase went into effect on January 1, 2009.

Water Transfers

Water transfers are agreements in which water supplies are transferred from the original point of origin or control to a new place of use. Transfers can offer flexibility and help ensure that the state's water resources are used effectively. While a myriad of rules surround transfers in California, water transfers are not currently considered as a supply resource as defined in SB 610 to meet projected demands. The Public Utilities Department is relying upon the Water Authority and MWD to pursue water transfers.

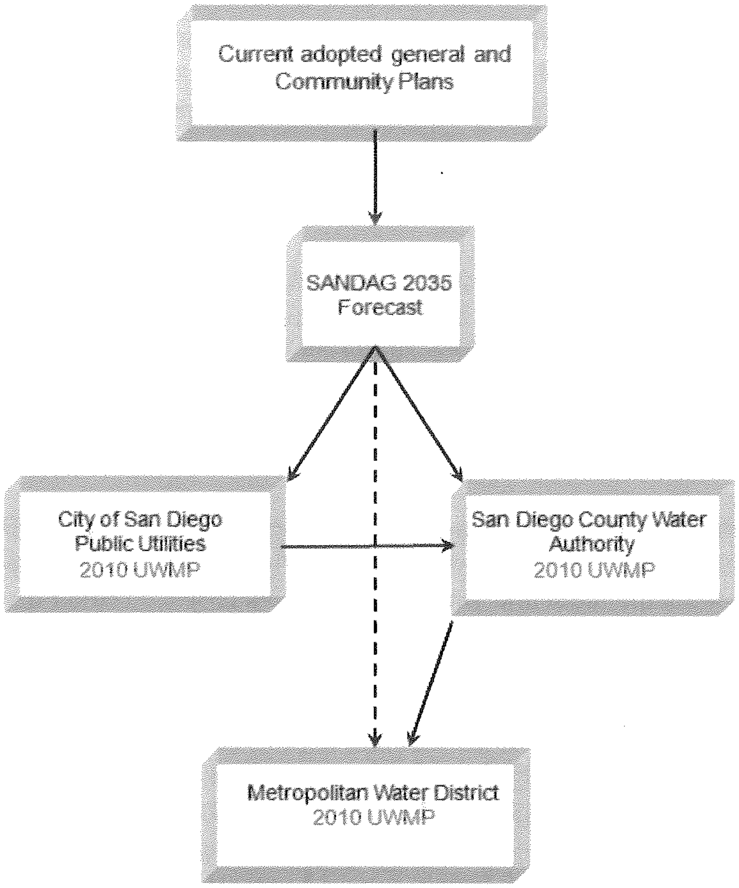
Section 6 - Projected Demands

Approximately every three years the Public Utilities Department calculates projected water demands within its service area for planning purposes. A computer model is used (IWR-MAIN) to break down water-use by major water-use sectors: Commercial, Industrial, Residential and Public uses. Using past water-use data from the Public Utilities Department and demographic data provided by SANDAG, the model is able to correlate the data to determine sector water demands. Using this correlated data, future demographic data is used to project water demands. The model also accounts for water conservation, weather and water rate changes. The most recent computer model is utilized consistent with the timing for the upcoming UWMP and forms the basis for the water demand numbers contained in the next UWMP.

The Public Utilities Department updates its UWMP every five years. The 2010 UWMP, originally scheduled for completion in December 2010, was completed and adopted in June 2011. The time extension granted for the completion of the 2010 UWMP was due to the new SBX7-7 reporting requirement that needed to be incorporated into the 2010 UWMP. SBX7-7, which is part of the 2009 Water Legislation, requires urban water agencies to reduce statewide per capita water consumption 20 percent by 2020.

In addition to the Public Utilities Department, the Water Authority and MWD use regional growth forecasts to calculate projected water demands within their respective service areas. This provides for consistency between the retail and wholesale agencies projected water demands, thereby ensuring that adequate supplies are being planned for the Public Utilities Department's existing and future water users. The SANDAG forecasts are based on adopted community plan land use, but not citywide zoning. SANDAG forecasts the number of residents, dwelling units, and employees in an area, but not square footage, hotel rooms, or visitors (non-residents or non-employees). For urban areas the smallest forecast geography is typically at the block level, but for suburban and less developed area the forecast geography can be larger. SANDAG typically updates the regional growth forecast every three to four years. The Public Utilities Department water demand projections which based on the SANDAG Series 12 Forecast are incorporated in the City's 2010 UWMP. These projections are then forwarded to the Water Authority for use in the preparation of their UWMP, which is further incorporated into MWD's UWMP to calculate the ultimate water demands of the region (see **Figure 6-1**).

FIGURE 6-1
WATER DEMAND PROJECTIONS



The demands from the 2010 UWMP are used throughout this Report. The historical and projected water demands for a normal year are shown in **Table 6-1**.

As part of the requirements for complying with SB 610, **Table 6-7** and **Table 6-8** show the single dry year and consecutive multiple dry year demands. All tables in this section are based on data from the 2010 UWMP.

TABLE 6-1
PAST, CURRENT, AND PROJECTED WATER DELIVERIES
(AFY)

Water Use Sector	2005				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	217,983	77,864	0	0	77,864
Multi-family	28,443	39,220	0	0	39,220
Commercial	14,468	33,099	0	0	33,099
Industrial	253	4,276	0	0	4,276
Institutional/Governmental	2,341	16,842	0	0	16,842
Landscape Irrigation	7,245	27,877	0	0	27,877
Total	270,733	199,178	0	0	199,178

Source: City of San Diego Public Utilities Report U02-P10715.

Water Use Sector	2010				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	220,862	62,367	0	0	62,367
Multi-family	28,361	36,324	0	0	36,324
Commercial	14,542	27,244	0	0	27,244
Industrial	186	2,325	0	0	2,325
Institutional/Governmental	2,321	13,774	0	0	13,774
Landscape Irrigation	7,327	20,257	0	0	20,257
Total	273,599	162,291	0	0	162,291

Source: City of San Diego Public Utilities Report U02-P100715.

Table 6-1, Continued

Water Use Sector	2015				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	231,346	75,922	0	0	75,922
Multi-family	32,082	47,266	0	0	47,266
Commercial	14,376	31,617	0	0	31,617
Industrial	186	2,071	0	0	2,071
Institutional/Governmental	2,302	13,359	0	0	13,359
Landscape Irrigation	7,583	25,452	0	0	25,452
Total	287,587	195,688	0	0	195,688

Water Use Sector	2020				
	Metered		Unmetered		Total Volume (AFY)
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	
Single family	236,639	79,992	0	0	79,992
Multi-family	37,330	56,700	0	0	56,700
Commercial	14,783	33,541	0	0	33,541
Industrial	186	2157	0	0	2157
Institutional/Governmental	2,302	13,772	0	0	13,772
Landscape Irrigation	7,869	27,247	0	0	27,247
Total	298,582	213,409	0	0	213,409

Water Use Sector	2025		2030		2035	
	Metered		Metered		Metered	
	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)	# Accounts	Volume (AFY)
Single family	241,491	83,370	244,138	85,633	245,682	86,471
Multi-family	42,662	66,070	47,910	75,328	52,420	82,781
Commercial	14,681	34,012	14,100	33,116	13,853	32,740
Industrial	176	2,077	166	1,995	166	1,967
Institutional/Governmental	2,247	13,639	2,172	13,399	2,154	13,329
Landscape irrigation	8,192	28,893	8,162	29,301	8,543	30,698
Total	308,505	228,061	315,534	238,772	321,337	247,986

Table 6-2 summarizes the current and planned water sources the City is relying on to meet future demands.

TABLE 6-2
PLANNED WATER SUPPLY SOURCES
(AFY)

Water Supply Sources	Wholesaler Supplied Volume (yes/no)	2015	2020	2025	2030	2035
San Diego County Water Authority	Yes	201,719	221,458	237,622	249,728	260,107
Supplier produced surface water [a]		29,000	29,000	29,000	29,000	29,000
Supplier produced groundwater		500	500	500	500	500
Transfers In		0	0	0	0	0
Exchanges In		0	0	0	0	0
Recycled Water [b]		9,253	9,253	9,253	9,253	9,253
Desalinated Water		0	0	0	0	0
Other		0	0	0	0	0
Total		240,472	260,211	276,375	288,481	298,860

Notes:

(a) *Local surface water estimates provided by City, 2011.*

(b) *Recycled water excludes recycled water sold to other agencies and is from table entitled, "NCWRP and SBWRP Summary of Baseline Demands", provided by the City on April 22, 2011.*

6.1 Sales to other Agencies

Potable

The City, through past agreements, sells treated water to the Cal-Am which provides water service to the cities of Coronado and Imperial Beach, City of Del Mar, and Naval Air Station North Island. The population of Naval Station North Island is located within the City of Coronado, whereas the other military bases that the City serves are within the City. The City also sells untreated water to Santa Fe Irrigation District and San Dieguito Water District. **Table 6-3** presents the water sales to other agencies.

Per the agreement between the City and Cal-Am, only local surface water is sold to Cal-Am to provide water to supply Cal-Am customers. A portion of City residents in the South Bay area are also served by Cal-Am and can be served by imported water as well. Per the agreement between the City and the City of Del Mar, the City takes deliveries of water, which the City of Del Mar purchases from the Water Authority, through the Second Aqueduct Connection at Miramar. This water is then treated at the City's Miramar WTP and transported to the City of Del Mar through several interconnections.

The City has agreements to provide surplus treated water to Otay Water District and untreated exchange water to Ramona Municipal Water District. These water deliveries occur infrequently and for short periods of time, and are therefore not shown in **Table 6-3**.

TABLE 6-3
SALES TO OTHER AGENCIES-POTABLE
(AFY)

Water Distributed	2005	2010	2015	2020	2025	2030	2035
California American Water Company	13,311	11,462	13,153	13,395	13,452	13,757	13,988
Santa Fe Irrigation District and San Dieguito Water District [(a)]	2,012	7,227	7,596	7,983	8,391	8,819	9,268
City of Del Mar [(b)]	1,324	1,058	1,112	1,168	1,228	1,290	1,356
Naval Air Station North Island	1,204	1,568	1,568	1,568	1,568	1,568	1,568
Total	14,515	13,030	14,721	14,963	15,020	15,325	15,556

Notes:

(a) Through a joint agreement, the City supplies raw water from local surface water supplies to Santa Fe Irrigation District/San Dieguito Water District, and treated water to the other agencies. This water supply is not included in total since the supply is not included in the local surface water supply.

(b) City of Del Mar not included in total as the City is treating water for Del Mar that is provided by Water Authority.

Recycled and Non-Revenue Water

The City has three separate agreements to sell recycled water. Olivenhain Municipal Water District and the City of Poway are provided recycled water from the City's North City Water Reclamation Plant while Otay Water District receives recycled water from the City's South Bay Water Reclamation Plant.

Non-Revenue Water (NRW) is water that is unaccounted for or unbilled water consumption. Unaccounted for water can be attributed to unauthorized consumption, meter inaccuracies, data errors, leakage on mains, leakage and overflow at storage and leakage at service connections. Using metered demand and total City delivered values, NRW was computed as 9.0 percent in 2008. Water use for firefighting, line flushing and other authorized, but unbilled use is classified in the computation of NRW as unbilled consumption.

City staff deemed it reasonable to assume this percent system loss could be maintained in future years given the City's aggressive program of leak detection and repair. The City is going forward with an automated meter reading system that could improve billing accuracy, better quantify real versus apparent losses and identify customer leaks. Thus, NRW is held constant in the projections at 9.0 percent for forecast years. **Table 6-4** presents the City's additional water uses (recycled water) and NRW.

TABLE 6-4
ADDITIONAL WATER USES AND LOSSES
(AFY)

Water Use	2005	2010	2015	2020	2025	2030	2035
Recycled water	4,294	7,656	9,253	9,253	9,253	9,253	9,253
Non-revenue water	10,404	21,909	20,810	22,586	24,041	25,131	26,065
Total	14,698	29,565	30,063	31,839	33,294	34,384	35,318

Notes:

1. *Source for recycled water: 2005 from Table 2-8 of the City's 2005 Urban Water Management Plan. 2010 from NCWRP and SBWRP beneficial reuse summary tables with wholesale deliveries excluded provided by the City on March 2, 2011. 2015 and later from table entitled, "NCWRP and SBWRP Summary of Baseline Demands", provided by the City on April 22, 2011.*
2. *Recycled water is City use only and excludes recycled water sold to other agencies.*
3. *Source for non-revenue water: For 2005, Table 2-8 of the City's 2005 Urban Water Management Plan with 4.3% assumption. For 2010 to 2035, City of San Diego Public Utilities, Update of Long-Term Water Demand Forecast, Table 6-5, Water Demand Forecast with Normal Weather, June 2010.*

Table 6-5 is a summary of and displays City's past water use from 2005 and 2010 with projected water use shown for 2015 thru 2035.

TABLE 6-5
TOTAL WATER-USE
(AFY)

Water Distributed	Total Water Use (AFY)						
	2005	2010	2015	2020	2025	2030	2035
Total Water Deliveries (Table 6-1)	199,178	162,291	195,688	213,409	228,061	238,772	247,986
Sales to Other Water Agencies (Table 6-3)	14,515	13,030	14,721	14,963	15,020	15,325	15,556
Additional Water Uses and Losses (Table 6-4)	14,698	29,565	30,063	31,839	33,294	34,384	35,318
Total	228,391	204,886	240,472	260,211	276,375	288,481	298,860

The analysis in **Table 6-6** below compares the projected normal water supply and customer demands from 2010 to 2035, in five-year increments.

TABLE 6-6
PROJECTED NORMAL SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	240,472	260,211	276,375	288,481	298,860
Demand totals	240,472	260,211	276,375	288,481	298,860
Difference (supply minus demand)	0	0	0	0	0

6.2 Projected Single-Dry-Year Water Supply and Demand

Table 6-7 provides a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments. The City's demands in single dry years are projected to be higher similar in proportion to the increase in regional water demands projected in the Water Authority's 2010 UWMP. An increase in use for landscape irrigation accounts for most of the increase in demands. It is assumed that recycled water demands would not increase in single dry years. The wholesale water supplies from the Water Authority are assumed to increase to meet the difference between the City's increased water demands and reduced local water supplies.

TABLE 6-7
PROJECTED SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	255,040	276,526	293,895	307,230	318,586
Demand totals	255,040	276,526	293,895	307,230	318,586
Difference (supply minus demand)	0	0	0	0	0

6.3 Projected Multiple-Dry-Year Water Supply and Demand

Table 6-8 compares the total water supply available in multiple dry water years with projected total water use over the next 25 years. The City's demands in multiple dry years are projected to be higher similar in proportion to the increase in regional water demands projected in Water Authority's 2010 UWMP. It is assumed that recycled water demands would not increase in multiple dry years. The wholesale water supplies from Water Authority are assumed to increase to meet the difference between the City's increased water demands and reduced local water supplies. Multiple dry year scenarios represent hot, dry weather periods which may generate urban water demands that are greater than normal. No extraordinary conservation measures are reflected in the demand projections. The recycled water supplies are assumed to experience no reduction in a dry year.

TABLE 6-8
PROJECTED SUPPLY AND DEMAND COMPARISON DURING MULTIPLE DRY YEAR PERIOD ENDING IN 2035

(AFY)

		Supply and Demand Comparison – Multiple Dry Year Events				
		2015	2020	2025	2030	2035
Multiple-dry year First year supply	Supply totals	257,587	278,451	296,319	309,230	320,382
	Demand totals	257,587	278,451	296,319	309,230	320,382
	Difference	0	0	0	0	0
Multiple-dry year Second year supply	Supply totals	267,323	288,723	306,726	320,467	332,038
	Demand totals	267,323	288,723	306,726	320,467	332,038
	Difference	0	0	0	0	0
Multiple-dry year Third year supply	Supply totals	281,466	303,004	322,166	334,720	346,823
	Demand totals	281,466	303,004	322,166	334,720	346,823
	Difference	0	0	0	0	0

Section 7 - Conclusion - Availability of Sufficient Supplies

The Project is consistent with water demand assumptions in the regional water resource planning documents of MWD, and the Water Authority. The Public Utilities Department receives the majority of its water supply from MWD through the Water Authority. In addition, MWD and the Water Authority have developed water supply plans to improve reliability and reduce dependence upon existing imported supplies. MWD's Regional Urban Water Management Plan and Integrated Resources Plan, the Water Authority's 2010 UWMP and annual water supply report include projects that meet long-term supply needs through securing water from the State Water Project, Colorado River, local water supply development and recycled water.

The forecasted normal year water demands compared with projected supplies for the Public Utilities Department are shown in **Table 7-1**. This demonstrates that with existing supplies and implementation of the projects discussed in the three agencies's planning documents there will be adequate water supplies to serve all anticipated growth (existing and future planned uses) and development.

TABLE 7-1
PROJECTED SUPPLY AND DEMAND COMPARISON – NORMAL YEAR
(AFY)

	2015	2020	2025	2030	2035
Supply totals	240,472	260,211	276,375	288,481	298,860
Demand totals	240,472	260,211	276,375	288,481	298,860
Difference (supply minus demand)	0	0	0	0	0

Table 7-2 provides a comparison of a single dry year water supply with projected total water use over the next 25 years, in five-year increments.

TABLE 7-2
PROJECTED SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON
(AFY)

	2015	2020	2025	2030	2035
Supply totals	255,040	276,526	293,895	307,230	318,586
Demand totals	255,040	276,526	293,895	307,230	318,586
Difference (supply minus demand)	0	0	0	0	0

The multiple-dry year scenarios, within a 20-year projection, are shown in **Table 7-3**. This demonstrates that supplies will be adequate to meet all anticipated growth (existing and future planned uses) and development in multiple dry year periods.

TABLE 7-3
PROJECTED SUPPLY AND DEMAND COMPARISON DURING MULTIPLE DRY YEAR PERIOD ENDING IN 2035
(AFY)

		Supply and Demand Comparison – Multiple Dry Year Events				
		2015	2020	2025	2030	2035
Multiple-dry year First year supply	Supply totals	257,587	278,451	296,319	309,230	320,382
	Demand totals	257,587	278,451	296,319	309,230	320,382
	Difference	0	0	0	0	0
Multiple-dry year Second year supply	Supply totals	267,323	288,723	306,726	320,467	332,038
	Demand totals	267,323	288,723	306,726	320,467	332,038
	Difference	0	0	0	0	0
Multiple-dry year Third year supply	Supply totals	281,466	303,004	322,166	334,720	346,823
	Demand totals	281,466	303,004	322,166	334,720	346,823
	Difference	0	0	0	0	0

This Report demonstrates that there are sufficient water supplies over a 20-year planning horizon to meet the projected demands of the Project as well as the existing and other planned development projects within the Public Utilities Department service area in normal, dry year, and multiple dry year forecasts. This Project is proposing water demands which are included in the regional water resource planning documents of the Water Authority, and MWD.

Source Documents

California Department of Water Resources (DWR), Progress on Incorporating Climate Change into Management of California's Water Resources, July 2006 Report

California Climate Change Center, 2006 Biennial Report: Our Changing Climate: Assessing the Risks to California, 2006

California Department of Water Resources Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, March 2011

DSD Memorandum - Request for assessment and project description, March 2010

MWD 2010 Regional Urban Water Management Plan

MWD Report on Metropolitan's Water Supplies, A Blueprint for Water Reliability, March 2003

MWD Integrated Resources Plan Update, Oct 2010

Water Authority 2010 Urban Water Management Plan

Water Authority Regional Water Facilities Master Plan, 2003

Water Department Long-Range Water Resources Plan (2002-2030), December 2002

Public Utilities Department 2010 Urban Water Management Plan

Water Department The City of San Diego Subordinated Water Revenue Bonds, Series 2002, October 2002

Appendix J.1

ADDENDUM TO WATER SUPPLY ASSESSMENT AND WATER SUPPLY VERIFICATION

Atkins North America, Inc.
3570 Carmel Mountain Road, Suite 300
San Diego, California 92130

Telephone: +1.858.874.1810
Fax: +1.858.259.0741

www.atkinsglobal.com/northamerica

Addendum
to the
Water Supply Assessment and Verification Report

Introduction

This addendum has been prepared to discuss how the changes included in the modified development proposal currently being processed by the project applicant relate to the results and conclusions drawn in our original report dated September 6, 2011.

In response to comments received during the public review period for the Draft Environmental Impact Report (EIR), Kilroy Realty has reduced the density and intensity of the proposed development. For comparison purposes, the new plan is referred to as the "Revised Project" while the plan analyzed in the Draft EIR is referred to as the "Originally Proposed Project." The land use components of the Revised Project are illustrated in Table 1 and Figure 1.

Table 1. Revised Project
(Gross Leasable Area)

Block	Commercial Retail[1] (Square Feet)		Commercial Office[3] (Square Feet)		Multi-family Residential (Dwelling Units)
	Retail	Cinema[2]	Corporate Office	Professional Office[4]	
A	47,353	---	---	---	165
B	38,000	---	---	---	337
C	12,611	---	---	---	106
D	70,100	48,000	221,000	21,000	
E	30,254		242,000		
Total	**198,500**	**48,000**	**463,000**	**21,000**	**608**

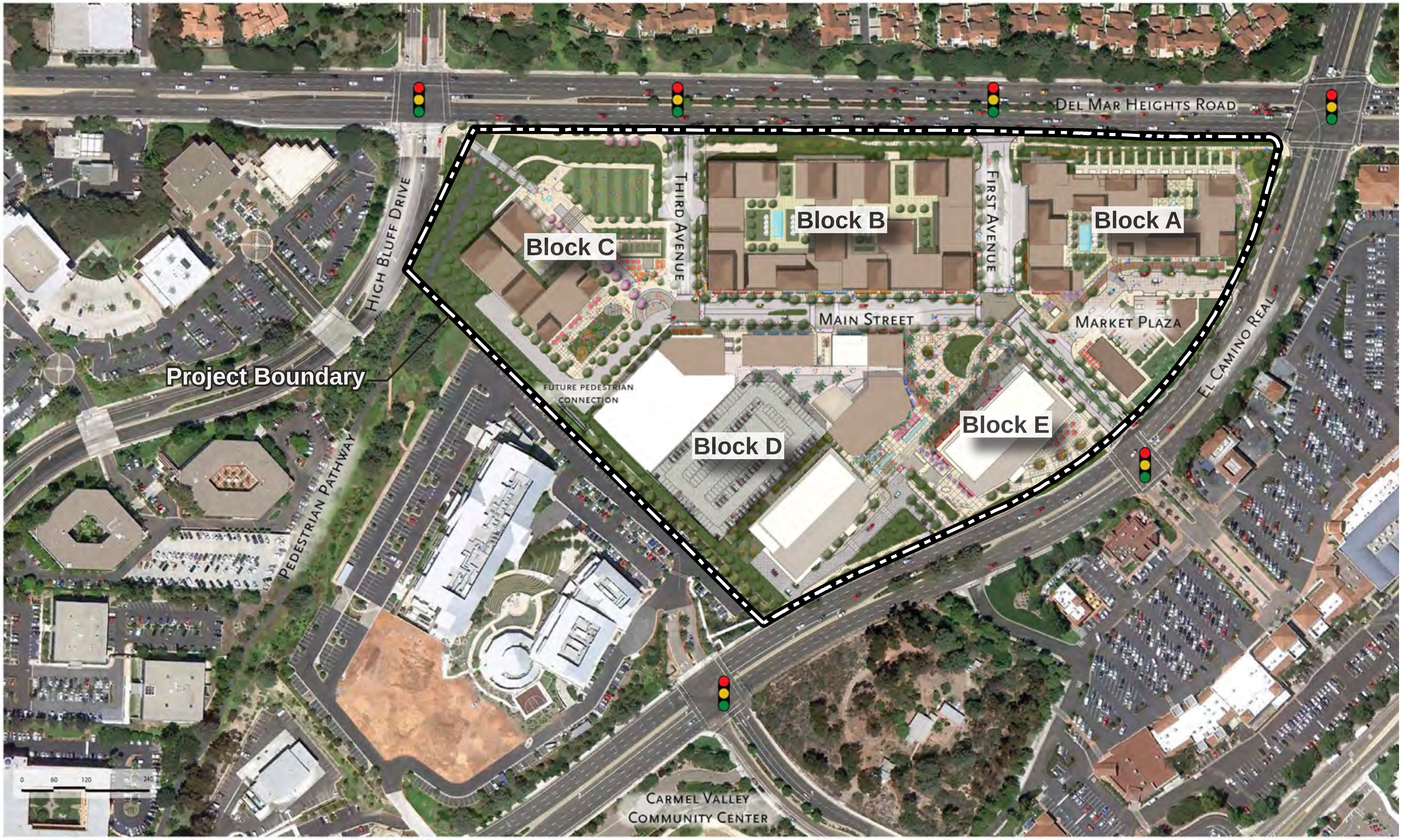
[1] All areas are considered gross leasable because all retail space may be leasable.

[2] Cinema consists of up to 1,200 seats with 400 seats in Phase 1 & 2 and 1,200 seats in Phase 3.

[3] Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.

[4] Professional Office (located on Main Street).

A comparison of the land uses associated with the Revised Project with the Originally Proposed Project is illustrated in Table 2 As Table 2 indicates, the most substantial changes associated with the Revised Project include elimination of the originally proposed hotel, a 14 percent reduction in the amount of office space, and 10 percent reduction in the amount of retail. Overall the total square footage of the development would decrease by 22 percent from 1,857,440 to 1,454,069, resulting in a 22 percent reduction in the FAR from 1.8 to 1.4. The number of residential units would be unchanged.



I:\ArcGIS\K\KIL-03 SDCorporateCenter\Map\ENV\Misc\Fig1_SitePlan.indd -RK

Revised Project

ONE PASEO

Figure 1

Table 2. Land Use Comparison of the Originally Proposed Project with Revised Project (Gross Floor Area)

	Commercial Retail[1] (Square Feet)		Commercial Office[3] (Square Feet)		Hotel (Square Feet)	Multi-Family Residential (Dwelling Units)		Total	
Project	**Retail**	**Cinema[2]**	**Corporate**	**Professional**		**Units**	**Square Feet**	**Square Feet**	**FAR**
Originally Proposed Project	220,000	50,000	535,600	21,840	100,000	608	930,000	1,857,440	1.8
Revised Project	198,500	48,000	471,000	21,840	0	608	714,729	1,454,069	1.4
Net Change with Revised Project	**-21,500**	**-2,000**	**-64,600**	**0**	**-100,000**	**0**	**-206,431**	**-403,371**	**-0.4**

[1] Gross Floor Area calculations per Land Development Code.
[2] Gross square feet
[3] Cinema of up to 1,200 seats.
[4] Professional Office (located on Main Street).

The City of San Diego (City) prepared and approved a Water Supply Assessment Report (WSA) for the project on September 6, 2011. The WSA used the Water Department's unit factors (per employee, per dwelling unit, per building square footage, etc) to estimate the potable demands of the proposed development. The purpose of the WSA was to determine the average annual amount of potable water consumed by the proposed development. The WSA presented potable water demands for the Originally Proposed Project based on proposed commercial space, residential units, and a hotel and approved a total water demand of 233 acre-feet/year (AFY). The approved WSA noted that 86 AFY was planned for the Originally Proposed Project in the City's 2010 Urban Water Management Plan (UWMP), resulting in 147 AFY supplied from the Water Authority's Accelerated Forecasted Growth supply. As indicated earlier, the project applicant has revised the project to reduce the overall intensity and density. The potable demands for the Originally Proposed Project and Revised Project are summarized in Table 3.

Table 3. Project Demand Comparison

Land Use	**Project Units**	**Unit Demand**	**Potable Demand**	
Originally Proposed Project				
Residential Units	608 units	198 gpd/unit	120,129 gpd	135 AFY
Commercial-Office	536,000 sq. ft.	86 gpd/1,000 sq ft	46,337 gpd	52 AFY
Commercial-Retail	270,000 sq. ft.	86 gpd/1,000 sq ft	23,342 gpd	26 AFY
Hotel	150 rooms	95 gpd/room	14,250 gpd	16 AFY
Landscaping	2.30 acres	1,774 gpd/acre	4,080 gpd	5 AFY
Project Total			***208,138 gpd***	***233 AFY***
Revised Project				
Residential Units	608 units	198 gpd/unit	120,129 gpd	135 AFY
Commercial-Office	484,000 sq. ft.	86 gpd/1,000 sq ft	41,624 gpd	47 AFY
Commercial-Retail	246,500 sq. ft.	86 gpd/1,000 sq ft	21,310 gpd	24 AFY
Hotel	0 rooms	0 gpd/room	0 gpd	0 AFY
Landscaping	4.98 acres	1,950 gpd/acre	9,707 gpd	11 AFY
Revised Project Total			***192,770 gpd***	***216 AFY***
Net Change			***-15,368 gpd***	***-17 AFY***
Percent Reduction				***7.4 %***
City's 2010 UWMP Planned Demand				***86 AFY***
Planned Demand from Water Authority's Accelerated Forecasted Growth				***130 AFY***
Net Unanticipated Demands				***0 AFY***

Note: Originally Proposed Project demands from Table 3-1 of approved WSA. Revised Project landscaping demand from Nowell & Associates Landscape Architecture, Inc. Applicant proposes to include advanced conservation measures with a water demand reduction of 5% for commercial uses and 7.5% for residential use, as identified in the approved WSA.

As illustrated in Table 3, the Revised Project would reduce potable water demands by approximately 7 percent (15,368 gpd or 17 AFY) based on reductions in commercial space and elimination of the hotel. The total potable water demand for the Revised Project would be 192,770 gpd or 216 AFY, which is less than the potable water demand supported by the approved WSA. Table 3 of this addendum replaces Table 3-1 of the Project WSA.
The SANDAG Series 12 2050 Regional Growth Forecast did not include the level of development of the proposed Project. The difference between the planned and proposed Project demands are accounted for in the San Diego County Water Authority's (Water Authority) 2010 UWMP accelerated forecasted growth demand increment.

Section 7 of the Project WSA documents the availability of sufficient supplies from the City. Tables 7-1, 7-2, and 7-3 of the WSA have been updated and replaced by Tables 4, 5, and 6 below to reflect the Revised Project demands and to include the planned supply from the Water Authority's Accelerated Forecasted Growth demand increment.

Table 4. Projected Supply and Demand Comparison – Normal Year (AFY) (WSA Table 7-1)

	2015	**2025**	**2025**	**2030**	**2035**
City Supply Totals	240,472	260,211	276,375	288,481	289,860
Water Authority's Accelerated Forecasted Growth Supply	130	130	130	130	130
City Demand Totals	240,472	260,211	276,375	288,481	289,860
Revised Project Demand Difference (proposed minus planned)	130	130	130	130	130
Difference (supply minus demands)	***0***	***0***	***0***	***0***	***0***

Table 5. Projected Single Dry Year Supply and Demand Comparison (AFY) (WSA Table 7-2)

	2015	**2025**	**2025**	**2030**	**2035**
City Supply Totals	255,040	276,526	293,896	307,230	318,586
Water Authority's Accelerated Forecasted Growth Supply	130	130	130	130	130
City Demand Totals	255,040	276,526	293,896	307,230	318,586
Revised Project Demand Difference (proposed minus planned)	130	130	130	130	130
Difference (supply minus demands)	***0***	***0***	***0***	***0***	***0***

Table 6. Projected Supply and Demand Comparison During Multiple Dry Year Period ending in 2035 (AFY) (WSA Table 7-3)

Multiple Dry Year		**2015**	**2025**	**2025**	**2030**	**2035**
First year supply	City Supply Totals	257,587	278,451	296,319	309,230	320,382
	Water Authority's Accelerated Forecasted Growth Supply	130	130	130	130	130
	City Demand Totals	257,587	278,451	296,319	309,230	320,382
	Revised Project Demand Difference (proposed minus planned)	130	130	130	130	130
	Difference (supply minus demands)	***0***	***0***	***0***	***0***	***0***
Second year supply	City Supply Totals	267,323	288,723	306,726	320,467	332,038
	Water Authority's Accelerated Forecasted Growth Supply	130	130	130	130	130
	City Demand Totals	267,323	288,723	306,726	320,467	332,038
	Revised Project Demand Difference (proposed minus planned)	130	130	130	130	130
	Difference (supply minus demands)	***0***	***0***	***0***	***0***	***0***
Third year supply	City Supply Totals	281,466	303,004	322,166	334,720	346,823
	Water Authority's Accelerated Forecasted Growth Supply	130	130	130	130	130
	City Demand Totals	281,466	303,004	322,166	334,720	346,823
	Revised Project Demand Difference (proposed minus planned)	130	130	130	130	130
	Difference (supply minus demands)	***0***	***0***	***0***	***0***	***0***

The Revised Project demand difference listed in the tables is the difference between proposed demand (Revised Project) and planned demand (demand included in the City's UWMP), with 130 AFY of demand being added as part of the development increase. Tables 4, 5, and 6 illustrate that the increase in demand is being supplied by the Water Authority's Accelerated Growth Forecast.

The Water Authority's 2010 UWMP includes the Accelerated Forecasted Growth demand increment in its baseline regional demands (Water Authority UWMP Table 2-2) and also in its regional demands adjusted for SBx7-7 conservation (Water Authority UWMP Table 2-5). The Water Authority UWMP documents that it has sufficient supplies to meet forecasted demands during normal years (Water Authority UWMP Table 9-1) and during a single dry year period (Water Authority UWMP Table 9-2). During multiple dry years, potential supply shortages will be handled through management actions (Water Authority UWMP Tables 9-3 though 9-7) in accordance with the Water Authority's Water Shortage and Drought Response Plan.

QSA Litigation Update

The Water Supply Assessment references litigation associated with the 2003 approval by numerous Southern California water agencies, including the San Diego County Water Authority, of various agreements collectively referred to as the Quantification Settlement Agreement (QSA). Among other terms, the QSA includes the transfer of conserved water from the Imperial Irrigation District to the Water Authority. As discussed in Section 5.11 of Final EIR, the Water Authority is a wholesale water supplier to 24 member agencies, including the City. The following is an update on the status of the QSA litigation.

On November 5, 2003, the Imperial Irrigation District (IID) filed a validation action in Imperial County Superior Court, seeking a judicial determination that 13 agreements associated with the IID/SCDWA water transfer and the QSA are valid, legal and binding. Other lawsuits also were filed contemporaneously challenging the execution, approval and implementation of the QSA on various grounds. All of the QSA cases were coordinated in the Sacramento Superior Court. A final judgment invalidating 11 of the 13 agreements in phase 1 of the trial was entered on February 11, 2010, and subsequently appealed. On December 7, 2011 the Court of Appeal issued its opinion reversing the judgment and remanding to the trial court for further proceedings. The appellate Court decision resolved many issues in the case, including the validity and constitutionality of the QSA. (See *Quantification Settlement Agreement Cases* (2011) 201 Cal.App.4th 758.) On June 4, 2013, the Sacramento Superior Court upheld the validity of the QSA in its entirety and rejected all legal challenges. It is unknown at this time whether the ruling will be appealed. It is the stated intent of the Water Authority to vigorously defend the QSA.

Water transfers pursuant to the QSA have not been interrupted during the decade of QSA litigation. The water transfers from Imperial Irrigation District to the Water Authority under the QSA began in 2003 with an initial transfer of 10,000 acre feet. The Water Authority received increasing amounts of transfer water each year according to a delivery schedule. In 2010, the Water Authority received 70,000 acre feet. The quantities of transferred water will increase annually to 200,000 acre feet by 2021 and then remain fixed for the duration of the transfer agreement, which has an initial term of 45 years with a provision for extending the term for an additional 30 years. The QSA is described in greater detail in Section 4.2 of the CWA UWMP. [1]

With regard to the QSA litigation and its potential effect on future supplies, the WSA indicated that the impact of the adverse QSA ruling by the Superior Court, if any, could not be determined at that time. As described above, the lower court has since been reversed by the court of appeal, which ruled that the QSA was not invalid for the reasons cited by the lower court. At no time during the QSA litigation have water transfers been impeded, delayed, or reduced by judicial intervention. The pendency of the QSA litigation is not expected to adversely impact the continuing transfers to the Water Authority from Imperial Irrigation District. Moreover, the litigation does not render impossible the City's ability to confidently determine the availability of anticipated future water sources.

As outlined in Section 4 of the CWA UMWP and EIR Section 5.11, following the drought years of 1987 through 1992, the Water Authority began aggressively taking actions to diversify the region's water supply sources. In addition to the QSA, as a means of diversifying regional supplies, the Water Authority is under contract to purchase up to 56,000 acre feet of water annually from the Carlsbad Desalination Project presently under construction at the site of the Encina Power Station located in the City of Carlsbad. In addition, the Water Authority is also exploring the development of two other regional seawater desalination projects, including a regional facility located on Camp Pendleton and a binational seawater project in Rosarito, Mexico.

The Metropolitan Water District (MWD) also continues to diversify, including program development within the CRA, SWP, Central Valley transfers programs, conservation, LRP (groundwater recovery, recycling, desalination), and groundwater. MWD's mix of imported and

---

[1] The CWA UWMP can be found at: http://www.sdcwa.org/sites/default/files/files/water-management/2010UWMPfinal.pdf.

local water resources available to provide long-term supplies, including a planning buffer to address potential future demand and supply fluctuations are outlined in its 2010 Integrated Resources Plan. See EIR Section 5.11 for further discussion of diversified water sources and conservation strategies. Both CWA and MWD have contingency plans/scenarios for shortages. In the unlikely event of a QSA water transfer interruption, or the disruption of any single water source, through the diversity of the region's water resources it is expected that adequate water supplies will continue to be available for the proposed development.

Conclusion

As discussed above, we conclude that the Revised Project would not result in any new environmental impacts related to water supply. In fact, the Revised Project results in a 7 percent reduction in water demands, and would have adequate water supply, as noted in the approved WSA and this addendum.