Air Quality Analysis for The Glen at Scripps Ranch Project, San Diego, California Project #264823

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TABLE OF CONTENTS

1.0 Summary 1

2.0 Introduction and Project Description 1

3.0 Regulatory Framework 2

3.1 Federal Regulations 6

3.2 State Regulations 9

3.3 Toxic Air Contaminants 9

3.4 State Implementation Plan 14

3.5 The California Environmental Quality Act 14

3.6 San Diego Air Pollution Control District 14

4.0 Environmental Setting 15

4.1 Geographic Setting 15

4.2 Climate 15

4.3 Existing Air Quality 16

5.0 Thresholds of Significance 23

5.1 California Air Resources Board 23

5.2 City of San Diego 24

5.3 Public Nuisance Law (Odors) 25

6.0 Air Quality Assessment 25

6.1 Construction-related Air Quality Effects 26

6.2 Operation-related Emissions 29

6.3 Conformance with Regional Plans and City Criteria 35

7.0 Conclusions and Recommendations 37

8.0 References Cited 38

TABLE OF CONTENTS (cont.)

FIGURES

1: Regional Location 3
2: Aerial Photograph of Project and Vicinity 4
3: Site Plan 5
4: Link and Receptor Network for a Single Intersection with Dedicated Left-turn Lanes 33

TABLES

1: Ambient Air Quality Standards 10
2: Ambient Air Quality Summary—San Diego Air Basin 17
3: Summary of Air Quality Measurements Recorded at the San Diego—Overland Avenue and Union Street Monitoring Stations 20
4: Air Quality Impact Analysis Trigger Levels 25
5: Construction Equipment Parameters 27
6: Summary of Worst-Case Construction Emissions 29
7: Project Buildout (Year 2016) Average Daily Emissions to the SDAB 31
8: Maximum Intersection CO Concentrations 34

ATTACHMENTS

1: CalEEMod Input/Output Files – Construction and Operation
2: CALINE4 Input/Output

1.0 Summary

This report evaluates potential local and regional air quality impacts associated with The Glen at Scripps Ranch project. The proposed Glen at Scripps Ranch project would construct a continuing care retirement community consisting of 400 non-acute assisted living units, 50 acute assisted living units (16 of which are memory care units), and 60 skilled nursing beds on a 53-acre site located at 10455 Pomerado Road within the Scripps Miramar Ranch Community Plan area in the city of San Diego, California.

Future emissions due to construction and operation of the proposed project are projected to be less than the applicable significance thresholds for all pollutants, and construction and operational impacts would be less than significant. Impacts related to carbon monoxide (CO) hot spots and diesel particulate matter would also be less than significant. Additionally, the project would not conflict with the Regional Air Quality Strategy (RAQS) or State Implementation Plan (SIP). All air quality impacts would be mitigated to a level less than significant.

2.0 Introduction and Project Description

The purpose of this report is to assess potential short- and long-term local and regional air quality impacts resulting from construction and operation of the proposed project.

Air pollution affects all southern Californians. Effects can include the following:

- Increased respiratory infections
- Increased discomfort
- Missed days from work and school
- Increased mortality

Polluted air also damages agriculture and our natural environment.

The proposed project is located within the San Diego Air Basin (SDAB), one of 15 air basins that geographically divide the state of California. The SDAB is currently classified as a federal and state non-attainment area for ozone and a state non-attainment area for particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5}$), and ozone, and a federal maintenance area for carbon monoxide (CO).

Air quality impacts can result from the construction and operation of a project. Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two

levels: regional impacts resulting from growth-inducing development or local hot-spot effects stemming from sensitive receivers being placed close to highly congested roadways. In the case of this project, the primary source of emissions would be associated with vehicle trips.

The analysis of impacts is based on state and federal ambient air quality standards and is assessed in accordance with the guidelines, policies, and standards established by the City of San Diego and the San Diego Air Pollution Control District (SDAPCD). Project compatibility with the adopted air quality plan for the area is also assessed. Measures are recommended, as required, to reduce potentially significant impacts.

2.1 Project Description

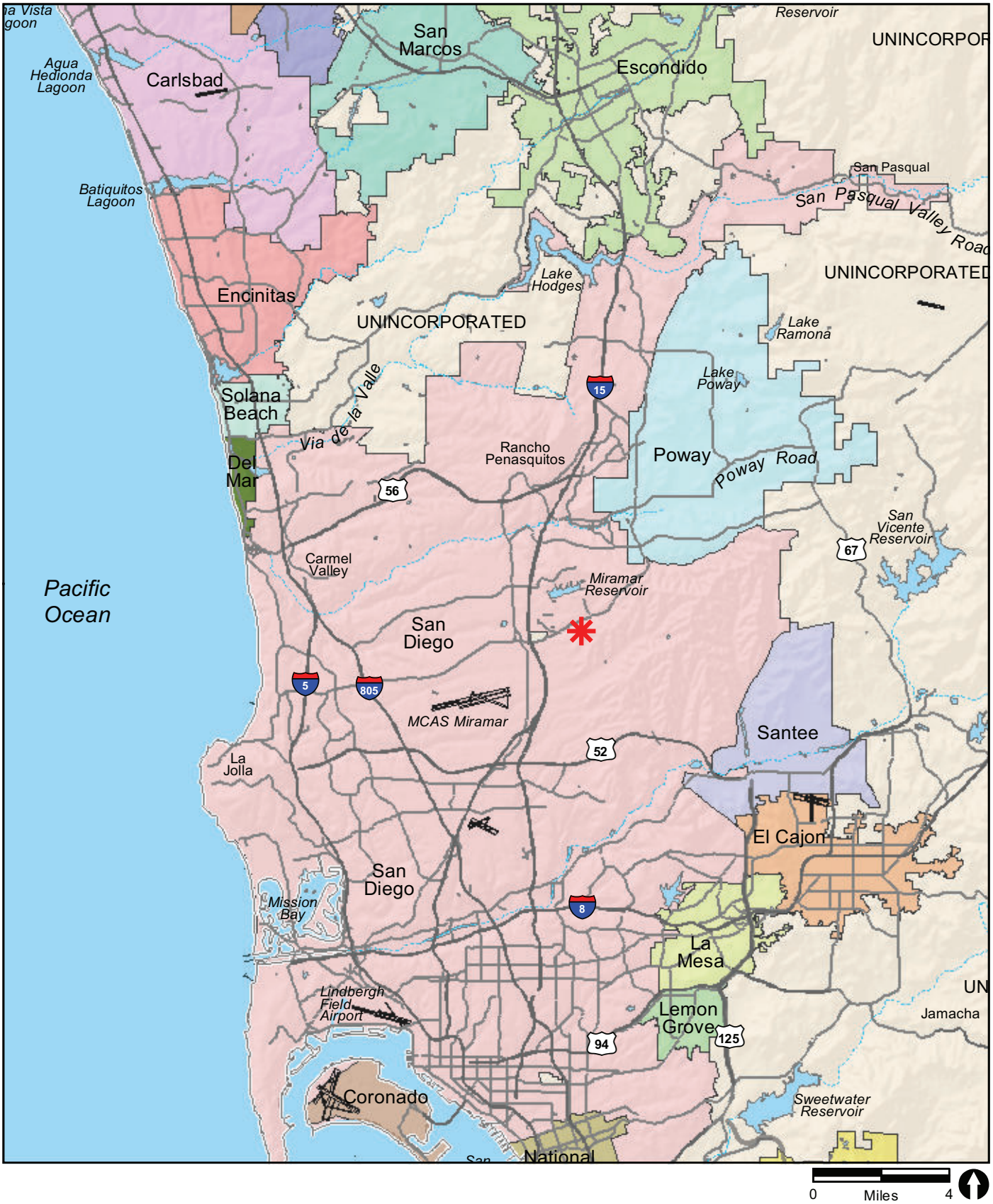
The proposed project would construct a continuing care retirement community consisting of 400 non-acute assisted living units, 50 acute assisted living units (16 of which are memory care units), and 60 skilled nursing beds on a 53 acre site located at 10455 Pomerado Road within the Scripps Miramar Ranch Community Plan area in the city of San Diego, California.

Figure 1 shows the regional location of the project site. Figure 2 shows an aerial photograph of the project site and vicinity. Figure 3 shows the proposed site plan. The 400 non-acute assisted living units include 64 villa units, 48 garden terrace units, and 288 apartment style units as shown in Figure 3. The 50 acute assisted living units and the 60 skilled nursing beds would be located within the Health Center Building. The proposed project would also include a facilities building and a common building consisting of learning centers, lecture hall, library, auditorium, fine dining, fine arts facilities, tennis court, gardens, fitness center, and pool.

3.0 Regulatory Framework

Motor vehicles are San Diego County's leading source of air pollution and the largest contributor to greenhouse gases (County of San Diego 2008). In addition to these sources, other mobile sources include construction equipment, trains, and airplanes.

Emission standards for mobile sources are established by state and federal agencies such as the California Air Resources Board (CARB) and the U.S. Environmental Protection Agency (U.S. EPA). Reducing mobile source emissions requires the technological improvement of existing mobile sources and the examination of future mobile sources such



Project Location

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FIGURE 1

Regional Location

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Project Boundary

FIGURE 2

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Aerial Photograph of Project and Vicinity

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Project Boundary

FIGURE 3

Site Plan

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as those associated with new or modification projects. The State of California has developed state-wide programs to encourage cleaner cars and cleaner fuels. Since 1996, smog-forming emissions from motor vehicles have been reduced by 15 percent and the cancer risk from exposure to motor vehicle air toxics has been reduced by 40 percent (County of San Diego 2008). The regulatory framework described below details the federal and state agencies that are in charge of monitoring and controlling mobile source air pollutants and the measures that are currently being taken to achieve and maintain healthful air quality in the SDAB.

In addition to mobile sources, stationary sources also contribute to air pollution in the SDAB. Stationary sources include gasoline stations, power plants, dry cleaners, and other commercial and industrial uses. Stationary sources of air pollution are regulated by the local air pollution control or management district, in this case the SDAPCD.

The state of California is divided geographically into 15 air basins for the purpose of managing the air resources of the state on a regional basis. Areas within each air basin are considered to share the same air masses and, therefore, are expected to have similar ambient air quality. If an air basin is not in either federal or state attainment for a particular pollutant, the basin is classified as a moderate, serious, severe, or extreme non-attainment area (there is also a marginal classification for federal non-attainment areas).

3.1 Federal Regulations

Ambient Air Quality Standards (AAQS) represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect the public health and welfare. The federal Clean Air Act (CAA) was enacted in 1970 and amended in 1977 and 1990 [42 United States Code {U.S.C.} 7401] for the purposes of protecting and enhancing the quality of the nation's air resources to benefit public health, welfare, and productivity. In 1971, in order to achieve the purposes of Section 109 of the CAA [42 U.S.C. 7409], the U.S. EPA developed primary and secondary National Ambient Air Quality Standards (NAAQS).

Seven pollutants of primary concern have been designated: ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), lead (Pb), PM_{10}, and $PM_{2.5}$. The primary NAAQS ". . . in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health . . . " and the secondary standards ". . . protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air" (42 U.S.C. 7409(b)(2)). The primary standards were established, with a margin of safety, considering long-term exposure for the most sensitive groups in the general population (i.e., children, senior citizens, and people with breathing difficulties).

In 1997, the U.S. EPA promulgated a new 8-hour ozone standard of 8 parts per hundred million (pphm) to replace the existing 1-hour standard of 12 pphm. On June 15, 2004, the portion of the SDAB containing the project site was designated a “basic” non-attainment area for the 8-hour ozone standard under Subpart 1 of Part D of the CAA. Per the U.S. EPA’s final Phase 1 rule for implementing the 8-hour ozone standard, the 1-hour ozone standard was to be revoked “in full, including the associated designations and classifications, one year following the effective date of the designations for the eight-hour NAAQS [for ozone]” (69 Federal Register [FR] 23951). As such, the 1-hour ozone standard was revoked in the SDAB on June 15, 2005. Requirements for transitioning from the 1-hour to 8-hour ozone standard are described in the final rule.

However, because of subsequent litigation concerning the Phase 1 implementation rule, the provisions of the 8-hour ozone standard Phase 1 implementation rule that placed 8-hour ozone nonattainment areas under Subpart 1, part D, Title I of the CAA instead of Subpart 2 were vacated. Consequently, on January 16, 2009, it was proposed that the SDAB be classified as “moderate” non-attainment for the 8-hour ozone standard under Subpart 2 (U.S. EPA 2009a). Under Subpart 2, consistent with Section 182 of the CAA, the period of attainment for areas designated as moderate nonattainment will be no more than six years from the effective date of designation (U.S. EPA 2009a). Because the effective date of designation for the 8-hour ozone standard was June 15, 2004, attainment of the 8-hour ozone standard for the SDAB was to occur by June 15, 2010. To date, the 1997 8-hour ozone standard has not been demonstrated.

On March 12, 2008, the U.S. EPA revised the 8-hour ozone standard to 7.5 pphm. On March 12, 2009, CARB submitted its recommendations for area designations for the revised federal 8-hour ozone standard. The recommendations are based on ozone measurements collected during 2006 through 2008. It was recommended that the SDAB be classified as nonattainment for the revised standard. The U.S. EPA was required to issue final area designations no later than March 2010. However, there was insufficient information to make these designations and the U.S. EPA extended the deadline to March 2011. However, criticism of the standards proposed in March 2008 resulted in the reconsideration of those standards by the U.S. EPA. On January 16, 2010, the U.S. EPA again proposed revision of the 8-hour ozone standards. The U.S. EPA proposed to set the primary standard at a level ranging between 6 and 7 pphm. The U.S. EPA also proposed establishing a distinct cumulative, seasonal “secondary” standard, designed to protect sensitive vegetation and ecosystems, including forests, parks, wildlife refuges and wilderness areas. The U.S. EPA proposed to set the secondary standard at a level within the range of 7–15 parts per million-hours (ppm-hours).

The U.S. EPA was to issue final standards by August 31, 2010, but to date this has not occurred. Rather, on December 8, 2010 the U.S. EPA Administrator asked the Clean Air Scientific Advisory Committee (CASAC) for further interpretation of the epidemiological and clinical studies used to make their recommendation. On January 26, 2011, the U.S. EPA

provided "charge questions" to the CASAC regarding the reconsideration of the 2008 ozone standards. The U.S. EPA reviewed the additional input CASAC provided and set the final 8-hour ozone standard to 0.070 parts per million (ppm) in July 2011. On September 2, 2011, President Obama directed the U.S. EPA to withdraw the draft ozone NAAQS. Therefore, the U.S. EPA will continue to implement the standards set during the previous administration while the ongoing five-year review of the updated science continues, which is scheduled to be completed in 2013.

The SDAB is an unclassified area for the federal PM_{10} standard and an attainment area for the federal $PM_{2.5}$ standard. On September 21, 2006, the U.S. EPA revised the NAAQS for particulate matter. The 24-hour $PM_{2.5}$ standard was strengthened from 65 micrograms per cubic meter ($\mu g/m^3$) to 35 $\mu g/m^3$. The existing standard for annual $PM_{2.5}$ of 15 $\mu g/m^3$ remained the same. In addition, the U.S. EPA also revised the standard for PM_{10}. Due to a lack of evidence linking health problems to long-term exposure to coarse particle pollution, the agency revoked the annual PM_{10} standard (effective December 17, 2006). The SDAB was classified as attainment for the new 24-hour $PM_{2.5}$ standard (U.S. EPA 2009b).

The SDAB is an attainment area for the SO_2 standards. On June 2, 2010, the U.S. EPA established a new 1-hour SO_2 standard, effective August 23, 2010. The revised standard is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The U.S. EPA also revoked both the existing 24-hour SO_2 standard of 0.14 ppm and the annual primary SO_2 standard of 0.030 ppm, effective August 23, 2010. The secondary SO_2 standard was not revised at that time, but is undergoing a separate review by the U.S. EPA. The U.S. EPA intends to complete designations for the new standards by June 3, 2012. Areas designated nonattainment would be required to submit State Implementation Plans (SIPs) within two years that demonstrate how the standard would be met. All other areas would be required to submit maintenance plans.

All areas of the state, including the SDAB, are either unclassified or in attainment of the NO_2 standards. On January 22, 2010, the U.S. EPA strengthened the 1-hour NO_2 standard to 100 parts per billion (ppb) based on the three-year average of the 98th percentile of the annual distribution of daily maximum 1-hour average concentrations. The annual NO_2 standard of 53 ppb remained unchanged. In January 2012, the U.S. EPA determined that no area in the country is violating the 2010 standards. To determine compliance with the standard, the new NO_2 rule also establishes a new ambient air monitoring network and reporting requirements. Once the expanded network of NO_2 monitors is fully deployed and three years of air quality data have been collected, the U.S. EPA intends to redesignate areas in 2016 or 2017, as appropriate, based on the air quality data from the new monitoring network.

The SDAB is an attainment area for the federal lead standard. In 2008, the U.S. EPA revised the primary standard for lead from 1.5 $\mu g/m^3$ to 0.15 $\mu g/m^3$ over a rolling three-month period, and revised the secondary standard to be identical to the primary standard. The 1978 lead NAAQS will be retained until one year after designations for the new

standards, except in current nonattainment areas. The SDAB is in attainment of the 1978 lead NAAQS. On November 8, 2011, the U.S. EPA provided designations for the revised lead standards. The SDAB is classified as unclassifiable/attainment.

The SDAB is a maintenance area for CO.

The current federal AAQS are presented in Table 1.

3.2 State Regulations

The U.S. EPA allows states the option to develop different (stricter) standards. The State of California generally has set more stringent limits on the seven criteria pollutants (see Table 1). The California Clean Air Act (CAA), also known as the Sher Bill, or Assembly Bill (AB) 2595, was signed into law on September 30, 1988, and became effective on January 1, 1989. The California CAA requires that districts implement regulations to reduce emissions from mobile sources through the adoption and enforcement of transportation control measures. The California CAA requires that a district must (South Coast Air Quality Management District [SCAQMD] 2007):

- Demonstrate the overall effectiveness of the air quality program;
- Reduce nonattainment pollutants at a rate of 5 percent per year, or include all feasible measures and expeditious adoption schedule;
- Reduce population exposure to severe nonattainment pollutants according to a prescribed schedule; and
- Rank control measures by cost-effectiveness.

The SDAB is a non-attainment area for the state ozone standards, the state PM_{10} standard, and the state $PM_{2.5}$ standard.

3.3 Toxic Air Contaminants

The public's exposure to toxic air contaminants (TACs) is a significant public 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 (AB 1807: Health and Safety Code Sections 39650–39674). The Legislature established a two-step process to address the potential health effects from TACs. The first step is the risk assessment (or identification) phase. The second step is the risk management (or control) phase of the process.

TABLE 1
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	1 Hour	0.09 ppm (180 μg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.07 ppm (137 μg/m^3)		0.075 ppm (147 μg/m^3)		
Respirable Particulate Matter (PM_{10})[8]	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 ($PM_{2.5}$)[8]	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	12 μg/m^3	15 μg/m^3	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	Non-dispersive Infrared Photometry	35 ppm (40 mg/m^3)	–	Non-dispersive Infrared Photometry
	8 Hour	9.0 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)	–	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	
Nitrogen Dioxide (NO_2)[9]	1 Hour	0.18 ppm (339 μg/m^3)	Gas Phase Chemi-luminescence	100 ppb (188 μg/m^3)	–	Gas Phase Chemi-luminescence
	Annual Arithmetic Mean	0.030 ppm (57 μg/m^3)		53 ppb (100 μg/m^3)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[10]	1 Hour	0.25 ppm (655 μg/m^3)	Ultraviolet Fluorescence	75 ppb (196 μg/m^3)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3 Hour	–		–	0.5 ppm (1300 μg/m^3)	
	24 Hour	0.04 ppm (105 μg/m^3)		0.14 ppm (for certain areas)[9]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[9]	–	
Lead[11,12]	30 Day Average	1.5 μg/m^3	Atomic Absorption	–	–	High Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 μg/m^3 (for certain areas)[11]	Same as Primary Standard	
	Rolling 3-Month Average	–		0.15 μg/m^3		
Visibility Reducing Particles[13]	8 Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	No Federal Standards		
Sulfates	24 Hour	25 μg/m^3	Ion Chroma-tography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 μg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[11]	24 Hour	0.01 ppm (26 μg/m^3)	Gas Chroma-tography			

See footnotes on next page.

SOURCE: State of California 2013.

TABLE 1
AMBIENT AIR QUALITY STANDARDS
(continued)

ppm = parts per million; ppb = parts per billion; μg/m^3 = micrograms per cubic meter; – = not applicable.

[1]California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, particulate matter (PM_{10}, $PM_{2.5}$, 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 arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m^3 is equal to or less than one. For $PM_{2.5}$, 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 the U.S. EPA for further clarification and current national 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 measurement method which can be shown to the satisfaction of the Air Resources Board 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 U.S. 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 U.S. EPA.

[8]On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 μg/m^3, as was the annual secondary standards of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[9]To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national standards are in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national standards to the California standards the units can be converted from ppb to ppm. In this case, the national standards of 53 ppb and 100 ppb are identical to 0.053 ppm and 0.100 ppm, respectively.

[10]On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[11]The ARB 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.

[12]The national standard for lead was revised on October 15, 2008 to a rolling 3-month average. The 1978 lead standard (1.5 μg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[13]In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are “extinction of 0.23 per kilometer” and “extinction of 0.07 per kilometer” for the statewide and Lake Tahoe Air Basin standards, respectively.

The California Air Toxics Program establishes the process for the identification and control of toxic air contaminants, and includes provisions to make the public aware of significant toxic exposures and for reducing risk. Additionally, the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987 and requires stationary sources to report the types and quantities of certain substances routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, ascertain health risks, notify nearby residents of significant risks, and reduce those significant risks to acceptable levels. The Children's Environmental Health Protection Act, Senate Bill (SB) 25 (Chapter 731, Escutia, Statutes of 1999), focuses on children's exposure to air pollutants. The Act requires CARB to review its air quality standards from a children's health perspective, evaluate the statewide air monitoring network, and develop any additional air toxic control measures needed to protect children's health. Locally, toxic air pollutants are regulated through the SDAPCD's Regulation XII.

Diesel-exhaust particulate matter emissions have been established as TACs. Diesel emissions generated within the county and surrounding areas pose a potential hazard to residents and visitors. Following the identification of diesel particulate matter as an air toxic in 1998, CARB has worked on developing strategies and regulations aimed at reducing the risk from diesel particulate matter. The overall strategy for achieving these reductions is found in the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (State of California 2000). A stated goal of the plan is to reduce the cancer risk statewide arising from exposure to diesel particulate matter 75 percent by 2010 and 85 percent by 2020.

A number of programs and strategies to reduce diesel particulate matter that have been implemented or are in the process of being developed include (State of California 2007, 2008):

- **The Carl Moyer Memorial Air Quality Standards Attainment Program:** This program, administered by CARB, was initially approved in February 1999 and provides incentive grants to cover an incremental portion of the cost of upgrading to cleaner-than-required engines, equipment and other sources of pollution providing early or extra emission reductions. Eligible projects include cleaner on-road, off-road, marine, locomotive, and agricultural sources. The program guidelines are revised regularly (most recently in January 2011).

- **On-road Heavy-duty Diesel Engine Reduced Emission Standards**: This rule reduces emission standards for 2007 and subsequent model year heavy-duty diesel engines (66 FR 5002, January 18, 2001).

- **On-Road Heavy-duty Diesel Engine In-Use Compliance Program**: This program requires in-use compliance testing to ensure that existing vehicles/engines meet applicable emission standards throughout their useful life.

Other programs include:

- **Off-road Mobile Sources Emission Reduction Program:** The goal of this program is to develop regulations to control emissions from diesel, gasoline, and alternative-fueled off-road mobile engines. These sources include a range of equipment, from lawn mowers to construction equipment to locomotives.

- **Heavy-duty Vehicle Inspection and Periodic Smoke Inspection Programs:** The Heavy-Duty Vehicle Inspection and Periodic Smoke Inspection Programs were established to control excessive smoke emissions and tampering from heavy-duty diesel trucks and buses.

    - **Heavy-Duty Vehicle Inspection Program:** The Heavy-Duty Vehicle Inspection Program was adopted into law in 1988 (SB 1997), with the regulations (13 CCR 2180-2189) governing this program last amended in 2007. The program requires heavy-duty trucks and buses to be inspected for excessive smoke and tampering, and engine certification label compliance. Any heavy-duty vehicle traveling in California, including vehicles registered in other states and foreign countries, may be tested. Tests are performed by CARB inspection teams at border crossings, California Highway Patrol weigh stations, fleet facilities, and randomly selected roadside locations.

    - **Periodic Smoke Inspection Program:** The Periodic Smoke Inspection Program was adopted into law in 1990 (SB 2330), with the regulations (13 CCR 2190-2194) governing this program last amended in 2007. The program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance.

- **Lower-Emission School Bus Program:** Under this program, and in coordination with the California Energy Commission and local air districts, CARB developed guidelines to provide criteria for the purchase of new school buses and the retrofit of existing school buses to reduce particulate matter emissions. In addition, Proposition 1B, which was approved by the voters on November 7, 2006, enacts the Highway Safety, Traffic Reduction, Air Quality, and Port Security Bond Act of 2006. This bond act authorizes $200 million for replacing and retrofitting school buses.

- **School Bus Idling Airborne Toxic Control Measure**: Beginning in July 2003, the CARB approved an airborne toxic control measure (ATCM) that limits school bus idling and idling at or near schools. The ATCM to limit idling is intended to reduce diesel exhaust particulate matter and other TACs and air pollutants from heavy-duty motor vehicle exhaust. The ATCM requires a driver of a school bus or vehicle, transit bus, or other commercial motor vehicle to manually turn off the bus or vehicle engine upon arriving at a school and to restart no more than 30 seconds before departing. A driver of a school bus or vehicle is subject to the same requirement when operating within 100

feet of a school and is prohibited from idling more than five minutes at each stop beyond schools, such as parking or maintenance facilities, school bus stops, or school activity destinations. A driver of a transit bus or other commercial motor vehicle is prohibited from idling more than five minutes at each stop within 100 feet of a school. Idling necessary for health, safety, or operational concerns is exempt from these restrictions.

As an ongoing process, CARB will continue to establish new programs and regulations for the control of diesel particulate emissions as appropriate. The continued development and implementation of these programs and policies will ensure that the public exposure to diesel particulate matter will continue to decline.

The SDAPCD also started sampling for TACs at the Chula Vista and El Cajon monitoring stations in the mid-1980s. Once every 12 days, 24-hour sampling is performed. Excluding diesel particulates, Chula Vista has shown a 72 percent reduction in the ambient incremental cancer risk from TACs since 1989, while El Cajon has shown a 73 percent reduction during the same period. In 2008, the estimated ambient incremental cancer risk was 135 in one million for Chula Vista and 150 in one million for El Cajon, down from 481 and 545 in one million, respectively, in 1989 (County of San Diego 2010).

As discussed below, the SDAPCD implements rules and regulations for the control of toxic air contaminants through permitting of stationary and portable sources of air pollutants.

3.4 State Implementation Plan

The SIP is a collection of documents that set forth the state's strategies for achieving the federal air quality standards. The SDAPCD is responsible for preparing and implementing the portion of the SIP applicable to the SDAB. The SDAPCD adopts rules, regulations, and programs to attain state and federal air quality standards, and appropriates money (including permit fees) to achieve these objectives.

3.5 The California Environmental Quality Act

Section 15125(d) of the California Environmental Quality Act (CEQA) Guidelines requires discussion of any inconsistencies between the project and applicable general plans and regional plans, including the applicable air quality attainment or maintenance plan (or SIP).

3.6 San Diego Air Pollution Control District

The SDAPCD is the agency that regulates air quality in the SDAB. The SDAPCD prepared the 1991/1992 Regional Air Quality Strategy (RAQS) in response to the requirements set forth in AB 2595. The draft was adopted, with amendments, on June 30, 1992 (County of

San Diego 1992). Attached, as part of the RAQS, are the Transportation Control Measures (TCMs) for the air quality plan prepared by San Diego Association of Governments (SANDAG) in accordance with AB 2595 and adopted by SANDAG on March 27, 1992, as Resolution Number 92-49 and Addendum. The required triennial updates of the RAQS and corresponding TCM were adopted in 1995, 1998, 2001, 2004, and 2009. The RAQS and TCM set forth the steps needed to accomplish attainment of state ambient air quality standards.

The SDAPCD has also established a set of rules and regulations initially adopted on January 1, 1969, and periodically reviewed and updated. These rules and regulations are available for review on the agency's Web site.

4.0 Environmental Setting

4.1 Geographic Setting

The project is located in the city of San Diego about nine miles east of the Pacific Ocean. The eastern portion of the SDAB is surrounded by mountains to the north, east, and south. These mountains tend to restrict airflow and concentrate pollutants in the valleys and low-lying areas below.

4.2 Climate

The project area, like the rest of San Diego County's coastal areas, has a Mediterranean climate characterized by warm, dry summers and mild, wet winters. The mean annual temperature for the project area is 62 degrees Fahrenheit (°F). The average annual precipitation is 13 inches, falling primarily from November to April. Winter low temperatures in the project area average about 41°F, and summer high temperatures average about 84°F. The average relative humidity is 69 percent and is based on the yearly average humidity at Lindbergh Field (Western Regional Climate Center [WRCC 2012]).

The dominant meteorological feature affecting the region is the Pacific High Pressure Zone, which produces the prevailing westerly to northwesterly winds. These winds tend to blow pollutants away from the coast toward the inland areas. Consequently, air quality near the coast is generally better than that which occurs at the base of the coastal mountain range.

Fluctuations in the strength and pattern of winds from the Pacific High Pressure Zone interacting with the daily local cycle produce periodic temperature inversions that influence the dispersal or containment of air pollutants in the SDAB. Beneath the inversion layer pollutants become "trapped" as their ability to disperse diminishes. The mixing depth is the

area under the inversion layer. Generally, the morning inversion layer is lower than the afternoon inversion layer. The greater the change between the morning and afternoon mixing depths, the greater the ability of the atmosphere to disperse pollutants.

Throughout the year, the height of the temperature inversion in the afternoon varies between approximately 1,500 and 2,500 feet above mean sea level (MSL). In winter, the morning inversion layer is about 800 feet above MSL. In summer, the morning inversion layer is about 1,100 feet above MSL. Therefore, air quality generally tends to be better in the winter than in the summer.

The prevailing westerly wind pattern is sometimes interrupted by regional “Santa Ana” conditions. A Santa Ana occurs when a strong high pressure develops over the Nevada–Utah area and overcomes the prevailing westerly coastal winds, sending strong, steady, hot, dry northeasterly winds over the mountains and out to sea.

Strong Santa Ana winds tend to blow pollutants out over the ocean, producing clear days. However, at the onset or during breakdown of these conditions or if the Santa Ana is weak, local air quality may be adversely affected. In these cases, emissions from the South Coast Air Basin (SCAB) to the north are blown out over the ocean, and low pressure over Baja California draws this pollutant-laden air mass southward. As the high pressure weakens, prevailing northwesterly winds reassert themselves and send this cloud of contamination ashore in the SDAB. When this event does occur, the combination of transported and locally produced contaminants produce the worst air quality measurements recorded in the basin.

4.3 Existing Air Quality

The project area is within the SDAB. Air quality at a particular location is a function of the kinds, amounts, and dispersal rates of pollutants being emitted into the air locally and throughout the basin. The major factors affecting pollutant dispersion are wind speed and direction, the vertical dispersion of pollutants (which is affected by inversions), and the local topography.

Air quality is commonly expressed as the number of days in which air pollution levels exceed state standards set by the CARB or federal standards set by the U.S. EPA. The SDAPCD maintains 11 air-quality monitoring stations located throughout the greater San Diego metropolitan region. Air pollutant concentrations and meteorological information are continuously recorded at these 11 stations. Measurements are then used by scientists to help forecast daily air pollution levels. Table 2 summarizes the number of days per year during which state and federal standards were exceeded in the SDAB overall during the years 2009 to 2013.

TABLE 2
AMBIENT AIR QUALITY SUMMARY – SAN DIEGO AIR BASIN

Pollutant	Average Time	California Ambient Air Quality Standards[a]	Attainment Status	National Ambient Air Quality Standards[b]	Attainment Status[c]	Maximum Concentration					Number of Days Exceeding State Standard					Number of Days Exceeding National Standard				
						2009	2010	2011	2012	2013	2009	2010	2011	2012	2013	2009	2010	2011	2012	2013
O_3	1 hour	0.09 ppm	N	N/A	N/A	0.119	0.107	0.114	0.101	0.095	8	7	5	2	2	N/A	N/A	N/A	N/A	N/A
O_3	8 hours	0.07ppm	N	0.075 ppm	N	0.098	0.088	0.093	0.084	0.083	47	21	33	25	28	24	14	10	10	7
CO	8 hours	9 ppm	A	9 ppm	A	3.24	2.46	2.44	3.61	Na	0	0	0	0	Na	0	0	0	0	Na
NO_2	1 hour	0.18 ppm	A	0.100 ppm	A	0.091	0.091	0.100	0.077	0.091	0	0	0	0	0	0	0	0	0	0
NO_2	Annual	0.030 ppm	A	0.053 ppm	A	0.021	0.021	0.020	0.020	0.019	NX	NX	NX	NX	NX	NX	NX	NX	NX	NX
PM_{10}	24 hours	50 $\mu g/m^3$	N	150 $\mu g/m^3$	U	123.0	108.0	126.0	126.0	92.0	25/146.4*	22/136.0*	23/138.5*	6/6.1*	1/6.0*	0/0.0*	0/0.0*	0/0.0*	0/0.0*	0/0.0*
PM_{10}	Annual	20 $\mu g/m^3$	N	N/A	N/A	53.9	47.0	46.2	24.3	25.4	EX	EX	EX	EX	EX	--	--	--	--	--
$PM_{2.5}$	24 hours	N/A	N/A	35 $\mu g/m^3$	A	78.4	52.2	72.0	82.9	68.1	--	--	--	--	--	4/3.4*	2/2.0*	3/3.0*	2/1.0*	3/2.0*
$PM_{2.5}$	Annual	12 $\mu g/m^3$	N	15 $\mu g/m^3$	A	12.2	10.8	15.9	14.2	10.6	EX	NX	EX	EX	NX	NX	NX	EX	NX	NX

SOURCE: State of California 2014. California Air Quality Data Statistics. California Air Resources Board Internet Site. URL http://www.arb.ca.gov/adam/welcome.html.
NOTE: Data for SO_2 and 1-hour CO were not available.
*Measured Days/Calculated Days - Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year. Data to determine federal calculated days were not available.
[a]California standards for ozone, carbon monoxide (except at Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, and PM_{10} are values that are not to be exceeded. Some measurements gathered for pollutants with air quality standards that are based upon 1-hour, 8-hour, or 24-hour averages, may be excluded if the CARB determines they would occur less than once per year on average.
[b]National standards other than for ozone and particulates, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one.
[c]A = attainment; N = non-attainment; U = Unclassifiable; N/A = not applicable; Na = data not available; NX = annual average not exceeded; EX = annual average exceeded.
ppm = parts per million, $\mu g/m^3$ = micrograms per cubic meter.

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The San Diego—Overland Avenue monitoring station, located approximately 4.5 miles southwest of the project area, is the monitoring station nearest to the project area (see Figure 2).

The San Diego—Overland Avenue monitoring station measures ozone, NO_2, PM_{10}, and $PM_{2.5}$. Table 3 provides a summary of measurements collected at the San Diego—Overland Avenue monitoring station from 2009 to 2013.

4.3.1 Ozone

Nitrogen oxides and hydrocarbons (reactive organic gases) are known as the chief "precursors" of ozone. These compounds react in the presence of sunlight to produce ozone, which is the primary air pollution problem in the SDAB. Because sunlight plays such an important role in its formation, ozone pollution, or smog, is mainly a concern during the daytime in summer months. The SDAB is currently designated a federal and state non-attainment area for ozone. During the past 20 years, San Diego had experienced a decline in the number of days with unhealthy levels of ozone despite the region's growth in population and vehicle miles traveled (County of San Diego 2009).

About half of smog-forming emissions come from automobiles. Population growth in San Diego has resulted in a large increase in the number of automobiles expelling ozone - forming pollutants while operating on area roadways. In addition, the occasional transport of smog-filled air from the SCAB only adds to the SDAB's ozone problem. Stricter automobile emission controls, including more efficient automobile engines, have played a large role in why ozone levels have steadily decreased.

In the SDAB overall, during the five-year period of 2009 to 2013, the revised 2008 national 8-hour standard of 0.075 was exceeded 24 days in 2009, 14 days in 2010, 10 days in 2011, 10 days in 2012, and 7 days in 2013. The stricter state 8-hour ozone standard of 0.07 ppm was exceeded 47 days in 2009, 21 days in 2010, 33 days in 2011, 25 days in 2012, and 28 days in 2013.

Also during the five-year period of 2009 to 2013, the state 1-hour standard (0.09 ppm) was exceeded 8 days in 2009, 7 days in 2010, 5 days in 2011, 2 days in 2012, and 2 days in 2013.

At the San Diego—Overland Avenue monitoring station, the national 8-hour ozone standard of 0.075 ppm was exceeded 1 day in 2009 and 1 day in 2011, and the state 8-hour ozone standard of 0.07 ppm was exceeded 3 days in 2009, 3 days in 2010, and 3 days in 2011. The state 1-hour ozone standard of 0.09 ppm was exceeded 2 days in 2009, 2 days in 2010, and 1 day in 2011.

TABLE 3
SUMMARY OF AIR QUALITY MEASUREMENTS RECORDED AT THE SAN DIEGO–OVERLAND AVENUE MONITORING STATION

Pollutant/Standard	2009	2010	2011	2012	2013
SAN DIEGO—OVERLAND AVENUE					
Ozone					
Days State 1-hour Standard Exceeded (0.09 ppm)	2	2	1	0	Na
Days State 8-hour Standard Exceeded (0.07 ppm)	3	3	3	0	Na
Days Federal 8-hour Standard Exceeded (0.075 ppm)	1	0	1	0	Na
Max. 1-hr (ppm)	0.105	0.100	0.097	0.050	Na
Max 8-hr (ppm)	0.082	0.074	0.087	0.047	Na
Nitrogen Dioxide					
Days State 1-hour Standard Exceeded (0.18 ppm)	0	0	0	0	Na
Max 1-hr (ppm)	0.060	0.073	0.073	0.055	Na
Annual Average (ppm)	0.014	0.013	0.012	Na	Na
PM_{10}*					
Measured Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	0	0	0	0	Na
Calculated Days State 24-hour Standard Exceeded (50 $\mu g/m^3$)	0	0	0	0	Na
Measured Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	0	0	0	0	Na
Calculated Days Federal 24-hour Standard Exceeded (150 $\mu g/m^3$)	0	0	0	0	Na
Max. Daily ($\mu g/m^3$)	50.0	33.0	47.0	22.0	Na
State Annual Average ($\mu g/m^3$)	24.9	18.7	20.3	Na	Na
Federal Annual Average ($\mu g/m^3$)	24.7	18.6	20.2	8.8	Na
$PM_{2.5}$*					
Measured Days '97 Federal 24-hour Standard Exceeded (65 $\mu g/m^3$)	0	0	0	0	Na
Calculated Days '97 Federal 24-hour Standard Exceeded (65 $\mu g/m^3$)	0	0	0	0	Na
Measured Days '06 Federal 24-hour Standard Exceeded (35 $\mu g/m^3$)	0	0	0	0	Na
Calculated Days '06 Federal 24-hour Standard Exceeded (35 $\mu g/m^3$)	0	0	0	0	Na
Max. Daily ($\mu g/m^3$)	25.1	18.7	29.9	20.0	Na
State Annual Average ($\mu g/m^3$)	10.5	8.7	9.0	Na	Na
Federal Annual Average ($\mu g/m^3$)	10.5	8.7	8.9	Na	Na

SOURCE: State of California 2014
Na = Not available. The San Diego—Overland Avenue monitoring station was closed after 2012.
*Calculated days value. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Not all of the ozone within the SDAB is derived from local sources. Under certain meteorological conditions, such as during Santa Ana wind events, ozone and other pollutants are transported from the Los Angeles Basin and combine with ozone formed from local emission sources to produce elevated ozone levels in the SDAB.

Local agencies can control neither the source nor the transportation of pollutants from outside the air basin. The SDAPCD's policy, therefore, has been to control local sources effectively enough to reduce locally produced contamination to clean air standards. Through the use of air pollution control measures outlined in the RAQS, the SDAPCD has effectively reduced O_3 levels in the SDAB.

Actions that have been taken in the SDAB to reduce O_3 concentrations include:

- **TCMs, if vehicle travel and emissions exceed attainment demonstration levels.** TCMs are strategies that will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

- **Enhanced motor vehicle inspection and maintenance program.** The smog-check program is overseen by the Bureau of Automotive Repair. The program requires most vehicles to pass a smog test once every two years before registering in the state of California. The smog-check program monitors the amount of pollutants automobiles produce. One focus of the program is identifying "gross polluters," or vehicles that exceed two times the allowable emissions for a particular model. Regular maintenance and tune-ups, changing oil, and checking tire inflation can improve gas mileage and lower air pollutant emissions. It can also reduce traffic congestion due to preventable breakdowns, further lowering emissions.

- **Air Quality Improvement Program (AQIP).** The AQIP, established in 2007 by Assembly Bill 118, is a voluntary incentive program administered by the CARB to fund clean vehicle and equipment projects, research on biofuels production, and the air quality impacts of alternative fuels, and workforce training.

4.3.2 Carbon Monoxide

The SDAB is classified as a state attainment area and as a federal maintenance area for carbon monoxide (County of San Diego 1998). Until 2003, no violations of the state standard for CO had been recorded in the SDAB since 1991, and no violations of the national standard had been recorded in the SDAB since 1989. The violations that took place in 2003 were likely the result of massive wildfires that occurred throughout the county. No violations of the state or federal CO standards have occurred since 2003. As shown in Table 2, of the available data, the state and national standards have not been exceeded in the SDAB during the five-year period from 2009 to 2013.

Small-scale, localized concentrations of CO above the state and national standards have the potential to occur at intersections with stagnation points such as those that occur on major highways and heavily traveled and congested roadways. Localized high concentrations of CO are referred to as “CO hot spots” and are a concern at congested intersections, where automobile engines burn fuel less efficiently and their exhaust contains more CO.

4.3.3 PM_{10}

PM_{10} is particulate matter with an aerodynamic diameter of 10 microns or less. Ten microns is about one-seventh of the diameter of a human hair. Particulate matter is a complex mixture of very tiny solid or liquid particles composed of chemicals, soot, and dust. Sources of PM_{10} emissions in the SDAB consist mainly of urban activities, dust suspended by vehicle traffic, and secondary aerosols formed by reactions in the atmosphere.

Under typical conditions (i.e., no wildfires) particles classified under the PM_{10} category are mainly emitted directly from activities that disturb the soil including travel on roads and construction, mining, or agricultural operations. Other sources include windblown dust, salts, brake dust, and tire wear (County of San Diego 1998). For several reasons hinging on the area’s dry climate and coastal location, the SDAB has special difficulty in developing adequate tactics to meet present state particulate standards.

The SDAB is designated as federal unclassified and state nonattainment for PM_{10}. The measured federal PM_{10} standard was exceeded once in 2007 and once in 2008 in the SDAB. The 2007 exceedance occurred on October 21, 2007, at a time when major wildfires were raging throughout the County. Consequently, this exceedance was likely caused by the wildfires and would be beyond the control of the SDAPCD. As such, this event is covered under the U.S. EPA’s Natural Events Policy that permits, under certain circumstances, the exclusion of air quality data attributable to uncontrollable natural events (e.g., volcanic activity, wild land fires, and high wind events). The 2008 exceedance did not occur during a wildfire and is not covered under this policy. The stricter state standard was exceeded a calculated number of 146.4 days in 2009, 136.0 in 2010, 138.5 in 2011, 6.1 in 2012, and 6.0 in 2013. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard, had measurements been collected every day. Particulate measurements are collected every six days.

At the San Diego—Overland Avenue monitoring station, the national and state 24-hour PM_{10} standards were not exceeded during the years 2009 through 2013.

4.3.4 $PM_{2.5}$

Airborne, inhalable particles with aerodynamic diameters of 2.5 microns or less have been recognized as an air quality concern requiring regular monitoring. Federal regulations

required that $PM_{2.5}$ monitoring begin January 1, 1999 (County of San Diego 1999). The Chula Vista monitoring station is one of five stations in the SDAB that monitors $PM_{2.5}$. Federal $PM_{2.5}$ standards established in 1997 include an annual arithmetic mean of 15 $\mu g/m^3$ and a 24-hour concentration of 65 $\mu g/m^3$. As discussed above, the 24-hour $PM_{2.5}$ standard has been changed to 35 $\mu g/m^3$. State $PM_{2.5}$ standards established in 2002 are an annual arithmetic mean of 12 $\mu g/m^3$.

The SDAB was classified as an attainment area for the previous federal 24-hour $PM_{2.5}$ standard of 65 $\mu g/m^3$ and has also been classified as an attainment area for the revised federal 24-hour $PM_{2.5}$ standard of 35 $\mu g/m^3$ (U.S. EPA 2004, 2009b). The SDAB is a non-attainment area for the state $PM_{2.5}$ standard (State of California 2005). The calculated days the federal $PM_{2.5}$ standard was exceeded was 3.4 days in 2009, 2.0 days in 2010, 3.0 days in 2011, 1.0 days in 2012, and 2.0 days in 2013 in the SDAB.

At the San Diego—Overland Avenue monitoring station, the national 24-hour $PM_{2.5}$ standards were not exceeded during the years 2009 through 2013.

4.3.5 Other Criteria Pollutants

The national and state standards for NO_2, SO_x, and lead are being met in the SDAB, and the latest pollutant trends suggest that these standards will not be exceeded in the foreseeable future. As discussed above, new standards for these pollutants have been adopted, and new designations for the SDAB will be determined in the future. The SDAB is also in attainment of the state standards for hydrogen sulfide, sulfates, vinyl chloride, and visibility-reducing particles.

5.0 Thresholds of Significance

5.1 California Air Resources Board

For purposes of assessing the significance of air quality impacts, the CARB has established guidelines, as described below.

For long-term emissions, the direct impacts of a project can be measured by the degree to which the project is consistent with regional plans to improve and maintain air quality. The regional plan for San Diego is the 1991/1992 RAQS and TCM, as revised by the triennial updates adopted in 1995, 1998, 2001, 2004, and 2009. The CARB provides criteria for determining whether a project conforms to the RAQS (State of California 1989a), which include the following:

1. Is a regional air quality plan being implemented in the project area?

2. Is the project consistent with the growth assumptions in the regional air quality plan?
3. Does the project incorporate all feasible and available air quality control measures?

5.2 City of San Diego

Thresholds used to evaluate potential impacts to air quality are based on applicable criteria in the CEQA Guidelines Appendix G, the SDAPCD regulations, and the City of San Diego's Significance Determination Thresholds for assessing potential air quality impacts under CEQA. The project would have a significant air quality impact if it would:

1. Obstruct or conflict with the implementation of the San Diego RAQS or applicable portions of the SIP.
2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.
3. Result in a 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 the release of emissions which exceed quantitative thresholds for ozone precursors).
4. Expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates.
5. Create objectionable odors affecting a substantial number of people.

Emissions resulting from implementation of the project would be due primarily to construction of the proposed project. The SDAPCD does not provide specific numerics for determining the significance of construction and operational source-related impacts. However, the SDAPCD does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (SDAPCD Rules 20.2 and 20.3). Although these trigger levels do not generally apply to construction or mobile sources, for comparative purposes these levels are used to evaluate the increased emissions that would be discharged to the SDAB if the project were approved. The AQIA screening levels are shown in Table 4.

TABLE 4
AIR QUALITY IMPACT ANALYSIS TRIGGER LEVELS

Pollutant	Emission Rate (lb/day)	Emission Rate (tons/yr)
NOx	250	40
SOx	250	40
CO	550	100
PM_{10}	100	15
Lead	3.2	0.6
ROG[1]	137	15
$PM_{2.5}$[2]	55	10

SOURCE: SDAPCD, Rule 20.2 (12/17/1998).
[1]Threshold based on levels per SCAQMD and Monterey Bay APCD which have similar federal and state attainment status as San Diego.
[2]$PM_{2.5}$ threshold obtained from the SCAQMD *Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds* (SCAQMD 2006)

5.3 Public Nuisance Law (Odors)

The State of California Health and Safety Code Sections 41700 and 41705, and SDAPCD Rule 51, commonly referred to as public nuisance law, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The provisions of these regulations do not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals. It is generally accepted that the considerable number of persons requirement in Rule 51 is normally satisfied when 10 different individuals/households have made separate complaints within 90 days. Odor complaints from a “considerable” number of persons or businesses in the area will be considered to be a significant, adverse odor impact.

Every use and operation shall be conducted so that no unreasonable heat, odor, vapor, glare, vibration (displacement), dust, smoke, or other forms of air pollution subject to SDAPCD standards shall be discernible at the property line of the parcel upon which the use or operation is located.

Therefore, any unreasonable odor discernible at the property line of the project site will be considered a significant odor impact.

6.0 Air Quality Assessment

Air quality impacts can result from the construction and operation of a project. Construction impacts are short term and result from fugitive dust, equipment exhaust, and indirect effects associated with construction workers and deliveries. Operational impacts can occur on two levels: regional impacts resulting from growth-inducing development or local effects stemming from sensitive receivers being placed in proximity to project-related emission sources.

Air emissions were calculated using the CalEEMod computer program (SCAQMD 2013). The CalEEMod program is a tool used to estimate air emissions resulting from land development projects in the state of California. The model generates emissions from three basics sources: construction sources, area sources (e.g., fireplaces and natural gas heating), and mobile sources (e.g., traffic).

Inputs to CalEEMod include such items as the air basin containing the project, land uses, trip generation rates, trip lengths, vehicle fleet mix (percentage autos, medium truck, etc.), trip distribution (i.e., percent home to work, etc.), duration of construction phases, construction equipment usage, grading areas, season, and ambient temperature, as well as other parameters. The CalEEMod data sheets contained in Attachment 1 indicate the specific inputs for each model run. Emissions of NO_x, CO, SO_x, PM_{10}, $PM_{2.5}$, and reactive organic gasses (ROGs) are calculated. Emission factors are not available for lead, and consequently, lead emissions are not calculated. The SDAB is currently in attainment of the state and federal lead standards. Furthermore, fuel used in construction equipment and most other vehicles is not leaded.

6.1 Construction-related Air Quality Effects

Construction-related activities are temporary, relatively short-term sources of air emissions. Sources of construction-related air emissions include:

- Fugitive dust from grading activities;
- Construction equipment exhaust;
- Construction-related trips by workers, delivery trucks, and material-hauling trucks; and
- Construction-related power consumption.

6.1.1 Construction

Construction-related pollutants result from dust raised during demolition and grading, emissions from construction vehicles, and chemicals used during construction. Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces are all sources of fugitive dust. Construction operations are subject to the requirements established in Regulation 4, Rules 52, 54, and 55 of the SDAPCD's rules and regulations.

Heavy-duty construction equipment is usually diesel powered. In general, emissions from diesel-powered equipment contain more nitrogen oxides, sulfur oxides, and particulate matter than gasoline-powered engines. However, diesel-powered engines generally

produce less CO and less ROG than gasoline-powered engines. Typical construction equipment for projects of this type include dozers, rollers, scrapers, dewatering pumps, backhoes, loaders, paving equipment, delivery/haul trucks, jacking equipment, welding machines, and so on.

Project construction would include the grading of 42.42 acres. Grading quantities would be balanced on-site, and there would be no import or export of soil. It was assumed that construction would begin in 2014. Specific construction phasing and equipment parameters for the proposed project are not available at this time. All CalEEMod construction defaults regarding phasing and equipment were assumed. CalEEMod divides construction into six stages: demolition, site preparation, grading, building construction, paving, and architectural coatings. It was assumed that the architectural coatings phase would occur during the last half of the building construction phase. A volatile organic compounds content of 150 grams per liter was assumed in accordance with SDAPCD Rule 67.0. There would be no demolition associated with the proposed project. Table 5 summarizes the CalEEMod construction equipment parameters for each phase.

TABLE 5
CONSTRUCTION EQUIPMENT PARAMETERS

Phase	Length (Days)	Equipment Type	Amount	Horse-power	Load Factor
Site Preparation	20	Rubber-tired Dozers	3	358	0.59
		Tractors/Loaders/Backhoes	4	75	0.55
Grading	40	Excavators	2	157	0.57
		Graders	1	162	0.61
		Rubber-tired Dozers	1	358	0.59
		Scrapers	2	356	0.72
		Tractors/Loaders/Backhoes	2	75	0.55
Building Construction	400	Cranes	1	208	0.43
		Forklifts	3	149	0.30
		Generator Sets	1	84	0.74
		Tractors/Loaders/Backhoes	3	75	0.55
		Welders	1	46	0.45
Paving	30	Pavers	2	89	0.62
		Paving Equipment	2	82	0.53
		Rollers	2	84	0.56
Architectural Coatings	200	Air Compressors	1	78	0.48

It should be noted that the equipment summarized in Table 5 represents the maximum amount of equipment that would be present on-site at one time. For example, during building construction, a crane would only be required on-site for a small portion of the 400-day period. The equipment summarized in Table 5 results in maximum daily emissions.

Standard dust control during grading operations would be implemented to reduce potential nuisance impacts and to ensure compliance with SDAPCD rules and regulations.

The following standard fugitive dust control measures are required as part of the grading permit and are considered part of the project design. They were taken into account for calculating construction emissions:

1. All unpaved construction areas shall be sprinkled with water or other acceptable SDAPCD dust control agents at least three times daily and during dust-generating activities to reduce dust emissions. Additional watering or acceptable SDAPCD dust control agents shall be applied during dry weather or windy days until dust emissions are not visible.

2. A 15-mile-per-hour speed limit on unpaved surfaces shall be enforced.

3. On dry days, dirt and debris spilled onto paved surfaces shall be swept up immediately to reduce resuspension of particulate matter caused by vehicle movement. Approach access routes to construction sites shall be cleaned daily of construction-related dirt in dry weather.

4. Disturbed areas shall be hydroseeded, landscaped, or developed as quickly as possible and as directed by the City of San Diego and/or SDAPCD to reduce dust generation.

Table 6 shows the total projected construction maximum daily emission levels for each criteria pollutant. The CalEEMod output files for construction emissions are contained in Attachment 1.

TABLE 6
SUMMARY OF WORST-CASE CONSTRUCTION EMISSIONS
(pounds per day)

Pollutant	2014	2015		SDAPCD Significance Thresholds[2]
ROG	11	88		137
NO_x	81	40		250
CO	53	47		550
SO_x[1]	0	0		250
PM_{10} Dust	18	4		–
PM_{10} Exhaust	4	2		–
PM_{10}	21	6		100
$PM_{2.5}$ Dust	10	1		–
$PM_{2.5}$ Exhaust	4	2		–
$PM_{2.5}$	13	3		55

[1]Emissions calculated by CalEEMod are for SO_2.
[2]Threshold for $PM_{2.5}$ was obtained from the SCAQMD.

Note that the emissions summarized in Table 6 are the maximum emissions for each pollutant and that they may occur during different phases of construction. They would not necessarily occur simultaneously. These are, therefore, the worst-case emissions. For assessing the significance of the air quality emissions resulting during construction of the project, the construction emissions were compared to the SDAPCD AQIA thresholds used for evaluating this project as discussed previously. The SDAPCD does not have thresholds

for $PM_{2.5}$. The threshold for $PM_{2.5}$ was obtained from the SCAQMD Final Methodology to Calculate $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds (SCAQMD 2006). As seen in Table 6, the level of maximum daily construction emissions is projected to be less than the applicable thresholds for all criteria pollutants. Construction emissions would be less than significant.

6.1.2 Fugitive Dust Nuisance Impacts

Fugitive dust is any solid particulate matter that becomes airborne directly or indirectly as a result of the activities of man or natural events (such as windborne dust), other than that emitted from an exhaust stack. Construction dust is comprised primarily of chemically inert particles that are too large to enter the human respiratory tract when inhaled.

Fugitive dust emissions vary greatly during construction and are dependent on the amount and type of activity, silt content of the soil, and the weather. Vehicles moving over paved and unpaved surfaces, demolition, excavation, earth movement, grading, and wind erosion from exposed surfaces are all sources of fugitive dust.

Fugitive dust emissions could be perceived as a nuisance to the immediate area. However, implementation of Regulation 4, Rules 52, 54, and 55, of the SDAPCD's rules and regulations, dust generated during grading operations would be reduced to a less than significant impact.

6.2 Operation-related Emissions

6.2.1 Mobile and Area Source Emissions

Mobile source emissions would originate from traffic generated by the proposed project. Area source emissions would result from activities such as the use of natural gas, fireplaces, and consumer products. In addition, landscaping maintenance activities associated with the proposed land uses would produce pollutant emissions.

CalEEMod prompts the user to enter the project's location, setting, climate zone, utility provider, and the specific land uses that will occur. For this analysis, the location was selected as the SDAB with an urban (versus rural) setting, in climate zone 13, served by SDG&E.

6.2.1.1 Estimating Vehicle Emissions

The CalEEMod model estimates vehicle emissions by first calculating trip rate, trip length, trip purpose (e.g., home to work, home to shop, home to other), and trip type percentages for each land use type, based on the land use types and quantities entered by the user in the land use module. Trip generation rates were obtained from the traffic report prepared for the proposed project (Urban Systems Associates, Inc. 2012). SANDAG's average regional

trip length of 5.8 miles was assumed (SANDAG 2012). All other CalEEMod default trip characteristics were used.

6.2.1.2 Estimating Area Source Emissions

CalEEMod estimates the emissions that would occur from the use of hearths, woodstoves, and landscaping equipment. It also estimates emissions due to use of consumer products and architectural coatings that have ROG content. The use of hearths (fireplaces) and woodstoves directly emits air pollutants from the combustion of natural gas, wood, or biomass. CalEEMod estimates emissions from hearths and woodstoves only for residential uses based on the type and size features of the residential land use inputs. By default, commercial land uses do not have any hearths or woodstoves in CalEEMod but can be added for those cases where they may occur such as in restaurants or hotels if such information is known. The proposed project would not include any hearths or woodstoves.

The use of landscape equipment emits air pollutants associated with the equipment's fuel combustion. CalEEMod estimates the number and types of equipment needed based on the number of summer days given the project's location as entered in the project characteristics module. The model defaults for landscaping equipment were used.

Architectural ROG emissions for operation are primarily associated with maintenance activities. These activities are not covered under California Green Building Standards Code (CalGreen). However, coatings sold in San Diego County must comply with Rule 67.0. As a worst-case, the upper end SDAPCD architectural coating ROG limit of 250 mg/L was used in each run.

6.2.1.3 Total Operational Emissions

A summary of the modeling results, which includes both mobile and area source emissions, is shown in Table 7. The CalEEMod data sheets files are contained in Attachment 1.

TABLE 7
PROJECT BUILDOUT (YEAR 2016) AVERAGE DAILY EMISSIONS TO THE SDAB
(pounds/day)

Season	Pollutant	Area Source Emission	Mobile Source Emission	Total Emission	SDAPCD Significance Threshold[2]
Summer	ROG	26	14	40	137
	NOx	0	12	12	250
	CO	38	55	93	550
	SOx[1]	0	0	0	250
	PM_{10}	0	8	8	100
	$PM_{2.5}$	0	2	2	55
Winter	ROG	26	16	42	137
	NOx	0	12	12	250
	CO	38	60	98	550
	SOx[1]	0	0	0	250
	PM_{10}	0	8	8	100
	$PM_{2.5}$	0	2	2	55

[1]Emissions calculated by CalEEMod are for SO_2.
[2]Threholds for ROG and $PM_{2.5}$ were obtained from the SCAQMD.

As shown in Table 7, emissions at buildout of the proposed project would be less than the applicable thresholds for all pollutants. Impacts would be less than significant.

6.2.2 Localized Carbon Monoxide Impacts

Small-scale, localized concentrations of CO above the state and national standards have the potential to occur near stagnation points of heavily traveled intersections. Localized, high concentrations of CO are referred to as “CO hot spots.” CO hot spots can occur when projects contribute traffic to area intersections. CO hot spots almost exclusively occur near intersections with LOS E or worse in combination with relatively high traffic volumes on all roadways (Garza et al. 1997, pages 4-7 and 4-8). A CO hot spot analysis was performed using CALINE (State of California 1989b) and emission rates calculated by EMFAC (State of California 2006). The CO hot spot model was prepared in accordance with the Transportation Project-Level Carbon Monoxide Protocol (Protocol) established by Caltrans (Garza et al. 1997). The procedure followed is detailed in Appendix B of the Protocol.

A micro-scale CO hot spot analysis was performed at all study area intersections projected to operate at LOS E or F in the existing, near-term, and buildout condition in order to assess potential exposure of sensitive receptors to CO concentrations above the state and national standards. The following intersections are projected to operate at LOS E or F. All other intersections analyzed in the traffic report would operate at LOS D or better.

<u>Existing + Project:</u>

- Pomerado Road at Willow Creek Road (**AM – LOS F**, PM – LOS E)

Near-Term + Project

- Pomerado Road at Willow Creek Road (**AM – LOS F**, PM – LOS E)

Year 2030 + Project

- Pomerado Road at Willow Creek Road (AM – LOS F, **PM – LOS F**)
- Pomerado Road at Scripps Ranch Boulevard (**AM – LOS F**, PM – LOS F)
- Pomerado Road at Avenida Magnifica (**AM – LOS F**, PM – LOS F)

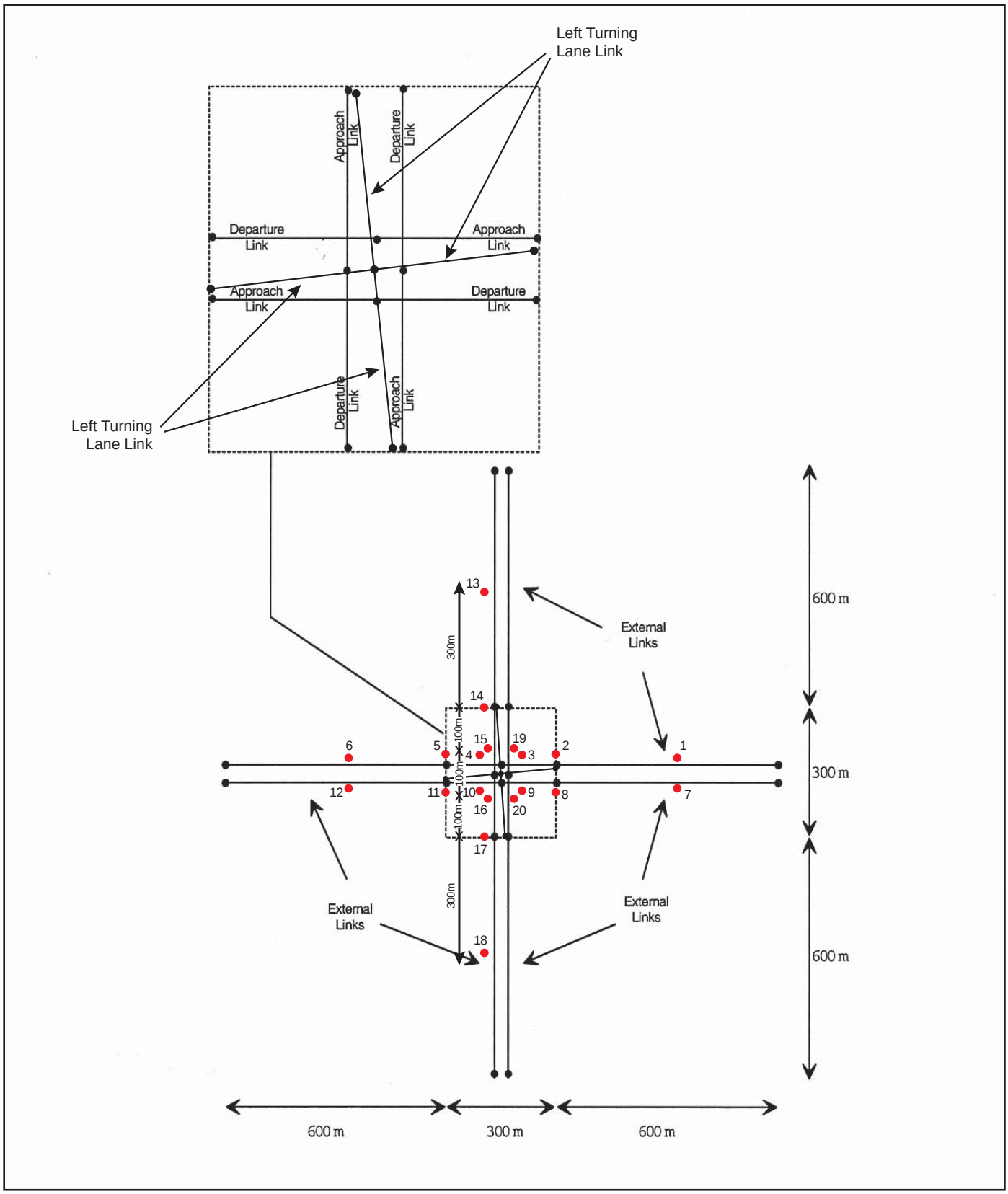
Traffic volumes, intersection configurations, and speeds were provided by the traffic report prepared for the project (Urban Systems Associates, Inc. 2012). The worst-case peak hours (either A.M. or P.M.) for each intersection were used. In the case where the A.M. and P.M. LOS values were equal, the peak hour with the longest delay was modeled. The modeled peak hours are shown in bold in the list above.

Worst-case emission factors calculated by EMFAC and used in the hot spot analysis were for year 2012. Emissions of CO would be less at buildout than the existing condition because of state and federal mandates, which will cause exhaust emissions per vehicle to continue to improve in the future as well as emission reductions that occur due to the replacement of older, more polluting vehicles in the fleet population. Using the existing worst-case emission factors along with existing, near-term, and year 2030 plus project traffic volumes result in a worst-case CO hot spot analysis.

Concentrations were calculated for 20 receptors for each identified intersection. The basic configuration of the intersections and the receptor locations for a typical intersection are illustrated in Figure 4.

Following the established policy described in the Protocol, a receptor distance of 3 meters from the edge of the roadways was used. The 3-meter distance provides worst-case CO concentration estimates. As shown in Table 3, the highest one-hour and eight-hour measured CO concentrations at the San Diego—Union Street monitoring station were 8.7 ppm and 5.18 ppm, respectively. The worst case background concentrations typically occur in the winter. With the development of cleaner technologies, background CO concentrations are expected to fall over time. Therefore, the maximum one-hour and eight-hour CO concentrations of 8.7 ppm and 5.18 ppm were used in the CO hot spot analysis as the worst-case background CO concentration. The eight-hour CO concentrations were calculated from the modeled one-hour CO concentrations using a persistence factor of 0.7, as recommended in the EPA's Guideline for Modeling Carbon Monoxide from Roadway Intersections (1992).

Table 8 presents estimates of worst-case CO concentrations at the intersections. CALINE output files are contained in Attachment 2.



● Receptors at 3m from edge of roadway and 1.8m high

● Link end point

FIGURE 4

Link and Receptor Network For a Single Intersection with Dedicated Left Turn Lanes

RECON

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TABLE 8
MAXIMUM INTERSECTION CO CONCENTRATIONS*

	Existing + Project		Near-Term + Project		Year 2030 + Project					
	Pomerado Road & Willow Creek Road		Pomerado Road & Willow Creek Road		Pomerado Road & Willow Creek Road		Pomerado Road & Scripps Ranch Boulevard		Pomerado Road & Avenida Magnifica	
Receptor	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr	1-hr	8-hr
1	10.6	6.5	10.6	6.5	10.9	6.7	10.9	6.7	10.5	6.4
2	10.6	6.5	10.6	6.5	10.8	6.7	10.8	6.7	10.4	6.4
3	10.6	6.5	10.6	6.5	10.8	6.7	10.8	6.7	10.4	6.4
4	10.4	6.4	10.5	6.4	10.8	6.7	10.8	6.7	10.3	6.3
5	10.5	6.4	10.5	6.4	10.8	6.7	10.8	6.7	10.3	6.3
6	10.8	6.7	10.9	6.7	11.0	6.8	10.9	6.7	10.5	6.4
7	10.2	6.2	10.2	6.2	11.2	6.9	10.8	6.7	10.2	6.2
8	10.3	6.3	10.3	6.3	10.8	6.7	10.4	6.4	9.9	6.0
9	10.4	6.4	10.4	6.4	10.8	6.7	10.4	6.4	10.0	6.1
10	10.3	6.3	10.3	6.3	10.8	6.7	10.4	6.4	10.0	6.1
11	10.3	6.3	10.3	6.3	10.9	6.7	10.5	6.4	10.1	6.2
12	10.5	6.4	10.5	6.4	11.0	6.8	10.6	6.5	10.2	6.2
13	9.5	5.7	9.5	5.7	9.5	5.7	9.3	5.6	9.2	5.5
14	9.6	5.8	9.6	5.8	9.6	5.8	9.3	5.6	9.2	5.5
15	9.8	6.0	9.8	6.0	9.6	5.8	9.5	5.7	9.4	5.7
16	9.6	5.8	9.6	5.8	9.6	5.8	9.4	5.7	9.3	5.6
17	9.4	5.7	9.4	5.7	9.4	5.7	9.2	5.5	9.2	5.5
18	9.7	5.9	9.7	5.9	9.3	5.6	9.0	5.4	9.0	5.4
19	9.7	5.9	9.7	5.9	9.6	5.8	9.5	5.7	9.4	5.7
20	9.5	5.7	9.5	5.7	9.6	5.8	9.4	5.7	9.3	5.6

*Assumes 8.7 ppm 1-hour and 5.18 8-hour background concentrations.

Table 8 shows that estimates of one-hour CO concentrations at the intersections would range from 9.0 to 11.2 ppm, and the eight-hour CO concentrations range from 5.4 to 6.9 ppm. These one-hour CO concentrations are below the 20 ppm state standard and the 35 ppm national standard, and these eight-hour CO concentrations are below the state's 9 ppm standard. Therefore, no direct significant localized CO impacts would occur at the intersections as a result of the proposed project. Impacts would be less than significant.

6.2.3 Toxic Air Emissions and Odors

Impacts due to exposure of sensitive receptors to diesel particulates from roadway traffic have the potential to occur if new sensitive land uses are placed within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural road with 50,000 vehicles per day. The project area is not located within 500 feet of a freeway or heavily traveled roadway; therefore, impacts due to exposure to mobile source air toxics would be less than significant.

The proposed project is residential and is not anticipated to generate objectionable odors or be located adjacent to a known odor generator. Odor impacts due to on-site sources would be less than significant.

6.3 Conformance with Regional Plans and City Criteria

6.3.1 California Air Resources Board

1. Is a regional air quality plan being implemented in the project area?

The project site is in the city of San Diego, which is within the SDAB. The 1991/1992 RAQS (and triennial updates) are implemented by SDAPCD throughout the air basin. Therefore, the project fulfills the first criteria from the CARB guidelines described in Chapter 5.0, Thresholds of Significance.

2. Is the project consistent with the growth assumptions in the regional air quality plan?

As noted above, the RAQS and TCM plan developed by the SDAPCD and SANDAG set forth the steps needed to accomplish attainment of state and federal ambient air quality standards. The basis for these plans is the distribution of population in the region as projected by SANDAG. Growth forecasting is based in part on the land uses established by the San Diego General Plan.

The proposed project is within an area designated for University use in the Scripps Miramar Ranch Community Plan. The project would amend the existing Conditional Use Permit to allow for the proposed development, and would require a redesignation from University to Institutional use in the Scripps Miramar Ranch Community Plan. The Land Development Code Trip Generation Manual indicates that University uses generate 100 trips per acre. Thus, the project, if developed as a University use, would generate approximately 5,300 trips. This is greater than the proposed trip generation of 1,880 average daily trips. Therefore, the project would not result in traffic generation in excess of specific community plan allocations. Because the project would result in fewer trips, project traffic would be accounted for in the SANDAG growth forecast. Therefore, it would not conflict with the goals and strategies in the RAQS or TCM. Impacts would be less than significant.

3. Does the project incorporate all feasible and available air quality control measures?

The project would be required to use best management practices to decrease emissions from construction. The level of impacts would be less than significant.

6.3.2 City of San Diego

1. Would the project obstruct or conflict with the implementation of the San Diego RAQS or applicable portions of the SIP?

As discussed above, the proposed project would not require a change in the growth assumptions upon which the RAQS and SIP are based. Therefore, the project would not conflict with the RAQS or SIP, and impacts associated with conflicts with regional air quality plans would be less than significant.

2. Would the project result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation?

The SDAB does not comply with the federal and/or state criteria pollutant standards for ozone, PM_{10}, and $PM_{2.5}$. However, the project would not introduce any stationary sources of emissions and would not contribute to an exceedance of air quality standards.

Emissions due to construction and operation of the project are discussed below.

3. Would the project result in a 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)?

The region is classified as attainment for all criterion pollutants except ozone, PM_{10}, and $PM_{2.5}$. The SDAB is non-attainment for the 8-hour federal and state ozone standards. Ozone is not emitted directly, but is a result of atmospheric activity on precursors. Nitrogen oxides and hydrocarbons (ROGs) are known as the chief “precursors” of ozone. These compounds react in the presence of sunlight to produce ozone.

As discussed above, maximum daily construction emissions are projected to be less than the applicable thresholds for all criterion pollutants. Construction impacts would be less than significant.

Long-term emissions of air pollutants occur from area and mobile sources. Area-source pollutant emissions include those generated by the consumption of natural gas for space and water heating, and landscaping. Vehicle travel would generate mobile source emissions including carbon monoxide, nitrogen oxides, and hydrocarbons.

As discussed above and shown in Table 7, future emissions due to operation of the proposed project are projected to be less than the applicable significance thresholds for all pollutants and operational impacts would be less than significant.

4. Would the project expose sensitive receptors to substantial pollutant concentration including air toxics such as diesel particulates?

a. Carbon Monoxide Hot Spots

As shown in Table 8, estimated one-hour and eight-hour CO concentrations are below the state's 20 ppm and 9 ppm standards, respectively. Impacts related to CO hot spots are less than significant.

b. Diesel Particulate Matter

As noted previously, diesel particulate matter has been identified as a toxic air contaminant. The health risks associated with diesel particulate matter are those related to long-term exposures (i.e., cancer and chronic effects). With certain exceptions related to workers and other factors, long-term health risk effects to residents are generally evaluated for an exposure period of 70 years (i.e., lifetime exposure). Because risk is based on a lifetime of exposure and because construction of the proposed project would be short-term, impacts due to construction diesel particulate matter would be less than significant.

Impacts due to exposure of sensitive receptors to diesel particulates from roadway traffic have the potential to occur if new sensitive land uses are placed within 500 feet of a freeway, urban road with 100,000 vehicles per day, or rural road with 50,000 vehicles per day. The project area is not located within 500 feet of a freeway or heavily traveled roadway; therefore, impacts due to exposure to diesel particulate matter would be less than significant.

5. Would the project create objectionable odors affecting a substantial number of people?

Construction activity could generate airborne odors from exhaust emissions. However, odors generated from vehicles and/or equipment exhaust during construction would be temporary, localized, and occur at levels that would not affect people. Therefore, impacts from construction would be less than significant. The proposed project is a senior residential development, and operation would not create objectionable odors affecting a substantial number of people. Odor impacts would be less than significant.

7.0 Conclusions and Recommendations

As discussed above, future emissions due to construction and operation of the proposed project are projected to be less than the applicable significance thresholds for all pollutants, and construction and operational impacts would be less than significant. Additionally, impacts related to CO hot spots and diesel particulate matter would be less than significant.

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ATTACHMENTS

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ATTACHMENT 1

CalEEMod Input/Output Files – Construction and Operation

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Summer

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6054 The Glen at Scripps Ranch

San Diego County APCD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	60.00	Bed	4.91	33,115.00	0
Congregate Care (Assisted Living)	50.00	Dwelling Unit	4.09	96,411.00	143
Congregate Care (Assisted Living)	400.00	Dwelling Unit	33.42	694,323.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2016
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 400 Assisted Living Units - Modeled as Congregate Care
50 Acute Assisted Living Units - Modeled as Congregate Care
60 Skilled Nursing Beds - Modeled as Hospital Beds
Gross Floor Area = 823,850 sf
Grading = 42.42 acres

Construction Phase - approximately 2 years construction

Grading -

Architectural Coating - SDAPCD VOC content limit = 150 g/L

Vehicle Trips - Trip rates obtained from traffic report prepared for project (Urban Systems Associates, Inc. 2012)
Average SANDAG trip length = 5.8 miles
Trips characteristics for skilled nursing beds assumed to be the same as trip characterics for congregate care

Woodstoves - No woodstoves or fireplaces

Area Coating - SDAPCD VOC content limit = 150 g/L

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	55.00	200.00
tblConstructionPhase	NumDays	740.00	400.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	7/15/2016	10/9/2015
tblConstructionPhase	PhaseStartDate	10/10/2015	1/5/2015
tblConstructionPhase	PhaseStartDate	3/29/2014	3/31/2014
tblConstructionPhase	PhaseStartDate	2/1/2014	2/3/2014

tblConstructionPhase	PhaseStartDate	10/10/2015	10/12/2015
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	247.50	0.00
tblFireplaces	NumberNoFireplace	45.00	0.00
tblFireplaces	NumberWood	157.50	0.00
tblLandUse	LandUseSquareFeet	42,945.45	33,115.00
tblLandUse	LandUseSquareFeet	50,000.00	96,411.00
tblLandUse	LandUseSquareFeet	400,000.00	694,323.00
tblLandUse	LotAcreage	0.99	4.91
tblLandUse	LotAcreage	3.13	4.09
tblLandUse	LotAcreage	25.00	33.42
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TTP	16.10	41.60
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TTP	19.00	39.60
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TTP	64.90	18.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	2.20	3.78
tblVehicleTrips	ST_TR	8.14	3.00
tblVehicleTrips	SU_TR	2.44	3.78
tblVehicleTrips	SU_TR	7.19	3.00
tblVehicleTrips	WD_TR	2.74	3.78

tblVehicleTrips	WD_TR	11.81	3.00
tblWoodstoves	NumberCatalytic	22.50	0.00
tblWoodstoves	NumberNoncatalytic	22.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	10.6039	80.8213	52.6814	0.0746	18.2141	3.8806	21.3531	9.9699	3.5701	12.8577	0.0000	7,149.9438	7,149.9438	1.9473	0.0000	7,190.8375
2015	87.7358	40.3077	47.0823	0.0845	3.6607	2.4601	6.1208	0.9782	2.3238	3.3020	0.0000	7,892.7784	7,892.7784	0.9124	0.0000	7,911.9387
Total	**98.3396**	**121.1290**	**99.7637**	**0.1592**	**21.8749**	**6.3406**	**27.4739**	**10.9481**	**5.8939**	**16.1597**	**0.0000**	**15,042.7223**	**15,042.7223**	**2.8597**	**0.0000**	**15,102.7761**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	10.6003	80.7473	52.6341	0.0746	18.2141	3.8770	21.3502	9.9699	3.5669	12.8551	0.0000	7,147.4583	7,147.4583	1.9455	0.0000	7,188.3146
2015	87.7320	40.2778	47.0634	0.0845	3.6607	2.4579	6.1186	0.9782	2.3217	3.2999	0.0000	7,890.0527	7,890.0527	0.9117	0.0000	7,909.1992
Total	**98.3323**	**121.0251**	**99.6974**	**0.1591**	**21.8749**	**6.3349**	**27.4689**	**10.9481**	**5.8886**	**16.1550**	**0.0000**	**15,037.5110**	**15,037.5110**	**2.8573**	**0.0000**	**15,097.5138**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**7.4029e-003**	**0.0858**	**0.0664**	**0.0314**	**0.0000**	**0.0899**	**0.0183**	**0.0000**	**0.0901**	**0.0290**	**0.0000**	**0.0346**	**0.0346**	**0.0850**	**0.0000**	**0.0348**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Energy	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
Mobile	13.5909	11.5843	55.4869	0.1111	7.3845	0.1477	7.5322	1.9712	0.1358	2.1070		9,678.1869	9,678.1869	0.4198		9,687.0030
Total	**39.5043**	**13.1656**	**93.8362**	**0.1201**	**7.3845**	**0.4406**	**7.8251**	**1.9712**	**0.4286**	**2.3999**	**0.0000**	**11,161.7763**	**11,161.7763**	**0.5151**	**0.0260**	**11,180.6458**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Energy	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
Mobile	13.5909	11.5843	55.4869	0.1111	7.3845	0.1477	7.5322	1.9712	0.1358	2.1070		9,678.1869	9,678.1869	0.4198		9,687.0030
Total	**39.5043**	**13.1656**	**93.8362**	**0.1201**	**7.3845**	**0.4406**	**7.8251**	**1.9712**	**0.4286**	**2.3999**	**0.0000**	**11,161.7763**	**11,161.7763**	**0.5151**	**0.0260**	**11,180.6458**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/6/2014	1/31/2014	5	20	
2	Grading	Grading	2/3/2014	3/28/2014	5	40	
3	Building Construction	Building Construction	3/31/2014	10/9/2015	5	400	
4	Architectural Coating	Architectural Coating	1/5/2015	10/9/2015	5	200	
5	Paving	Paving	10/12/2015	11/20/2015	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	335.00	54.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2856	0.0902	0.9885	1.8700e-003	0.1479	1.2400e-003	0.1491	0.0392	1.1300e-003	0.0404		167.6262	167.6262	9.2600e-003		167.8207
Total	**0.2856**	**0.0902**	**0.9885**	**1.8700e-003**	**0.1479**	**1.2400e-003**	**0.1491**	**0.0392**	**1.1300e-003**	**0.0404**		**167.6262**	**167.6262**	**9.2600e-003**		**167.8207**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2861	57.5669	42.9215	0.0391		3.1349	3.1349		2.8841	2.8841	0.0000	4,152.0786	4,152.0786	1.2270		4,177.8453
Total	**5.2861**	**57.5669**	**42.9215**	**0.0391**	**18.0663**	**3.1349**	**21.2011**	**9.9307**	**2.8841**	**12.8147**	**0.0000**	**4,152.0786**	**4,152.0786**	**1.2270**		**4,177.8453**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2856	0.0902	0.9885	1.8700e-003	0.1479	1.2400e-003	0.1491	0.0392	1.1300e-003	0.0404		167.6262	167.6262	9.2600e-003		167.8207
Total	**0.2856**	**0.0902**	**0.9885**	**1.8700e-003**	**0.1479**	**1.2400e-003**	**0.1491**	**0.0392**	**1.1300e-003**	**0.0404**		**167.6262**	**167.6262**	**9.2600e-003**		**167.8207**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**8.6733**	**3.8792**	**12.5525**	**3.5965**	**3.5689**	**7.1654**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3174	0.1003	1.0983	2.0800e-003	0.1643	1.3800e-003	0.1657	0.0436	1.2600e-003	0.0448		186.2513	186.2513	0.0103		186.4674
Total	**0.3174**	**0.1003**	**1.0983**	**2.0800e-003**	**0.1643**	**1.3800e-003**	**0.1657**	**0.0436**	**1.2600e-003**	**0.0448**		**186.2513**	**186.2513**	**0.0103**		**186.4674**

3.3 Grading - 2014

Mitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.8418	80.6470	51.5358	0.0617		3.8756	3.8756		3.5656	3.5656	0.0000	6,548.8200	6,548.8200	1.9353		6,589.4602
Total	**6.8418**	**80.6470**	**51.5358**	**0.0617**	**8.6733**	**3.8756**	**12.5490**	**3.5965**	**3.5656**	**7.1621**	**0.0000**	**6,548.8200**	**6,548.8200**	**1.9353**		**6,589.4602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3174	0.1003	1.0983	2.0800e-003	0.1643	1.3800e-003	0.1657	0.0436	1.2600e-003	0.0448		186.2513	186.2513	0.0103		186.4674
Total	**0.3174**	**0.1003**	**1.0983**	**2.0800e-003**	**0.1643**	**1.3800e-003**	**0.1657**	**0.0436**	**1.2600e-003**	**0.0448**		**186.2513**	**186.2513**	**0.0103**		**186.4674**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.4203	6.8818	7.2471	0.0129	0.3585	0.1328	0.4913	0.1023	0.1221	0.2244		1,321.0371	1,321.0371	0.0134		1,321.3181
Worker	5.3157	1.6792	18.3962	0.0349	2.7520	0.0231	2.7750	0.7299	0.0211	0.7510		3,119.7098	3,119.7098	0.1724		3,123.3296
Total	**6.7359**	**8.5610**	**25.6434**	**0.0478**	**3.1104**	**0.1559**	**3.2663**	**0.8322**	**0.1432**	**0.9754**		**4,440.7469**	**4,440.7469**	**0.1858**		**4,444.6477**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8644	31.2250	18.9125	0.0268		2.2259	2.2259		2.0954	2.0954	0.0000	2,706.7114	2,706.7114	0.6882		2,721.1642
Total	**3.8644**	**31.2250**	**18.9125**	**0.0268**		**2.2259**	**2.2259**		**2.0954**	**2.0954**	**0.0000**	**2,706.7114**	**2,706.7114**	**0.6882**		**2,721.1642**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.4203	6.8818	7.2471	0.0129	0.3585	0.1328	0.4913	0.1023	0.1221	0.2244		1,321.0371	1,321.0371	0.0134		1,321.3181
Worker	5.3157	1.6792	18.3962	0.0349	2.7520	0.0231	2.7750	0.7299	0.0211	0.7510		3,119.7098	3,119.7098	0.1724		3,123.3296
Total	**6.7359**	**8.5610**	**25.6434**	**0.0478**	**3.1104**	**0.1559**	**3.2663**	**0.8322**	**0.1432**	**0.9754**		**4,440.7469**	**4,440.7469**	**0.1858**		**4,444.6477**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2278	5.8900	6.5604	0.0129	0.3584	0.0965	0.4549	0.1023	0.0887	0.1910		1,303.7194	1,303.7194	0.0113		1,303.9565
Worker	4.9356	1.5146	16.5630	0.0349	2.7520	0.0216	2.7736	0.7299	0.0198	0.7497		3,015.0282	3,015.0282	0.1580		3,018.3469
Total	**6.1634**	**7.4046**	**23.1234**	**0.0478**	**3.1104**	**0.1181**	**3.2285**	**0.8322**	**0.1085**	**0.9407**		**4,318.7476**	**4,318.7476**	**0.1693**		**4,322.3033**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6557	30.0024	18.7274	0.0268		2.1148	2.1148		1.9886	1.9886	0.0000	2,687.1096	2,687.1096	0.6742		2,701.2678
Total	**3.6557**	**30.0024**	**18.7274**	**0.0268**		**2.1148**	**2.1148**		**1.9886**	**1.9886**	**0.0000**	**2,687.1096**	**2,687.1096**	**0.6742**		**2,701.2678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.2278	5.8900	6.5604	0.0129	0.3584	0.0965	0.4549	0.1023	0.0887	0.1910		1,303.7194	1,303.7194	0.0113		1,303.9565
Worker	4.9356	1.5146	16.5630	0.0349	2.7520	0.0216	2.7736	0.7299	0.0198	0.7497		3,015.0282	3,015.0282	0.1580		3,018.3469
Total	**6.1634**	**7.4046**	**23.1234**	**0.0478**	**3.1104**	**0.1181**	**3.2285**	**0.8322**	**0.1085**	**0.9407**		**4,318.7476**	**4,318.7476**	**0.1693**		**4,322.3033**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**76.9262**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9871	0.3029	3.3126	6.9700e-003	0.5504	4.3200e-003	0.5547	0.1460	3.9600e-003	0.1500		603.0056	603.0056	0.0316		603.6694
Total	**0.9871**	**0.3029**	**3.3126**	**6.9700e-003**	**0.5504**	**4.3200e-003**	**0.5547**	**0.1460**	**3.9600e-003**	**0.1500**		**603.0056**	**603.0056**	**0.0316**		**603.6694**

3.5 Architectural Coating - 2015

Mitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4062	2.5680	1.9000	2.9700e-003		0.2207	0.2207		0.2207	0.2207	0.0000	281.1898	281.1898	0.0366		281.9587
Total	**76.9259**	**2.5680**	**1.9000**	**2.9700e-003**		**0.2207**	**0.2207**		**0.2207**	**0.2207**	**0.0000**	**281.1898**	**281.1898**	**0.0366**		**281.9587**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.9871	0.3029	3.3126	6.9700e-003	0.5504	4.3200e-003	0.5547	0.1460	3.9600e-003	0.1500		603.0056	603.0056	0.0316		603.6694
Total	**0.9871**	**0.3029**	**3.3126**	**6.9700e-003**	**0.5504**	**4.3200e-003**	**0.5547**	**0.1460**	**3.9600e-003**	**0.1500**		**603.0056**	**603.0056**	**0.0316**		**603.6694**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2210	0.0678	0.7416	1.5600e-003	0.1232	9.7000e-004	0.1242	0.0327	8.9000e-004	0.0336		135.0013	135.0013	7.0800e-003		135.1499
Total	**0.2210**	**0.0678**	**0.7416**	**1.5600e-003**	**0.1232**	**9.7000e-004**	**0.1242**	**0.0327**	**8.9000e-004**	**0.0336**		**135.0013**	**135.0013**	**7.0800e-003**		**135.1499**

3.6 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3151	25.1527	14.9643	0.0223		1.4135	1.4135		1.3004	1.3004	0.0000	2,337.7516	2,337.7516	0.6979		2,352.4079
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3151**	**25.1527**	**14.9643**	**0.0223**		**1.4135**	**1.4135**		**1.3004**	**1.3004**	**0.0000**	**2,337.7516**	**2,337.7516**	**0.6979**		**2,352.4079**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2210	0.0678	0.7416	1.5600e-003	0.1232	9.7000e-004	0.1242	0.0327	8.9000e-004	0.0336		135.0013	135.0013	7.0800e-003		135.1499
Total	**0.2210**	**0.0678**	**0.7416**	**1.5600e-003**	**0.1232**	**9.7000e-004**	**0.1242**	**0.0327**	**8.9000e-004**	**0.0336**		**135.0013**	**135.0013**	**7.0800e-003**		**135.1499**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	13.5909	11.5843	55.4869	0.1111	7.3845	0.1477	7.5322	1.9712	0.1358	2.1070		9,678.1869	9,678.1869	0.4198		9,687.0030
Unmitigated	13.5909	11.5843	55.4869	0.1111	7.3845	0.1477	7.5322	1.9712	0.1358	2.1070		9,678.1869	9,678.1869	0.4198		9,687.0030

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	189.00	189.00	189.00	354,334	354,334
Congregate Care (Assisted Living)	1,512.00	1,512.00	1512.00	2,834,670	2,834,670
Hospital	180.00	180.00	180.00	301,294	301,294
Total	1,881.00	1,881.00	1,881.00	3,490,298	3,490,298

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Hospital	5.80	5.80	5.80	18.80	41.60	39.60	73	25	2

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510118	0.073510	0.192396	0.133166	0.036737	0.005265	0.012605	0.021642	0.001847	0.002083	0.006548	0.000610	0.003471

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
NaturalGas Unmitigated	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hospital	5282.98	0.0570	0.5179	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394		621.5267	621.5267	0.0119	0.0114	625.3092
Congregate Care (Assisted Living)	6008.19	0.0648	0.5537	0.2356	3.5300e-003		0.0448	0.0448		0.0448	0.0448		706.8455	706.8455	0.0136	0.0130	711.1472
Congregate Care (Assisted Living)	751.023	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003		88.3557	88.3557	1.6900e-003	1.6200e-003	88.8934
Total		**0.1299**	**1.1409**	**0.7001**	**7.0800e-003**		**0.0897**	**0.0897**		**0.0897**	**0.0897**		**1,416.7278**	**1,416.7278**	**0.0272**	**0.0260**	**1,425.3498**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hospital	5.28298	0.0570	0.5179	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394		621.5267	621.5267	0.0119	0.0114	625.3092
Congregate Care (Assisted Living)	0.751023	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003		88.3557	88.3557	1.6900e-003	1.6200e-003	88.8934
Congregate Care (Assisted Living)	6.00819	0.0648	0.5537	0.2356	3.5300e-003		0.0448	0.0448		0.0448	0.0448		706.8455	706.8455	0.0136	0.0130	711.1472
Total		**0.1299**	**1.1409**	**0.7001**	**7.0800e-003**		**0.0897**	**0.0897**		**0.0897**	**0.0897**		**1,416.7278**	**1,416.7278**	**0.0272**	**0.0260**	**1,425.3498**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Unmitigated	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.9671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.6304					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1861	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031		66.8617	66.8617	0.0682		68.2930
Total	**25.7835**	**0.4405**	**37.6492**	**1.9600e-003**		**0.2031**	**0.2031**		**0.2031**	**0.2031**	**0.0000**	**66.8617**	**66.8617**	**0.0682**	**0.0000**	**68.2930**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.9671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.6304					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1861	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031		66.8617	66.8617	0.0682		68.2930
Total	**25.7835**	**0.4405**	**37.6492**	**1.9600e-003**		**0.2031**	**0.2031**		**0.2031**	**0.2031**	**0.0000**	**66.8617**	**66.8617**	**0.0682**	**0.0000**	**68.2930**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

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Winter

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6054 The Glen at Scripps Ranch

San Diego County APCD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hospital	60.00	Bed	4.91	33,115.00	0
Congregate Care (Assisted Living)	50.00	Dwelling Unit	4.09	96,411.00	143
Congregate Care (Assisted Living)	400.00	Dwelling Unit	33.42	694,323.00	1144

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2016
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - 400 Assisted Living Units - Modeled as Congregate Care
50 Acute Assisted Living Units - Modeled as Congregate Care
60 Skilled Nursing Beds - Modeled as Hospital Beds
Gross Floor Area = 823,850 sf
Grading = 42.42 acres

Construction Phase - approximately 2 years construction

Grading -

Architectural Coating - SDAPCD VOC content limit = 150 g/L

Vehicle Trips - Trip rates obtained from traffic report prepared for project (Urban Systems Associates, Inc. 2012)
Average SANDAG trip length = 5.8 miles
Trips characteristics for skilled nursing beds assumed to be the same as trip characterics for congregate care

Woodstoves - No woodstoves or fireplaces

Area Coating - SDAPCD VOC content limit = 150 g/L

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	55.00	200.00
tblConstructionPhase	NumDays	740.00	400.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	7/15/2016	10/9/2015
tblConstructionPhase	PhaseStartDate	10/10/2015	1/5/2015
tblConstructionPhase	PhaseStartDate	3/29/2014	3/31/2014
tblConstructionPhase	PhaseStartDate	2/1/2014	2/3/2014

tblConstructionPhase	PhaseStartDate	10/10/2015	10/12/2015
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	247.50	0.00
tblFireplaces	NumberNoFireplace	45.00	0.00
tblFireplaces	NumberWood	157.50	0.00
tblLandUse	LandUseSquareFeet	42,945.45	33,115.00
tblLandUse	LandUseSquareFeet	50,000.00	96,411.00
tblLandUse	LandUseSquareFeet	400,000.00	694,323.00
tblLandUse	LotAcreage	0.99	4.91
tblLandUse	LotAcreage	3.13	4.09
tblLandUse	LotAcreage	25.00	33.42
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TTP	16.10	41.60
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TTP	19.00	39.60
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TTP	64.90	18.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	2.20	3.78
tblVehicleTrips	ST_TR	8.14	3.00
tblVehicleTrips	SU_TR	2.44	3.78
tblVehicleTrips	SU_TR	7.19	3.00
tblVehicleTrips	WD_TR	2.74	3.78

tblVehicleTrips	WD_TR	11.81	3.00
tblWoodstoves	NumberCatalytic	22.50	0.00
tblWoodstoves	NumberNoncatalytic	22.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	12.0928	80.8336	52.6589	0.0725	18.2141	3.8806	21.3531	9.9699	3.5701	12.8577	0.0000	6,950.4173	6,950.4173	1.9473	0.0000	6,991.3109
2015	89.3546	40.6759	48.7400	0.0819	3.6607	2.4612	6.1219	0.9782	2.3248	3.3030	0.0000	7,662.7889	7,662.7889	0.9127	0.0000	7,681.9547
Total	**101.4474**	**121.5095**	**101.3989**	**0.1544**	**21.8749**	**6.3418**	**27.4750**	**10.9481**	**5.8950**	**16.1608**	**0.0000**	**14,613.2062**	**14,613.2062**	**2.8600**	**0.0000**	**14,673.2656**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2014	12.0892	80.7595	52.6116	0.0724	18.2141	3.8770	21.3502	9.9699	3.5669	12.8551	0.0000	6,947.9318	6,947.9318	1.9455	0.0000	6,988.7881
2015	89.3509	40.6460	48.7211	0.0819	3.6607	2.4591	6.1198	0.9782	2.3228	3.3010	0.0000	7,660.0632	7,660.0632	0.9120	0.0000	7,679.2152
Total	**101.4401**	**121.4055**	**101.3326**	**0.1543**	**21.8749**	**6.3361**	**27.4700**	**10.9481**	**5.8897**	**16.1561**	**0.0000**	**14,607.9949**	**14,607.9949**	**2.8575**	**0.0000**	**14,668.0033**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**7.1761e-003**	**0.0856**	**0.0654**	**0.0324**	**0.0000**	**0.0899**	**0.0183**	**0.0000**	**0.0901**	**0.0289**	**0.0000**	**0.0357**	**0.0357**	**0.0853**	**0.0000**	**0.0359**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Energy	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
Mobile	16.0665	12.2937	60.4208	0.1057	7.3845	0.1487	7.5332	1.9712	0.1367	2.1079		9,211.0779	9,211.0779	0.4202		9,219.9016
Total	**41.9799**	**13.8751**	**98.7701**	**0.1147**	**7.3845**	**0.4415**	**7.8260**	**1.9712**	**0.4295**	**2.4008**	**0.0000**	**10,694.6673**	**10,694.6673**	**0.5155**	**0.0260**	**10,713.5444**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Energy	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
Mobile	16.0665	12.2937	60.4208	0.1057	7.3845	0.1487	7.5332	1.9712	0.1367	2.1079		9,211.0779	9,211.0779	0.4202		9,219.9016
Total	**41.9799**	**13.8751**	**98.7701**	**0.1147**	**7.3845**	**0.4415**	**7.8260**	**1.9712**	**0.4295**	**2.4008**	**0.0000**	**10,694.6673**	**10,694.6673**	**0.5155**	**0.0260**	**10,713.5444**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/6/2014	1/31/2014	5	20	
2	Grading	Grading	2/3/2014	3/28/2014	5	40	
3	Building Construction	Building Construction	3/31/2014	10/9/2015	5	400	
4	Architectural Coating	Architectural Coating	1/5/2015	10/9/2015	5	200	
5	Paving	Paving	10/12/2015	11/20/2015	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	335.00	54.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	67.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2910	57.6198	42.9609	0.0391		3.1377	3.1377		2.8867	2.8867		4,155.8914	4,155.8914	1.2281		4,181.6817
Total	**5.2910**	**57.6198**	**42.9609**	**0.0391**	**18.0663**	**3.1377**	**21.2040**	**9.9307**	**2.8867**	**12.8174**		**4,155.8914**	**4,155.8914**	**1.2281**		**4,181.6817**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3552	0.1013	0.9682	1.7600e-003	0.1479	1.2400e-003	0.1491	0.0392	1.1300e-003	0.0404		157.4408	157.4408	9.2600e-003		157.6353
Total	**0.3552**	**0.1013**	**0.9682**	**1.7600e-003**	**0.1479**	**1.2400e-003**	**0.1491**	**0.0392**	**1.1300e-003**	**0.0404**		**157.4408**	**157.4408**	**9.2600e-003**		**157.6353**

3.2 Site Preparation - 2014

Mitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	5.2861	57.5669	42.9215	0.0391		3.1349	3.1349		2.8841	2.8841	0.0000	4,152.0786	4,152.0786	1.2270		4,177.8453
Total	**5.2861**	**57.5669**	**42.9215**	**0.0391**	**18.0663**	**3.1349**	**21.2011**	**9.9307**	**2.8841**	**12.8147**	**0.0000**	**4,152.0786**	**4,152.0786**	**1.2270**		**4,177.8453**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3552	0.1013	0.9682	1.7600e-003	0.1479	1.2400e-003	0.1491	0.0392	1.1300e-003	0.0404		157.4408	157.4408	9.2600e-003		157.6353
Total	**0.3552**	**0.1013**	**0.9682**	**1.7600e-003**	**0.1479**	**1.2400e-003**	**0.1491**	**0.0392**	**1.1300e-003**	**0.0404**		**157.4408**	**157.4408**	**9.2600e-003**		**157.6353**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.8480	80.7211	51.5831	0.0618		3.8792	3.8792		3.5689	3.5689		6,554.8337	6,554.8337	1.9370		6,595.5113
Total	**6.8480**	**80.7211**	**51.5831**	**0.0618**	**8.6733**	**3.8792**	**12.5525**	**3.5965**	**3.5689**	**7.1654**		**6,554.8337**	**6,554.8337**	**1.9370**		**6,595.5113**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3946	0.1125	1.0758	1.9600e-003	0.1643	1.3800e-003	0.1657	0.0436	1.2600e-003	0.0448		174.9342	174.9342	0.0103		175.1503
Total	**0.3946**	**0.1125**	**1.0758**	**1.9600e-003**	**0.1643**	**1.3800e-003**	**0.1657**	**0.0436**	**1.2600e-003**	**0.0448**		**174.9342**	**174.9342**	**0.0103**		**175.1503**

3.3 Grading - 2014

Mitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	6.8418	80.6470	51.5358	0.0617		3.8756	3.8756		3.5656	3.5656	0.0000	6,548.8200	6,548.8200	1.9353		6,589.4602
Total	**6.8418**	**80.6470**	**51.5358**	**0.0617**	**8.6733**	**3.8756**	**12.5490**	**3.5965**	**3.5656**	**7.1621**	**0.0000**	**6,548.8200**	**6,548.8200**	**1.9353**		**6,589.4602**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.3946	0.1125	1.0758	1.9600e-003	0.1643	1.3800e-003	0.1657	0.0436	1.2600e-003	0.0448		174.9342	174.9342	0.0103		175.1503
Total	**0.3946**	**0.1125**	**1.0758**	**1.9600e-003**	**0.1643**	**1.3800e-003**	**0.1657**	**0.0436**	**1.2600e-003**	**0.0448**		**174.9342**	**174.9342**	**0.0103**		**175.1503**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8680	31.2537	18.9298	0.0268		2.2280	2.2280		2.0973	2.0973		2,709.1969	2,709.1969	0.6889		2,723.6630
Total	**3.8680**	**31.2537**	**18.9298**	**0.0268**		**2.2280**	**2.2280**		**2.0973**	**2.0973**		**2,709.1969**	**2,709.1969**	**0.6889**		**2,723.6630**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6151	7.0568	9.4647	0.0129	0.3585	0.1345	0.4930	0.1023	0.1237	0.2260		1,311.0723	1,311.0723	0.0137		1,311.3591
Worker	6.6097	1.8844	18.0195	0.0328	2.7520	0.0231	2.7750	0.7299	0.0211	0.7510		2,930.1481	2,930.1481	0.1724		2,933.7678
Total	**8.2248**	**8.9412**	**27.4843**	**0.0456**	**3.1104**	**0.1576**	**3.2680**	**0.8322**	**0.1448**	**0.9770**		**4,241.2204**	**4,241.2204**	**0.1860**		**4,245.1269**

3.4 Building Construction - 2014

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.8644	31.2250	18.9125	0.0268		2.2259	2.2259		2.0954	2.0954	0.0000	2,706.7114	2,706.7114	0.6882		2,721.1642
Total	**3.8644**	**31.2250**	**18.9125**	**0.0268**		**2.2259**	**2.2259**		**2.0954**	**2.0954**	**0.0000**	**2,706.7114**	**2,706.7114**	**0.6882**		**2,721.1642**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.6151	7.0568	9.4647	0.0129	0.3585	0.1345	0.4930	0.1023	0.1237	0.2260		1,311.0723	1,311.0723	0.0137		1,311.3591
Worker	6.6097	1.8844	18.0195	0.0328	2.7520	0.0231	2.7750	0.7299	0.0211	0.7510		2,930.1481	2,930.1481	0.1724		2,933.7678
Total	**8.2248**	**8.9412**	**27.4843**	**0.0456**	**3.1104**	**0.1576**	**3.2680**	**0.8322**	**0.1448**	**0.9770**		**4,241.2204**	**4,241.2204**	**0.1860**		**4,245.1269**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6591	30.0299	18.7446	0.0268		2.1167	2.1167		1.9904	1.9904		2,689.5771	2,689.5771	0.6748		2,703.7483
Total	**3.6591**	**30.0299**	**18.7446**	**0.0268**		**2.1167**	**2.1167**		**1.9904**	**1.9904**		**2,689.5771**	**2,689.5771**	**0.6748**		**2,703.7483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3975	6.0362	8.7035	0.0128	0.3584	0.0977	0.4561	0.1023	0.0898	0.1921		1,293.7770	1,293.7770	0.0116		1,294.0196
Worker	6.1432	1.6996	16.1585	0.0328	2.7520	0.0216	2.7736	0.7299	0.0198	0.7497		2,831.6556	2,831.6556	0.1580		2,834.9743
Total	**7.5407**	**7.7357**	**24.8620**	**0.0456**	**3.1104**	**0.1193**	**3.2296**	**0.8322**	**0.1096**	**0.9418**		**4,125.4326**	**4,125.4326**	**0.1696**		**4,128.9939**

3.4 Building Construction - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	3.6557	30.0024	18.7274	0.0268		2.1148	2.1148		1.9886	1.9886	0.0000	2,687.1096	2,687.1096	0.6742		2,701.2678
Total	**3.6557**	**30.0024**	**18.7274**	**0.0268**		**2.1148**	**2.1148**		**1.9886**	**1.9886**	**0.0000**	**2,687.1096**	**2,687.1096**	**0.6742**		**2,701.2678**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	1.3975	6.0362	8.7035	0.0128	0.3584	0.0977	0.4561	0.1023	0.0898	0.1921		1,293.7770	1,293.7770	0.0116		1,294.0196
Worker	6.1432	1.6996	16.1585	0.0328	2.7520	0.0216	2.7736	0.7299	0.0198	0.7497		2,831.6556	2,831.6556	0.1580		2,834.9743
Total	**7.5407**	**7.7357**	**24.8620**	**0.0456**	**3.1104**	**0.1193**	**3.2296**	**0.8322**	**0.1096**	**0.9418**		**4,125.4326**	**4,125.4326**	**0.1696**		**4,128.9939**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4066	2.5703	1.9018	2.9700e-003		0.2209	0.2209		0.2209	0.2209		281.4481	281.4481	0.0367		282.2177
Total	**76.9262**	**2.5703**	**1.9018**	**2.9700e-003**		**0.2209**	**0.2209**		**0.2209**	**0.2209**		**281.4481**	**281.4481**	**0.0367**		**282.2177**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2286	0.3399	3.2317	6.5500e-003	0.5504	4.3200e-003	0.5547	0.1460	3.9600e-003	0.1500		566.3311	566.3311	0.0316		566.9949
Total	**1.2286**	**0.3399**	**3.2317**	**6.5500e-003**	**0.5504**	**4.3200e-003**	**0.5547**	**0.1460**	**3.9600e-003**	**0.1500**		**566.3311**	**566.3311**	**0.0316**		**566.9949**

3.5 Architectural Coating - 2015

Mitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	76.5196					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.4062	2.5680	1.9000	2.9700e-003		0.2207	0.2207		0.2207	0.2207	0.0000	281.1898	281.1898	0.0366		281.9587
Total	**76.9259**	**2.5680**	**1.9000**	**2.9700e-003**		**0.2207**	**0.2207**		**0.2207**	**0.2207**	**0.0000**	**281.1898**	**281.1898**	**0.0366**		**281.9587**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	1.2286	0.3399	3.2317	6.5500e-003	0.5504	4.3200e-003	0.5547	0.1460	3.9600e-003	0.1500		566.3311	566.3311	0.0316		566.9949
Total	**1.2286**	**0.3399**	**3.2317**	**6.5500e-003**	**0.5504**	**4.3200e-003**	**0.5547**	**0.1460**	**3.9600e-003**	**0.1500**		**566.3311**	**566.3311**	**0.0316**		**566.9949**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3172	25.1758	14.9781	0.0223		1.4148	1.4148		1.3016	1.3016		2,339.8984	2,339.8984	0.6986		2,354.5681
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3172**	**25.1758**	**14.9781**	**0.0223**		**1.4148**	**1.4148**		**1.3016**	**1.3016**		**2,339.8984**	**2,339.8984**	**0.6986**		**2,354.5681**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2751	0.0761	0.7235	1.4700e-003	0.1232	9.7000e-004	0.1242	0.0327	8.9000e-004	0.0336		126.7906	126.7906	7.0800e-003		126.9392
Total	**0.2751**	**0.0761**	**0.7235**	**1.4700e-003**	**0.1232**	**9.7000e-004**	**0.1242**	**0.0327**	**8.9000e-004**	**0.0336**		**126.7906**	**126.7906**	**7.0800e-003**		**126.9392**

3.6 Paving - 2015

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.3151	25.1527	14.9643	0.0223		1.4135	1.4135		1.3004	1.3004	0.0000	2,337.7516	2,337.7516	0.6979		2,352.4079
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.3151**	**25.1527**	**14.9643**	**0.0223**		**1.4135**	**1.4135**		**1.3004**	**1.3004**	**0.0000**	**2,337.7516**	**2,337.7516**	**0.6979**		**2,352.4079**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2751	0.0761	0.7235	1.4700e-003	0.1232	9.7000e-004	0.1242	0.0327	8.9000e-004	0.0336		126.7906	126.7906	7.0800e-003		126.9392
Total	**0.2751**	**0.0761**	**0.7235**	**1.4700e-003**	**0.1232**	**9.7000e-004**	**0.1242**	**0.0327**	**8.9000e-004**	**0.0336**		**126.7906**	**126.7906**	**7.0800e-003**		**126.9392**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.0665	12.2937	60.4208	0.1057	7.3845	0.1487	7.5332	1.9712	0.1367	2.1079		9,211.0779	9,211.0779	0.4202		9,219.9016
Unmitigated	16.0665	12.2937	60.4208	0.1057	7.3845	0.1487	7.5332	1.9712	0.1367	2.1079		9,211.0779	9,211.0779	0.4202		9,219.9016

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	189.00	189.00	189.00	354,334	354,334
Congregate Care (Assisted Living)	1,512.00	1,512.00	1512.00	2,834,670	2,834,670
Hospital	180.00	180.00	180.00	301,294	301,294
Total	1,881.00	1,881.00	1,881.00	3,490,298	3,490,298

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Hospital	5.80	5.80	5.80	18.80	41.60	39.60	73	25	2

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510118	0.073510	0.192396	0.133166	0.036737	0.005265	0.012605	0.021642	0.001847	0.002083	0.006548	0.000610	0.003471

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498
NaturalGas Unmitigated	0.1299	1.1409	0.7001	7.0800e-003		0.0897	0.0897		0.0897	0.0897		1,416.7278	1,416.7278	0.0272	0.0260	1,425.3498

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hospital	5282.98	0.0570	0.5179	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394		621.5267	621.5267	0.0119	0.0114	625.3092
Congregate Care (Assisted Living)	6008.19	0.0648	0.5537	0.2356	3.5300e-003		0.0448	0.0448		0.0448	0.0448		706.8455	706.8455	0.0136	0.0130	711.1472
Congregate Care (Assisted Living)	751.023	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003		88.3557	88.3557	1.6900e-003	1.6200e-003	88.8934
Total		**0.1299**	**1.1409**	**0.7001**	**7.0800e-003**		**0.0897**	**0.0897**		**0.0897**	**0.0897**		**1,416.7278**	**1,416.7278**	**0.0272**	**0.0260**	**1,425.3498**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hospital	5.28298	0.0570	0.5179	0.4351	3.1100e-003		0.0394	0.0394		0.0394	0.0394		621.5267	621.5267	0.0119	0.0114	625.3092
Congregate Care (Assisted Living)	0.751023	8.1000e-003	0.0692	0.0295	4.4000e-004		5.6000e-003	5.6000e-003		5.6000e-003	5.6000e-003		88.3557	88.3557	1.6900e-003	1.6200e-003	88.8934
Congregate Care (Assisted Living)	6.00819	0.0648	0.5537	0.2356	3.5300e-003		0.0448	0.0448		0.0448	0.0448		706.8455	706.8455	0.0136	0.0130	711.1472
Total		**0.1299**	**1.1409**	**0.7001**	**7.0800e-003**		**0.0897**	**0.0897**		**0.0897**	**0.0897**		**1,416.7278**	**1,416.7278**	**0.0272**	**0.0260**	**1,425.3498**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930
Unmitigated	25.7835	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031	0.0000	66.8617	66.8617	0.0682	0.0000	68.2930

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.9671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.6304					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1861	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031		66.8617	66.8617	0.0682		68.2930
Total	**25.7835**	**0.4405**	**37.6492**	**1.9600e-003**		**0.2031**	**0.2031**		**0.2031**	**0.2031**	**0.0000**	**66.8617**	**66.8617**	**0.0682**	**0.0000**	**68.2930**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	6.9671					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	17.6304					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1861	0.4405	37.6492	1.9600e-003		0.2031	0.2031		0.2031	0.2031		66.8617	66.8617	0.0682		68.2930
Total	**25.7835**	**0.4405**	**37.6492**	**1.9600e-003**		**0.2031**	**0.2031**		**0.2031**	**0.2031**	**0.0000**	**66.8617**	**66.8617**	**0.0682**	**0.0000**	**68.2930**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

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ATTACHMENT 2

CALINE4 Input/Output

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CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Existing - Pomerado & Willow Creek
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=	8.7 PPM		
SIGTH=	5. DEGREES	TEMP=	16.7 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1309	5.9	.0	28.0
B. Link B	150	7	0	7	AG	1003	5.9	.0	28.0
C. Link C	0	7	-150	7	AG	1254	5.9	.0	28.0
D. Link D	-150	7	-600	7	AG	1531	5.9	.0	28.0
E. Link E	7	-600	7	-150	AG	651	5.9	.0	28.0
F. Link F	7	-150	7	0	AG	374	4.9	.0	28.0
G. Link G	7	0	7	150	AG	213	3.3	.0	28.0
H. Link H	7	150	7	600	AG	348	3.3	.0	28.0
I. Link I	-600	-7	-150	-7	AG	886	5.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	751	5.9	.0	28.0
K. Link K	0	-7	150	-7	AG	765	4.2	.0	28.0
L. Link L	150	-7	600	-7	AG	777	4.2	.0	28.0

M.	Link M	*	-7	600	-7	150	*	AG	458	4.9	.0
28.0											
N.	Link N	*	-7	150	-7	0	*	AG	446	4.9	.0
28.0											
O.	Link O	*	-7	0	-7	-150	*	AG	342	3.3	.0
28.0											
P.	Link P	*	-7	-150	-7	-600	*	AG	648	4.2	.0
28.0											
Q.	Link Q	*	150	6	0	0	*	AG	306	5.9	.0
28.0											
R.	Link R	*	-150	-6	0	0	*	AG	135	5.9	.0
28.0											
S.	Link S	*	-6	150	0	0	*	AG	12	5.9	.0
28.0											
T.	Link T	*	6	-150	0	0	*	AG	277	5.9	.0
28.0											

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Existing - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Existing - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	268.	10.6	1.2	.1	.0	.1	.0	.0	.0	.0
2. Recpt 2	267.	10.6	.0	.7	.3	.2	.0	.0	.0	.0
3. Recpt 3	267.	10.6	.0	.4	.5	.4	.0	.0	.0	.0
4. Recpt 4	93.	10.4	.4	.4	.5	.0	.0	.0	.0	.0
5. Recpt 5	93.	10.5	.2	.2	.8	.0	.0	.0	.0	.0
6. Recpt 6	93.	10.8	.0	.0	.1	1.3	.0	.0	.0	.0
7. Recpt 7	273.	10.2	.3	.1	.0	.1	.0	.0	.0	.0
8. Recpt 8	274.	10.3	.0	.1	.3	.3	.0	.0	.0	.0
9. Recpt 9	274.	10.4	.0	.0	.3	.5	.0	.0	.0	.0
10. Recpt 10	86.	10.3	.4	.2	.0	.0	.0	.0	.0	.0
11. Recpt 11	86.	10.3	.3	.2	.2	.0	.0	.0	.0	.0
12. Recpt 12	87.	10.5	.1	.0	.1	.4	.0	.0	.0	.0
13. Recpt 13	178.	9.5	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	177.	9.6	.0	.0	.0	.0	.2	.0	.0	.0
15. Recpt 15	176.	9.8	.0	.0	.2	.0	.2	.0	.0	.0
16. Recpt 16	3.	9.6	.0	.0	.2	.0	.0	.0	.0	.0
17. Recpt 17	3.	9.4	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	3.	9.7	.0	.0	.0	.0	.2	.0	.0	.0
19. Recpt 19	183.	9.7	.0	.2	.0	.0	.2	.1	.0	.0
20. Recpt 20	280.	9.5	.0	.0	.0	.4	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Existing - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.1	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
3. Recpt 3	*	.3	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0
5. Recpt 5	*	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.1	.2	.4	.0	.0	.0	.0	.0	.1	.0	.0	.0
9. Recpt 9	*	.2	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.3	.2	.1	.0	.0	.0	.0	.1	.0	.0	.0
11. Recpt 11	*	.0	.5	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
12. Recpt 12	*	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.1	.0	.0	.0	.1	.0	.1	.0	.0	.0	.1

16. Recpt 16 * .0 .1 .0 .0 .1 .2 .0 .0 .0 .0 .0
.0
17. Recpt 17 * .0 .0 .0 .0 .0 .0 .1 .0 .0 .0 .0
.0
18. Recpt 18 * .0 .0 .0 .0 .0 .0 .0 .4 .0 .0 .0
.0
19. Recpt 19 * .0 .0 .0 .0 .0 .0 .0 .2 .0 .0 .0
.1
20. Recpt 20 * .3 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Near-Term - Pomerado & Willow Creek
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=	8.7 PPM		
SIGTH=	5. DEGREES	TEMP=	16.7 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1314	5.9	.0	28.0
B. Link B	150	7	0	7	AG	1008	5.9	.0	28.0
C. Link C	0	7	-150	7	AG	1259	5.9	.0	28.0
D. Link D	-150	7	-600	7	AG	1536	5.9	.0	28.0
E. Link E	7	-600	7	-150	AG	651	5.9	.0	28.0
F. Link F	7	-150	7	0	AG	374	4.9	.0	28.0
G. Link G	7	0	7	150	AG	213	3.3	.0	28.0
H. Link H	7	150	7	600	AG	348	3.3	.0	28.0
I. Link I	-600	-7	-150	-7	AG	887	5.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	752	5.9	.0	28.0
K. Link K	0	-7	150	-7	AG	766	4.2	.0	28.0
L. Link L	150	-7	600	-7	AG	778	4.2	.0	28.0

M.	Link M	*	-7	600	-7	150	*	AG	458	4.9	.0
28.0											
N.	Link N	*	-7	150	-7	0	*	AG	446	4.9	.0
28.0											
O.	Link O	*	-7	0	-7	-150	*	AG	342	3.3	.0
28.0											
P.	Link P	*	-7	-150	-7	-600	*	AG	648	4.2	.0
28.0											
Q.	Link Q	*	150	6	0	0	*	AG	306	5.9	.0
28.0											
R.	Link R	*	-150	-6	0	0	*	AG	135	5.9	.0
28.0											
S.	Link S	*	-6	150	0	0	*	AG	12	5.9	.0
28.0											
T.	Link T	*	6	-150	0	0	*	AG	277	5.9	.0
28.0											

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Near-Term - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Near-Term - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	268.	10.6	1.2	.1	.0	.1	.0	.0	.0	.0
2. Recpt 2	267.	10.6	.0	.7	.3	.2	.0	.0	.0	.0
3. Recpt 3	267.	10.6	.0	.4	.5	.4	.0	.0	.0	.0
4. Recpt 4	93.	10.5	.4	.4	.5	.0	.0	.0	.0	.0
5. Recpt 5	93.	10.5	.2	.2	.8	.0	.0	.0	.0	.0
6. Recpt 6	93.	10.9	.0	.0	.1	1.3	.0	.0	.0	.0
7. Recpt 7	273.	10.2	.3	.1	.0	.1	.0	.0	.0	.0
8. Recpt 8	274.	10.3	.0	.1	.3	.3	.0	.0	.0	.0
9. Recpt 9	274.	10.4	.0	.0	.3	.5	.0	.0	.0	.0
10. Recpt 10	86.	10.3	.4	.2	.0	.0	.0	.0	.0	.0
11. Recpt 11	86.	10.3	.3	.2	.2	.0	.0	.0	.0	.0
12. Recpt 12	87.	10.5	.1	.0	.1	.4	.0	.0	.0	.0
13. Recpt 13	178.	9.5	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	177.	9.6	.0	.0	.0	.0	.2	.0	.0	.0
15. Recpt 15	176.	9.8	.0	.0	.2	.0	.2	.0	.0	.0
16. Recpt 16	3.	9.6	.0	.0	.2	.0	.0	.0	.0	.0
17. Recpt 17	3.	9.4	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	3.	9.7	.0	.0	.0	.0	.2	.0	.0	.0
19. Recpt 19	183.	9.7	.0	.2	.0	.0	.2	.1	.0	.0
20. Recpt 20	280.	9.5	.0	.0	.0	.4	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Near-Term - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.1	.0	.0	.0	.0	.0	.0	.2	.0	.0	.0
3. Recpt 3	*	.3	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.2	.0	.0	.0	.0	.1	.0	.0	.0
5. Recpt 5	*	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.1	.2	.4	.0	.0	.0	.0	.0	.1	.0	.0	.0
9. Recpt 9	*	.2	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.3	.2	.1	.0	.0	.0	.0	.1	.0	.0	.0
11. Recpt 11	*	.0	.5	.1	.0	.0	.0	.0	.0	.0	.1	.0	.0
12. Recpt 12	*	.8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0
15. Recpt 15	*	.0	.1	.0	.0	.0	.1	.0	.1	.0	.0	.0	.1

16. Recpt 16 * .0 .1 .0 .0 .1 .2 .0 .0 .0 .0 .0
.0
17. Recpt 17 * .0 .0 .0 .0 .0 .0 .1 .0 .0 .0 .0
.0
18. Recpt 18 * .0 .0 .0 .0 .0 .0 .0 .4 .0 .0 .0
.0
19. Recpt 19 * .0 .0 .0 .0 .0 .0 .0 .2 .0 .0 .0
.1
20. Recpt 20 * .3 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Year 2030 - Pomerado & Avenida Magnifica
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=	8.7 PPM		
SIGTH=	5. DEGREES	TEMP=	16.7 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1229	5.9	.0	28.0
B. Link B	150	7	0	7	AG	1226	5.9	.0	28.0
C. Link C	0	7	-150	7	AG	1117	5.9	.0	28.0
D. Link D	-150	7	-600	7	AG	1175	5.9	.0	28.0
E. Link E	7	-600	7	-150	AG	103	4.9	.0	28.0
F. Link F	7	-150	7	0	AG	45	4.9	.0	28.0
G. Link G	7	0	7	150	AG	207	3.3	.0	28.0
H. Link H	7	150	7	600	AG	324	3.3	.0	28.0
I. Link I	-600	-7	-150	-7	AG	733	5.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	616	5.9	.0	28.0
K. Link K	0	-7	150	-7	AG	607	4.2	.0	28.0
L. Link L	150	-7	600	-7	AG	829	4.9	.0	28.0

M.	Link M	*	-7	600	-7	150	*	AG	291	4.9	.0
28.0											
N.	Link N	*	-7	150	-7	0	*	AG	69	4.9	.0
28.0											
O.	Link O	*	-7	0	-7	-150	*	AG	25	3.3	.0
28.0											
P.	Link P	*	-7	-150	-7	-600	*	AG	28	3.3	.0
28.0											
Q.	Link Q	*	150	6	0	0	*	AG	3	5.9	.0
28.0											
R.	Link R	*	-150	-6	0	0	*	AG	117	5.9	.0
28.0											
S.	Link S	*	-6	150	0	0	*	AG	222	5.9	.0
28.0											
T.	Link T	*	6	-150	0	0	*	AG	58	5.9	.0
28.0											

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Year 2030 - Pomerado & Avenida Magnifica
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Year 2030 - Pomerado & Avenida Magnifica
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	268.	10.5	1.1	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	267.	10.4	.0	.8	.2	.2	.0	.0	.0	.0
3. Recpt 3	267.	10.4	.0	.4	.5	.3	.0	.0	.0	.0
4. Recpt 4	93.	10.3	.3	.5	.4	.0	.0	.0	.0	.0
5. Recpt 5	93.	10.3	.2	.3	.8	.0	.0	.0	.0	.0
6. Recpt 6	92.	10.5	.1	.0	.1	1.1	.0	.0	.0	.0
7. Recpt 7	273.	10.2	.3	.1	.0	.1	.0	.0	.0	.0
8. Recpt 8	85.	9.9	.6	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	274.	10.0	.0	.0	.2	.4	.0	.0	.0	.0
10. Recpt 10	274.	10.0	.0	.0	.0	.5	.0	.0	.0	.0
11. Recpt 11	86.	10.1	.3	.2	.2	.0	.0	.0	.0	.0
12. Recpt 12	87.	10.2	.1	.0	.1	.3	.0	.0	.0	.0
13. Recpt 13	177.	9.2	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	176.	9.2	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	99.	9.4	.4	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	81.	9.3	.3	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	3.	9.2	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	2.	9.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	261.	9.4	.0	.0	.0	.3	.0	.0	.0	.0
20. Recpt 20	280.	9.3	.0	.0	.0	.3	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Year 2030 - Pomerado & Avenida Magnifica
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.0	.6	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.2	.3	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
15. Recpt 15	*	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0

16. Recpt 16 * .0 .0 .0 .2 .0 .0 .0 .0 .0 .0 .0
.0
17. Recpt 17 * .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0
18. Recpt 18 * .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0
19. Recpt 19 * .2 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0
20. Recpt 20 * .2 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0
.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Year 2030 - Pomerado & Scripps Ranch
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= 8.7 PPM
SIGTH= 5. DEGREES TEMP= 16.7 DEGREE (C)

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1495	5.9	.0	28.0
B. Link B	150	7	0	7	AG	1494	5.9	.0	28.0
C. Link C	0	7	-150	7	AG	1497	5.9	.0	28.0
D. Link D	-150	7	-600	7	AG	1535	5.9	.0	28.0
E. Link E	7	-600	7	-150	AG	58	4.9	.0	28.0
F. Link F	7	-150	7	0	AG	20	4.9	.0	28.0
G. Link G	7	0	7	150	AG	108	3.3	.0	28.0
H. Link H	7	150	7	600	AG	206	3.3	.0	28.0
I. Link I	-600	-7	-150	-7	AG	965	5.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	867	5.9	.0	28.0
K. Link K	0	-7	150	-7	AG	851	4.9	.0	28.0
L. Link L	150	-7	600	-7	AG	1160	5.9	.0	28.0

M.	Link M	*	-7	600	-7	150	*	AG	418	4.9	.0
28.0											
N.	Link N	*	-7	150	-7	0	*	AG	109	4.9	.0
28.0											
O.	Link O	*	-7	0	-7	-150	*	AG	34	3.3	.0
28.0											
P.	Link P	*	-7	-150	-7	-600	*	AG	35	3.3	.0
28.0											
Q.	Link Q	*	150	6	0	0	*	AG	1	5.9	.0
28.0											
R.	Link R	*	-150	-6	0	0	*	AG	98	5.9	.0
28.0											
S.	Link S	*	-6	150	0	0	*	AG	309	5.9	.0
28.0											
T.	Link T	*	6	-150	0	0	*	AG	38	5.9	.0
28.0											

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Year 2030 - Pomerado & Scripps Ranch
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Year 2030 - Pomerado & Scripps Ranch
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	10.9	1.3	.1	.0	.1	.0	.0	.0	.0
2. Recpt 2	267.	10.8	.0	1.0	.3	.2	.0	.0	.0	.0
3. Recpt 3	267.	10.8	.0	.5	.6	.4	.0	.0	.0	.0
4. Recpt 4	93.	10.8	.4	.6	.5	.0	.0	.0	.0	.0
5. Recpt 5	93.	10.8	.2	.3	1.0	.0	.0	.0	.0	.0
6. Recpt 6	92.	10.9	.1	.0	.2	1.3	.0	.0	.0	.0
7. Recpt 7	273.	10.8	.4	.2	.0	.1	.0	.0	.0	.0
8. Recpt 8	86.	10.4	.6	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	274.	10.4	.0	.0	.3	.5	.0	.0	.0	.0
10. Recpt 10	86.	10.4	.4	.3	.0	.0	.0	.0	.0	.0
11. Recpt 11	86.	10.5	.3	.3	.2	.0	.0	.0	.0	.0
12. Recpt 12	87.	10.6	.1	.0	.2	.4	.0	.0	.0	.0
13. Recpt 13	178.	9.3	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	176.	9.3	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	99.	9.5	.4	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	81.	9.4	.3	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	2.	9.2	.0	.0	.1	.0	.0	.0	.0	.0
18. Recpt 18	2.	9.0	.0	.0	.0	.0	.0	.0	.0	.0
19. Recpt 19	261.	9.5	.0	.0	.0	.4	.0	.0	.0	.0
20. Recpt 20	280.	9.4	.0	.0	.0	.4	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Year 2030 - Pomerado & Scripps Ranch
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.2	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.3	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.1	.4	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.0	.1	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.2	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.0	.0	.0	1.1	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.2	.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.3	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.6	.1	.1	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.2	.0
15. Recpt 15	*	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0

16.	Recpt 16	*	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0
.0													
17.	Recpt 17	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
.0													
18.	Recpt 18	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
.0													
19.	Recpt 19	*	.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
.0													
20.	Recpt 20	*	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
.0													

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 1

JOB: Year 2030 - Pomerado & Willow Creek
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=	8.7 PPM		
SIGTH=	5. DEGREES	TEMP=	16.7 DEGREE (C)		

II. LINK VARIABLES

LINK DESCRIPTION	LINK COORDINATES (M) X1	Y1	X2	Y2	TYPE	VPH	EF (G/MI)	H (M)	W (M)
A. Link A	600	7	150	7	AG	1232	5.9	.0	28.0
B. Link B	150	7	0	7	AG	1171	5.9	.0	28.0
C. Link C	0	7	-150	7	AG	1203	5.9	.0	28.0
D. Link D	-150	7	-600	7	AG	1438	5.9	.0	28.0
E. Link E	7	-600	7	-150	AG	381	4.9	.0	28.0
F. Link F	7	-150	7	0	AG	146	4.9	.0	28.0
G. Link G	7	0	7	150	AG	96	3.3	.0	28.0
H. Link H	7	150	7	600	AG	208	3.3	.0	28.0
I. Link I	-600	-7	-150	-7	AG	1442	5.9	.0	28.0
J. Link J	-150	-7	0	-7	AG	1330	5.9	.0	28.0
K. Link K	0	-7	150	-7	AG	1293	5.9	.0	28.0
L. Link L	150	-7	600	-7	AG	1700	5.9	.0	28.0

M.	Link M	*	-7	600	-7	150	*	AG	524	4.9	.0
28.0											
N.	Link N	*	-7	150	-7	0	*	AG	117	4.9	.0
28.0											
O.	Link O	*	-7	0	-7	-150	*	AG	172	3.3	.0
28.0											
P.	Link P	*	-7	-150	-7	-600	*	AG	233	3.3	.0
28.0											
Q.	Link Q	*	150	6	0	0	*	AG	61	5.9	.0
28.0											
R.	Link R	*	-150	-6	0	0	*	AG	112	5.9	.0
28.0											
S.	Link S	*	-6	150	0	0	*	AG	407	5.9	.0
28.0											
T.	Link T	*	6	-150	0	0	*	AG	235	5.9	.0
28.0											

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 2

JOB: Year 2030 - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

III. RECEPTOR LOCATIONS

RECEPTOR	COORDINATES (M) X	Y	Z
1. Recpt 1	450	14	1.8
2. Recpt 2	150	14	1.8
3. Recpt 3	50	14	1.8
4. Recpt 4	-50	14	1.8
5. Recpt 5	-150	14	1.8
6. Recpt 6	-450	14	1.8
7. Recpt 7	450	-14	1.8
8. Recpt 8	150	-14	1.8
9. Recpt 9	50	-14	1.8
10. Recpt 10	-50	-14	1.8
11. Recpt 11	-150	-14	1.8
12. Recpt 12	-450	-14	1.8
13. Recpt 13	-14	450	1.8
14. Recpt 14	-14	150	1.8
15. Recpt 15	-14	50	1.8
16. Recpt 16	-14	-50	1.8
17. Recpt 17	-14	-150	1.8
18. Recpt 18	-14	-450	1.8
19. Recpt 19	14	50	1.8
20. Recpt 20	14	-50	1.8

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 3

JOB: Year 2030 - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE)

RECEPTOR	BRG (DEG)	PRED CONC (PPM)	CONC/LINK (PPM) A	B	C	D	E	F	G	H
1. Recpt 1	267.	10.9	1.1	.1	.0	.0	.0	.0	.0	.0
2. Recpt 2	267.	10.8	.0	.8	.3	.2	.0	.0	.0	.0
3. Recpt 3	266.	10.8	.0	.4	.5	.3	.0	.0	.0	.0
4. Recpt 4	94.	10.8	.3	.5	.4	.0	.0	.0	.0	.0
5. Recpt 5	93.	10.8	.2	.3	.8	.0	.0	.0	.0	.0
6. Recpt 6	93.	11.0	.0	.0	.1	1.2	.0	.0	.0	.0
7. Recpt 7	273.	11.2	.3	.1	.0	.1	.0	.0	.0	.0
8. Recpt 8	273.	10.8	.0	.1	.2	.3	.0	.0	.0	.0
9. Recpt 9	273.	10.8	.0	.0	.2	.4	.0	.0	.0	.0
10. Recpt 10	87.	10.8	.4	.2	.0	.0	.0	.0	.0	.0
11. Recpt 11	87.	10.9	.3	.2	.1	.0	.0	.0	.0	.0
12. Recpt 12	87.	11.0	.1	.0	.1	.4	.0	.0	.0	.0
13. Recpt 13	178.	9.5	.0	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	177.	9.6	.0	.0	.0	.0	.0	.0	.0	.0
15. Recpt 15	100.	9.6	.3	.0	.0	.0	.0	.0	.0	.0
16. Recpt 16	81.	9.6	.3	.0	.0	.0	.0	.0	.0	.0
17. Recpt 17	3.	9.4	.0	.0	.0	.0	.0	.0	.0	.0
18. Recpt 18	3.	9.3	.0	.0	.0	.0	.1	.0	.0	.0
19. Recpt 19	261.	9.6	.0	.0	.0	.4	.0	.0	.0	.0
20. Recpt 20	280.	9.6	.0	.0	.0	.3	.0	.0	.0	.0

CALINE4: CALIFORNIA LINE SOURCE DISPERSION MODEL
JUNE 1989 VERSION
PAGE 4

JOB: Year 2030 - Pomerado & Willow Creek
RUN: Hour 1 (WORST CASE ANGLE)
POLLUTANT: Carbon Monoxide

IV. MODEL RESULTS (WORST CASE WIND ANGLE) (CONT.)

RECEPTOR	*	CONC/LINK (PPM) I	J	K	L	M	N	O	P	Q	R	S	T
1. Recpt 1	*	.1	.0	.2	.4	.0	.0	.0	.0	.0	.0	.0	.0
2. Recpt 2	*	.3	.2	.1	.0	.0	.0	.0	.0	.0	.0	.0	.0
3. Recpt 3	*	.4	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4. Recpt 4	*	.0	.0	.3	.5	.0	.0	.0	.0	.0	.0	.0	.0
5. Recpt 5	*	.0	.1	.2	.3	.0	.0	.0	.0	.0	.0	.0	.0
6. Recpt 6	*	.4	.2	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
7. Recpt 7	*	.0	.0	.1	1.5	.0	.0	.0	.0	.0	.0	.0	.0
8. Recpt 8	*	.2	.3	.9	.0	.0	.0	.0	.0	.0	.0	.0	.0
9. Recpt 9	*	.4	.5	.5	.0	.0	.0	.0	.0	.0	.0	.0	.0
10. Recpt 10	*	.0	.5	.5	.4	.0	.0	.0	.0	.0	.0	.0	.0
11. Recpt 11	*	.0	.9	.3	.3	.0	.0	.0	.0	.0	.0	.0	.0
12. Recpt 12	*	1.3	.1	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0
13. Recpt 13	*	.0	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.0
14. Recpt 14	*	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0
15. Recpt 15	*	.0	.0	.0	.4	.0	.0	.0	.0	.0	.0	.1	.0

16.	Recpt 16 *	.0	.0	.0	.5	.0	.0	.0	.0	.0	.0	.0	.0
17.	Recpt 17 *	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
18.	Recpt 18 *	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
19.	Recpt 19 *	.3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0
20.	Recpt 20 *	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0

Greenhouse Gas Analysis for The Glen at Scripps Ranch Project, San Diego, California Project #264823

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TABLE OF CONTENTS

1.0 Summary **1**

2.0 Introduction **1**

2.1 Understanding Global Climate Change **1**

2.2 Greenhouse Gases of Primary Concern **2**

3.0 Project Description **3**

4.0 Existing Conditions **7**

4.1 Environmental Setting **7**

4.1.1 State and Regional GHG Inventories 7
4.1.2 Existing On-site Emissions 9
4.1.3 Consequences of Global Climate Change 9

4.2 Regulatory Background **10**

4.2.1 International 10
4.2.2 Federal 12
4.2.3 State 15
4.2.4 Local 27

5.0 Significance Criteria and Analysis Methodologies **30**

5.1 Determining Significance **30**

5.1.1 900 $MTCO_2E$ Screening Criterion 31
5.1.2 Further Analysis Demonstrating a 28.3 Percent Reduction in BAU 31

5.2 Methodology and Assumptions **33**

5.2.1 Defining Project Characteristics and Land Use 34
5.2.2 Estimating Construction Emissions 34
5.2.3 Estimating Vehicle Emissions 35
5.2.4 Estimating Energy Use Emissions 36
5.2.5 Estimating Area Source Emissions 37
5.2.6 Estimating Water and Wastewater Emissions 38
5.2.7 Estimating Solid Waste Emissions 38

6.0 Impact Analysis **38**

6.1 Cumulative GHG Emissions **39**

6.1.1 Impacts 39
6.1.2 Significance of Impacts 44
6.1.3 Mitigation, Monitoring, and Reporting 44

TABLE OF CONTENTS (CONT.)

6.2 Consistency with Adopted Plans, Policies, and Regulations 45

6.2.1 Impacts 45
6.2.2 Significance of Impacts 45
6.2.3 Mitigation, Monitoring, and Reporting 45

7.0 Conclusions and Recommendations 46

8.0 References Cited 46

FIGURES

1: Regional Location 4
2: Aerial Photograph of Project Site and Vicinity 5
3: Proposed Site Plan 6

TABLES

1: Global Warming Potentials and Atmospheric Lifetimes 2
2: California GHG Emissions by Sector in 1990, 2000, 2004 and 2008 8
3: San Diego County GHG Emissions by Sector in 2006 9
4: CARB Scoping Plan-recommended GHG Reduction Measures 18
5: California BAU 2020 GHG Emissions Forecast 31
6: San Diego Gas & Electric Intensity Factors 34
7: BAU GHG Emissions in 2020 41
8: Proposed Project GHG Emissions in 2020 43
9: Proposed Project and BAU GHG Emissions in 2020 44

ATTACHMENTS

1: CalEEMod Output – BAU Project in 2020
2: CalEEMod Output – Proposed Project in 2020
3: GHG Emissions Reductions Calculations

1.0 Summary

The proposed The Glen at Scripps Ranch project would construct a continuing care retirement community consisting of 400 non-acute assisted living units, 50 acute assisted living units (16 of which are memory care units), and 60 skilled nursing beds on a 53-acre site located at 10455 Pomerado Road within the Scripps Miramar Ranch Community Plan area in the city of San Diego, California.

As detailed below, the proposed project would reduce greenhouse gas (GHG) emissions by more than 28.3 percent when compared to business as usual (BAU). Emission reduction measures included in the project design include implementing transportation services, constructing buildings in accordance with 2013 Title 24 energy efficiency requirements, increasing lighting efficiency by 25 percent, reducing water consumption by 30 percent, and instituting recycling and composting services to reduce the amount of waste disposed of by 30 percent. With these project design features, GHG emissions would be less than significant. Additionally, the proposed project is consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development.

2.0 Introduction

To evaluate the incremental effect of the proposed project on statewide emissions and global climate change, it is important to have a basic understanding of the nature of the global climate change problem.

2.1 Understanding Global Climate Change

Global climate change is a change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. The earth's climate is in a state of constant flux with periodic warming and cooling cycles. Extreme periods of cooling are termed "ice ages," which may then be followed by extended periods of warmth. For most of the earth's geologic history, these periods of warming and cooling have been the result of many complicated interacting natural factors that include: volcanic eruptions that spew gases and particles (dust) into the atmosphere; the amount of water, vegetation, and ice covering the earth's surface; subtle changes in the earth's orbit; and the amount of energy released by the sun (sun cycles). However, since the beginning of the Industrial Revolution around 1750, the average temperature of the earth has been increasing at a rate that is faster than can be explained by natural climate cycles alone.

With the Industrial Revolution came an increase in the combustion of carbon-based fuels such as wood, coal, oil, natural gas, and biomass. Industrial processes have also created emissions of substances not found in nature. This in turn has led to a marked increase in the emissions of gases shown to influence the world's climate. These gases, termed "greenhouse" gases, influence the amount of heat trapped in the earth's atmosphere. Because recently observed increased concentrations of GHGs in the atmosphere are related to increased emissions resulting from human activity, the current cycle of "global warming" is generally believed to be largely due to human activity. Of late, the issue of global warming or global climate change has arguably become the most important and widely debated environmental issue in the United States and the world. Because it is the collective of human actions taking place throughout the world that contributes to climate change, it is quintessentially a global or cumulative issue.

2.2 Greenhouse Gases of Primary Concern

There are numerous GHGs, both naturally occurring and manmade. Table 1 summarizes some of the most common. Each GHG has variable atmospheric lifetime and global warming potential.

TABLE 1
GLOBAL WARMING POTENTIALS (GWPs) AND ATMOSPHERIC LIFETIMES (YEARS)

Gas	Atmospheric Lifetime	100-year GWP	20-year GWP	500-year GWP
Carbon dioxide (CO_2)	50–200	1	1	1
Methane (CH_4)*	12±3	21	56	6.5
Nitrous oxide (N_2O)	120	310	280	170
HFC-23	264	11,700	9,100	9,800
HFC-32	5.6	650	2,100	200
HFC-125	32.6	2,800	4,600	920
HFC-134a	14.6	1,300	3,400	420
HFC-143a	48.3	3,800	5,000	1,400
HFC-152a	1.5	140	460	42
HFC-227ea	36.5	2,900	4,300	950
HFC-236fa	209	6,300	5,100	4,700
HFC-43-10mee	17.1	1,300	3,000	400
CF_4	50,000	6,500	4,400	10,000
C_2F_6	10,000	9,200	6,200	14,000
C_3F_8	2,600	7,000	4,800	10,100
C_4F_{10}	2,600	7,000	4,800	10,100
c-C_4F_8	3,200	8,700	6,000	12,700
C_5F_{12}	4,100	7,500	5,100	11,000
C_6F_{14}	3,200	7,400	5,000	10,700
SF_6	3,200	23,900	16,300	34,900

SOURCE: U.S. EPA 2010, Annex 6.

*The methane global warming potential includes the direct effects and those indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

The atmospheric lifetime of the GHG is the average time the molecule stays stable in the atmosphere. Most GHGs have long atmospheric lifetimes, staying in the atmosphere hundreds or thousands of years. The potential of a gas to trap heat and warm the atmosphere is measured by its global warming potential (GWP). Specifically, GWP is defined as (U.S. Environmental Protection Agency [U.S. EPA] 2010):

> the cumulative radiative forcing—both direct and indirect effects—integrated over a period of time from the emission of a unit mass of gas relative to some reference gas.

The reference gas for establishing GWP is carbon dioxide (CO_2), which—as shown in Table 1—consequently has a GWP of 1. As an example, methane (CH_4), while having a shorter atmospheric lifetime than carbon dioxide, has a 100-year GWP of 21, which means that it has a greater global warming effect than carbon dioxide on a molecule-by-molecule basis.

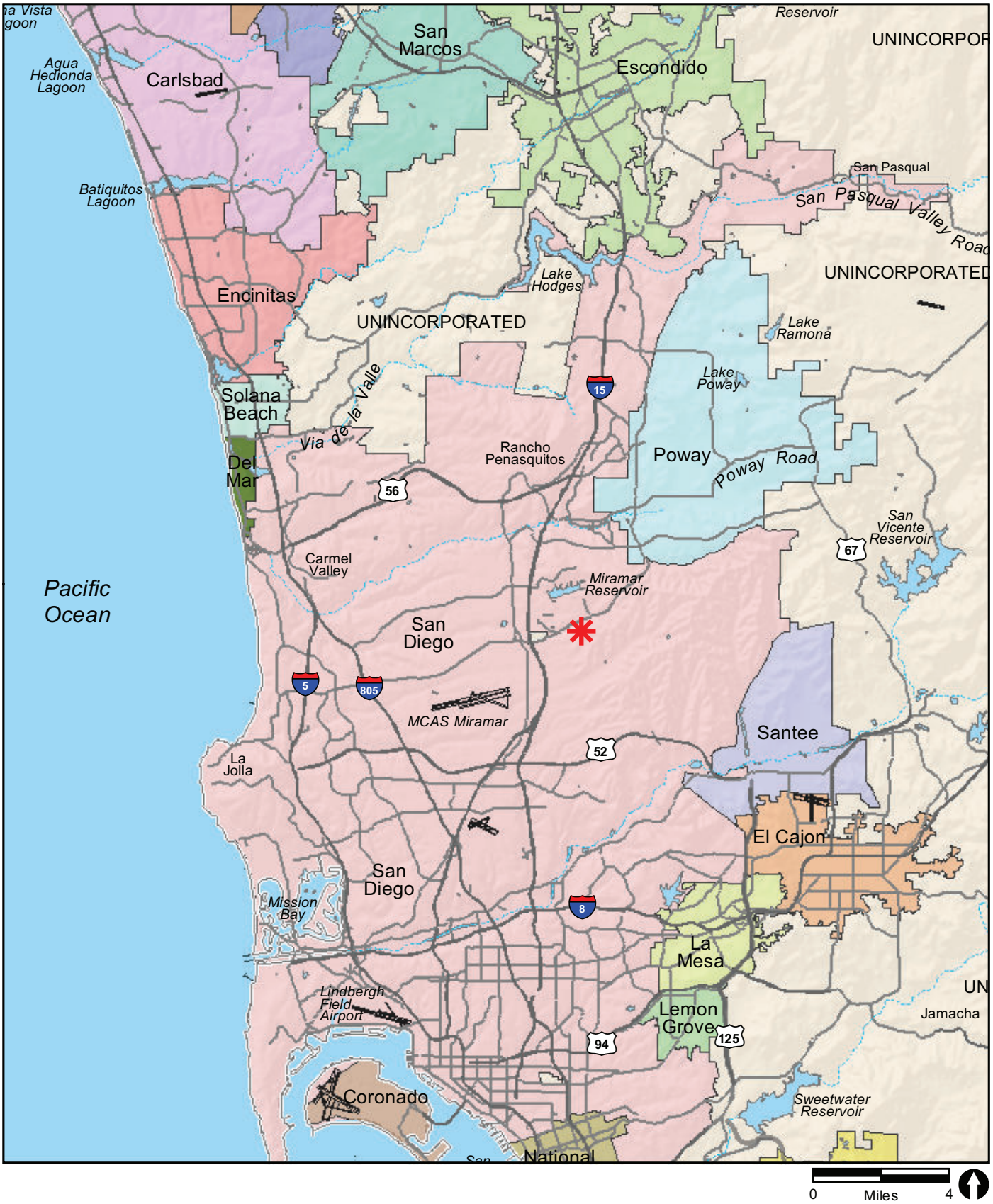
Of the gases listed in Table 1, CO_2, CH_4, and nitrous oxide (N_2O) are produced by both biogenic (natural) and anthropogenic (human) sources. The remaining gases occur solely as the result of human processes. Hydrofluorocarbons (HFCs) are synthetic, man-made chemicals used as substitutes for ozone-depleting chlorofluorocarbons used in air conditioners and as refrigerants. Perfluorocarbons (PFCs) such as tetrafluoromethane (CF_4) are used primarily in aluminum production and semiconductor manufacture. Sulfur hexafluoride (SF_6) is used for insulation in electric power transmission and distribution equipment. HFCs, PFCs, and sulfur hexafluoride are not of primary concern to the proposed project.

CO_2, CH_4 and N_2O are the GHGs of primary concern in this analysis. Carbon dioxide would be emitted by the proposed project due to the combustion of fossil fuels in vehicles (including construction), from electricity generation and natural gas consumption, water use, and from solid waste disposal. Smaller amounts of methane and nitrous oxide would be emitted from the same project operations.

3.0 Project Description

The proposed project is located at 10455 Pomerado Road in San Diego, California. A portion of the 53-acre site currently contains a baseball field. A majority of the site is undeveloped open space. The proposed project would construct 400 non-acute assisted living units, 50 acute assisted living units (16 of which are memory care units), and 60 skilled nursing beds.

Figure 1 shows the regional location of the proposed project. Figure 2 shows an aerial photograph of the project area and vicinity. Figure 3 shows the proposed site plan. The 400 non-acute assisted living units include 64 villa units, 48 garden terrace units, and



Project Location

RECON

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FIGURE 1

Regional Location

Image Source: Copyright 2011, Aerials Express, All Rights Reserved (flown March 2010)

0 Feet 700

Project Boundary

FIGURE 2

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Aerial Photograph of Project and Vicinity

Image Source: Copyright 2011, Aerials Express, All Rights Reserved (flown March 2010)

0 Feet 300

Project Boundary

FIGURE 3

Site Plan

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288 apartment style units as shown in Figure 3. The 50 acute assisted living units and the 60 skilled nursing beds would be located within the Health Center. The proposed project would also include a facilities building and a common building consisting of learning centers, lecture hall, library, auditorium, fine dining, fine arts facilities, tennis court, gardens, fitness center, and pool.

The proposed project would implement the following GHG-reducing project design features:

- Implement shuttle, van, and car service.
- Construction in accordance with 2013 Title 24 energy code.
- Install high efficiency lighting to reduce lighting energy consumption by 25 percent.
- Reduce water consumption by 30 percent.
- Institute recycling and composting services to reduce the amount of waste disposed of by 30 percent.

4.0 Existing Conditions

4.1 Environmental Setting

4.1.1 State and Regional GHG Inventories

The California Air Resources Board (CARB) performs statewide GHG inventories. The inventory is divided into nine broad sectors of economic activity: agriculture, commercial, electricity generation, forestry, high GWP emitters, industrial, recycling and waste, residential, and transportation. Emissions are quantified in million metric tons of CO_2 equivalent ($MMTCO_2E$). Table 2 shows the estimated statewide GHG emissions for the years 1990, 2000, 2004, and 2008.

TABLE 2
CALIFORNIA GHG EMISSIONS BY SECTOR IN 1990, 2000, 2004, AND 2008

Sector	1990 Emissions in $MMTCO_2E$ (% total)[1]	2000 Emissions in $MMTCO_2E$ (% total)[1]	2004 Emissions in $MMTCO_2E$ (% total)[1]	2008 Emissions in $MMTCO_2E$ (% total)[1]
Sources				
Agriculture	23.4 (5%)	25.44 (6%)	28.82 (6%)	28.06 (6%)
Commercial	14.4 (3%)	12.80 (3%)	13.20 (3%)	14.68 (3%)
Electricity Generation	110.6 (26%)	103.92 (23%)	119.96 (25%)	116.35 (24%)
Forestry (excluding sinks)	0.2 (<1%)	0.19 (<1%)	0.19 (<1%)	0.19 (<1%)
High GWP	--	10.95 (2%)	13.57 (3%)	15.65 (3%)
Industrial	103.0 (24%)	97.27 (21%)	90.87 (19%)	92.66 (19%)
Recycling and Waste	--	6.20 (1%)	6.23 (1%)	6.71 (1%)
Residential	29.7 (7%)	30.13 (7%)	29.34 (6%)	28.45 (6%)
Transportation	150.7 (35%)	171.13 (37%)	181.71 (38%)	174.99 (37%)
Unspecified Remaining[2]	1.3 (<1%)	--	--	--
Subtotal	*433.3*	*458.03*	*483.89*	*477.74*
Sinks				
Forestry Sinks	-6.7 (--)	-4.72 (--)	-4.32 (--)	-3.98 (--)
TOTAL	**426.6**	**453.31**	**479.57**	**473.76**

SOURCE: CARB 2007, 2010a.
[1] Percentages may not total 100 due to rounding.
[2] Unspecified fuel combustion and ozone depleting substance (ODS) substitute use, which could not be attributed to an individual sector.

As shown in Table 2, statewide GHG emissions totaled 433 $MMTCO_2E$ in 1990, 458 $MMTCO_2E$ in 2000, 484 $MMTCO_2E$ in 2004, and 478 $MMTCO_2E$ in 2008. According to data from the CARB, it appears that statewide GHG emissions peaked in 2004 and are now beginning to decrease (CARB 2010a). Transportation-related emissions consistently contribute the most GHG emissions, followed by electricity generation and industrial emissions.

The forestry sector is unique because it not only includes emissions associated with harvest, fire, and land use conversion (sources), but also includes removals of atmospheric CO_2 (sinks) by photosynthesis, which is then bound (sequestered) in plant tissues. As seen in Table 2, the forestry sector consistently removes more CO_2 from the atmosphere statewide than it emits. As a result, although decreasing over time, this sector represents a net sink, removing a net 6.5 $MMTCO_2E$ from the atmosphere in 1990, a net 4.5 $MMTCO_2E$ in 2000, a net 4.1 $MMTCO_2E$ in 2004, and a net 3.8 $MMTCO_2E$ in 2008.

A San Diego regional emissions inventory was prepared by the University of San Diego School of Law, Energy Policy Initiative Center (EPIC) that took into account the unique characteristics of the region. Their 2006 emissions inventory for San Diego is duplicated below in Table 3. The sectors included in this inventory are somewhat different from those in the statewide inventory.

TABLE 3
SAN DIEGO COUNTY GHG EMISSIONS BY SECTOR IN 2006

Sector	2006 Emissions in $MMTCO_2E$ (% total)[1]	
Agriculture/Forestry/Land Use	0.7	(2%)
Waste	0.7	(2%)
Electricity	9.0	(25%)
Natural Gas Consumption	3.0	(8%)
Industrial Processes & Products	1.6	(5%)
On-Road Transportation	16.0	(45%)
Off-Road Equipment & Vehicles	1.3	(4%)
Civil Aviation	1.7	(5%)
Rail	0.3	(<1%)
Water-Borne Navigation	0.127	(<0.5%)
Other Fuels/Other	1.1	(3%)
TOTAL	**35.5**	

SOURCE: University of San Diego 2008.
[1] Percentages may not total 100 due to rounding.

Similar to the statewide emissions, transportation-related GHG emissions contributed the most countywide, followed by emissions associated with energy use.

4.1.2 Existing On-site Emissions

A portion of the 53-acre site currently contains a baseball field. A majority of the site is undeveloped open space. It was assumed that the project site is not currently a measurable source of GHG emissions.

4.1.3 Consequences of Global Climate Change

CARB projects a future statewide GHG emissions increase of more than 23 percent (from 2004) by 2020 given current trends (CARB 2008a). The 2008 EPIC study predicts a countywide increase to 43 $MMTCO_2E$, or roughly 20 percent (from 2006) by 2020, given a business-as-usual (BAU) trajectory. Global GHG emissions forecasts also predict similar substantial increases, given a BAU trajectory.

The potential consequences of global climate change on the San Diego region are far reaching. The Climate Scenarios analysis report, published in 2006 by the California Climate Change Center, uses a range of emissions scenarios to project a series of potential warming ranges (low, medium, or high temperature increases) that may occur in California during the 21st century. Throughout the state and the region, global climate and local microclimate changes could cause an increase in extreme heat days; higher concentrations, frequency, and duration of air pollutants; an increase in wildfires; more intense coastal storms; sea level rise; impacts to water supply and water quality through reduced snowpack

and saltwater influx; public health impacts; impacts to near-shore marine ecosystems; reduced quantity and quality of agricultural products; pest population increases; and altered natural ecosystems and biodiversity.

4.2 Regulatory Background

In response to rising concern associated with increasing GHG emissions and global climate change impacts, several plans and regulations have been adopted at the international, national, and state levels with the aim of reducing GHG emissions.

4.2.1 International

4.2.1.1 Intergovernmental Panel on Climate Change

In response to growing concern about pollutants in the upper atmosphere and the potential problem of climate change, the World Meteorological Organization and the United Nations Environment Programme (UNEP) established the Intergovernmental Panel on Climate Change (IPCC) in 1988. The IPCC was tasked with assessing the scientific, technical, and socioeconomic information relevant to understanding the scientific basis for human-induced climate change, its potential impacts, and options for adaptation and mitigation. The most recent reports of the IPCC have emphasized the scientific consensus that real and measurable changes to the climate are occurring, that they are caused by human activity, and that significant adverse impacts on the environment, economy, and human health and welfare are unavoidable.

4.2.1.2 United Nations Framework Convention on Climate Change

In 1994, the Unites States joined a number of other nations in signing an international treaty known as the United Nations Framework Convention on Climate Change (UNFCCC). The UNFCCC recognized that global climate is a shared resource that can be affected by industrial and other emissions of GHGs and set an overall framework for intergovernmental efforts to tackle the challenges posed by global climate change.

As with the Montreal Protocol, UNFCCC was ratified by 191 countries including the United States. Under this treaty, governments were to (UNFCCC 2007a):

- gather and share information on GHG emissions, national policies, and best practices;
- launch national strategies for addressing GHG emissions and adapting to expected impacts; and

- cooperate with other nations in preparing for adaptation to the impacts of climate change.

The UNFCCC divided countries into three main groups according to differing commitments based on economic strength, vulnerability to adverse climate change impacts, and capacity to respond or adapt to climate change effects. The stronger economic nations, including the United States, were to provide financial and technological support to developing countries to enable them to undertake emissions reduction activities and to help them adapt to adverse effects of climate change.

The UNFCCC was enacted in March 1994; however, it generally lacked powerful, legally binding measures. This led to the development of the Kyoto Protocol.

4.2.1.3 Kyoto Protocol to the UNFCCC

Knowing that the UNFCCC did not contain the legally binding measures that would be required to meaningfully address global climate change, a conference of the UNFCCC signatory nations was held in Berlin in 1995 that launched a new round of discussions to determine more detailed and stronger commitments for industrialized countries (the Berlin Mandate). After 2.5 years of negotiations, the Kyoto Protocol was adopted in December 1997 (UNFCCC 2007b). While the 1997 Kyoto Protocol shared the UNFCCC's objectives, it committed signatories to individual, legally binding targets to limit or reduce their GHG emissions. By March 1999, 84 countries, including the United States, had signed the Kyoto Protocol (UNFCCC 2009).

Only Parties to the UNFCCC that have also become Parties to the Kyoto Protocol are bound by the Kyoto Protocol's commitments. Governments become Parties to the Protocol by ratifying, accepting, approving, or acceding to it. Because of the complexity of the negotiations and uncertainty associated with the rules or how they would operate, several of the signing countries, including the United States, were reluctant to actually ratify the Protocol. Therefore, a new round of negotiations was undertaken to flesh out the Kyoto Protocol's rulebook. These negotiations concluded with the adoption of the Marrakesh Accords in 2001. With the adoption of the Marrakesh Accords, the Protocol was enacted in February 2005, and by July 2009 184 governments had become Parties to the Protocol (UNFCCC 2007b, 2009). In December 2009, a Copenhagen Accord was held to address global climate change issues in the future; however, no further measures were adopted. The 2010 United Nations Climate Change Conference occurred in Cancun, Mexico and resulted in 26 agreements related to GHG emission reductions (Cancun Accords). The most recent UN Climate Change Conference occurred in Durban, South Africa, and resulted in an agreement of a legally binding treaty, called the Durban Platform, which will be prepared by 2015 and take effect in 2020. The Durban Platform entails the continuation of the Kyoto protocol in the interim.

As of September 2011, 191 governments had signed and ratified the protocol. Although a signer to the Kyoto Protocol, the United States has not ratified the Kyoto Protocol to date because it does not mandate emissions reductions from all countries including several developing countries whose GHG emissions are expected to exceed emissions from developed countries within the next 25 years (U.S. EPA 2007a). In December 2011, Canada declared its intention to withdraw from the Kyoto Protocol. The Durban Platform includes developing countries, as well as the United States.

4.2.2 Federal

4.2.2.1 Clean Air Act, Title VI—Stratospheric Ozone Protection

Title VI of the Clean Air Act was established to protect stratospheric ozone by phasing out the manufacture of ozone-depleting substances and by restricting their use and distribution (U.S. EPA 2007b). While successful in phasing out ozone depleting substances, Title VI has inadvertently led to an increase in the production and use of non-ozone depleting substitutes such as HFCs that are global warming gases with high GWPs and relatively long atmospheric lifetimes.

4.2.2.2 Climate Change Action Plan

Adopted in 1993, the U.S. Climate Change Action Plan (CCAP) consists of voluntary actions to reduce all significant GHGs from all economic sectors. Backed by federal funding, the CCAP supports cooperative partnerships between the government and the private sector in establishing flexible and cost-effective ways to reduce GHG emissions. The CCAP encourages investments in new technologies, but also relies on previous actions and programs focused on saving energy, reducing transportation emissions, improving forestry management, and reducing waste. With respect to energy and transportation-related GHG emissions reductions, the CCAP includes the following:

- Energy Demand Actions to accelerate the use of existing energy saving technologies and encourage the development of more advanced technologies. Commercial actions focus on installing efficient heating and cooling systems in commercial buildings and upgrading to energy-efficient lighting systems (the Green Lights program). The State Buildings Energy Incentive Fund provides funding to states for the development of public building energy management programs. Residential actions focus on developing new residential energy standards and building codes and providing money-saving energy efficient options to homeowners.

- Energy Supply Actions to reduce emissions from energy supply. These actions focus on increasing the use of natural gas, which emits less CO_2 than coal or oil, and investing in renewable energy sources, such as solar and wind power, which result in zero net CO_2

emissions. Energy supply strategies also focus on reducing the amount of energy lost during distribution from power plants to consumers.

- Transportation Actions to reduce transportation-related emissions are focused on investing in cleaner fuels and more efficient technologies, and reducing vehicle miles traveled (VMT). In addition, the U.S. EPA and Department of Transportation (DOT) are to draft guidance documents for reducing VMTs for use in developing local clean air programs.

4.2.2.3 GHG Emissions Intensity Reduction Programs

The GHG Emissions Intensity is the ratio of GHG emissions to economic output. In 2000, the U.S. GHG Emissions Intensity was 722 metric tons per million dollars of gross domestic product (GDP; World Resources Institute 2006). In February 2002, the U.S. set a goal to reduce the 2002 GHG Emissions Intensity by 18 percent by 2012, which would lower emissions from 670 to 553 metric tons per million dollars of GDP, through various reduction programs. A number of ongoing voluntary programs have thus been instituted to reduce nationwide GHG emissions. These include (U.S. EPA 2007c):

- **Climate VISION Partnership:** In 2003, this program established a partnership between 12 major industries and the U.S. Department of Energy (U.S. DOE), the U.S. EPA, the DOT and the U.S. Department of Agriculture. The involved industries include electric utilities; petroleum refiners and natural gas producers; automobile, iron and steel, chemical and magnesium manufacturers; forest and paper producers; railroads; and cement, mining, aluminum, and semiconductor industries. These industries are working with the four agencies to reduce their GHG emissions by developing cost-effective solutions, measuring and reporting emissions, developing strategies for the adoption of advanced technologies, and implementing voluntary mitigation actions.

- **Cleaner Energy–Environment State Partnership:** This program established a partnership between federal and state agencies to support states in implementing strategies and policies to promote renewable energy, energy efficiency, and other cost-effective clean energies. States receive technical assistance from the U.S. EPA.

- **Climate Leaders:** The Climate Leaders program was established in 2002. Climate Leaders is a U.S. EPA voluntary program that establishes partnerships with individual companies. Together they establish individual corporate goals for GHG emissions reduction and monitor their emissions to measure progress. On September 15, 2010, the U.S. EPA announced that the Climate Leaders program will phase down the services it offers because climate programs operated by states are now robust enough to service individual companies that wish to continue to advance climate leadership through reporting and reduction goals.

- **Energy Star:** Energy Star was established in 1992 by the U.S. EPA and became a joint program with the U.S. DOE in 1996. Energy Star is a program that labels energy efficient products with the Energy Star label. Energy Star enables consumers to choose energy-efficient and cost-saving products. More than 1,400 manufacturers use Energy Star labels on their energy-efficient products.

- **Green Power Partnership:** This program establishes partnerships between the U.S. EPA, and companies and organizations that have bought or are considering buying green power, which is power generated from renewable energy sources. The U.S. EPA offers recognition and promotion to organizations that replace electricity consumption with green power.

4.2.2.4 Corporate Average Fuel Economy Standards

The federal Corporate Average Fuel Economy (CAFE) standards determine the fuel efficiency of certain vehicle classes in the U.S. While the standards had not changed since 1990, as part of the Energy and Security Act of 2007, the CAFE standards were increased in 2007 for new light-duty vehicles to 35 miles per gallon (mpg) by 2020. In May 2009, President Obama announced further plans to increase CAFE standards to require light duty vehicles to meet an average fuel economy of 35.5 mpg by 2016. In August 2012, fuel economy standards were further increased to 54.5 mpg for cars and light-duty trucks by Model Year 2025. This will nearly double the fuel efficiency of those vehicles compared to new vehicles currently on our roads. With improved gas mileage, fewer gallons of transportation fuel would be combusted to travel the same distance, thereby reducing nationwide GHG emissions associated with vehicle travel.

4.2.2.5 Mandatory Reporting of GHGs Rule

Starting January 1, 2010, large emitters of heat-trapping gases began collecting GHG data and reporting their annual GHG emissions to the U.S. EPA. The purpose of the rule is to collect accurate and timely GHG data to inform future policy decisions. The first reports were generally due March 31, 2011, with extensions available under certain circumstances to September 30, 2011. Under this reporting rule, approximately 10,000 facilities are covered, accounting for nearly 85 percent of the nation's GHG emissions. This mandatory reporting applies to fossil fuel and industrial GHG suppliers, motor vehicle and engine manufacturers, and facilities that emit 25,000 metric tons of CO_2 equivalent ($MTCO_2E$) or more per year. Vehicle and engine manufacturers outside of the light-duty sector are required to begin phasing in their GHG reporting starting with engine/vehicle model year 2011.

4.2.3 State

The State of California has adopted a number of plans and regulations aimed at identifying statewide and regional GHG emissions caps, GHG emissions reduction targets, and actions and timelines to achieve the target GHG reductions.

4.2.3.1 EO S-3-05—Statewide GHG Emission Targets

This executive order (EO) signed by Governor Schwarzenegger on June 1, 2005, established the following GHG emission reduction targets for the state of California:

- by 2010, reduce GHG emissions to 2000 levels;
- by 2020 reduce GHG emissions to 1990 levels;
- by 2050 reduce GHG emissions to 80 percent below 1990 levels.

This executive order also directs the secretary of the California Environmental Protection Agency (CalEPA) to oversee the efforts made to reach these targets, and to prepare biannual reports on the progress made toward meeting the targets and on the impacts to California related to global warming, including impacts to water supply, public health, agriculture, the coastline, and forestry. With regard to impacts, the report shall also prepare and report on mitigation and adaptation plans to combat the impacts. The first Climate Action Team Assessment Report was produced in March 2006 and has been updated every two years, most recently in December 2010.

4.2.3.2 AB 32—California Global Warming Solutions Act

In response to Executive Order S-3-05, the California legislature passed Assembly Bill (AB) 32 (Nuñez), the “California Global Warming Solutions Act of 2006,” which was signed by the governor on September 27, 2006. It requires the CARB to adopt rules and regulations that would reduce GHG emissions to 1990 levels by 2020. The CARB is also required to publish a list of discrete GHG emission reduction measures.

Specifically, AB 32, the California Global Warming Solutions Act of 2006, requires CARB to (State of California 2006):

- Establish a statewide GHG emissions cap for 2020, based on 1990 emissions by January 1, 2008.
  - ü In December 2007, CARB approved a 2020 emission limit of 427 million metric tons of CO_2 equivalent.
- Adopt mandatory reporting rules for significant sources of GHGs by January 1, 2009.
  - ü In December 2007, CARB adopted regulations requiring the largest industrial sources to report and verify their GHG emissions. Facilities began tracking

emissions in 2008 and reports were due June 1, 2009. Emissions reporting for 2008 was allowed to be based on best available data. Beginning in 2010, emissions reports became more rigorous and subject to third-party verification.

This action builds on the earlier Senate Bill (SB) 177 (Sher) enacted in 2000, which established a nonprofit California Climate Action Registry for the purpose of administering a voluntary GHG emissions registry.

- Adopt a plan by January 1, 2009 indicating how emission reductions will be achieved from significant GHG sources via regulations, market mechanisms, and other actions.
  - ü A Climate Change Scoping Plan (Scoping Plan) was approved on December 12, 2008. The Scoping Plan contains the main strategies California will implement to achieve a reduction of 174 million $MTCO_2E$ GHG emissions, or approximately 29 percent from the state's projected 2020 emission level of 596 million $MTCO_2E$ under a BAU scenario. The Scoping Plan is discussed in detail in Section 4.2.3.3 below.
- Adopt regulations to achieve the maximum technologically feasible and cost-effective reductions in GHG, including provisions for using both market mechanisms and alternative compliance mechanisms.
- Convene an Environmental Justice Advisory Committee and an Economic and Technology Advancement Advisory Committee to advise CARB.
  - ü In January 2007, the CARB appointed a 10-member Environmental Justice Advisory Committee and appointed members to the Economic and Technology Advancement Advisory Committee.
- Ensure public notice and opportunity for comment for all CARB actions.
  - ü A number of CARB documents, including the 2020 Emissions Forecast, the Scoping Plan, and the Draft Recommended Approaches for Setting Interim Significance Thresholds, have been circulated for public review and comment.
- Prior to imposing any mandates or authorizing market mechanisms, CARB must evaluate several factors, including but not limited to impacts on California's economy, the environment, and public health; equity between regulated entities; electricity reliability; conformance with other environmental laws; and ensure that the rules do not disproportionately impact low-income communities.

4.2.3.3 Climate Change Scoping Plan

As directed by AB 32, the Climate Change Scoping Plan prepared by CARB in December 2008 includes measures to reduce statewide GHG emissions to 1990 levels by 2020. These reductions are what CARB identified as necessary to reduce forecasted BAU 2020

emissions. CARB will update the Scoping Plan at least once every 5 years to allow evaluation of progress made and to correct the Scoping Plan's course where necessary.

In 2008, CARB estimated annual BAU 2020 emissions to reach 596 $MMTCO_2E$. To achieve 1990 emissions levels of 427 $MMTCO_2E$, a 169 $MMTCO_2E$ reduction was thus determined to be needed by 2020. As indicated in Table 4, the majority of reductions is directed at the sectors with the largest GHG emissions contributions—transportation and electricity generation—and involve statutory mandates affecting vehicle or fuel manufacture, public transit, and public utilities.

CARB also lists several other recommended measures which will contribute toward achieving the 2020 statewide reduction goal, but whose reductions are not (for various reasons, including the potential for double counting) additive with the measures listed in Table 4. These include state and local government operations measures, green building, mandatory commercial recycling and other additional waste and recycling measures, water sector measures, and methane capture at large dairies.

The Scoping Plan reduction measures and complementary regulations are described further in the following sections, and are grouped under the two headings of Transportation-related Measures and Non-transportation-related Measures as representative of the sectors to which they apply.

In 2010, CARB revised its 2020 BAU projections to account for the economic downturn and other factors. CARB's revised estimate calculated that BAU 2020 emissions would reach approximately 545 $MMTCO_2E$ without the Scoping Plan reduction measures (Light-duty Vehicle GHG Emissions Standards and the Renewable Portfolios Strategy [RPS]), accounting for 38 $MMTCO_2E$. The new 2020 baseline emissions (accounting for Pavley I and the RPS) would be approximately 507 $MMTCO_2E$ per year. Thus, in order to reach the 1990 emissions level of 427 $MMTCO_2E$, an 80 $MMTCO_2E$ reduction was determined to be needed by 2020 (CARB 2010b).

4.2.3.4 Transportation-related Emissions Reductions

Transportation accounts for the largest share of the state's GHG emissions. Accordingly, a large share of the reduction of GHG emissions from the recommended measures comes from this sector. To address emissions from vehicles, CARB is proposing a comprehensive three-prong strategy: reducing GHG emissions from vehicles, reducing the carbon content of the fuel these vehicles burn, and reducing the miles these vehicles travel.

TABLE 4
CARB SCOPING PLAN-RECOMMENDED GHG REDUCTION MEASURES

Recommended Reduction Measures	Reductions Counted Towards 2020 Target In $MMTCO_2E$	(% total) [2]
ESTIMATED REDUCTIONS RESULTING FROM THE COMBINATION OF CAPPED SECTORS AND COMPLEMENTARY MEASURES	**146.7**	
California Light-Duty Vehicle Greenhouse Gas Standards • Implement Pavley Standards • Develop Pavley II Light-duty Vehicle Standards (LEV III)	31.7	(22%)
Energy Efficiency • Building/appliance efficiency, new programs, etc. • Increase CHP generation by 30,000 gigaWatts (GWh) • Solar Water Heating (AB 1470 goal)	26.3	(18%)
Renewables Portfolio Standard (RPS) (33% by 2020)	21.3	(14%)
Low Carbon Fuel Standard	15.0	(10%)
Regional Transportation-related GHG Targets[1]	5.0	(4%)
Vehicle Efficiency Measures	4.5	(3%)
Goods Movement • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.7	(3%)
Million Solar Roofs	2.1	(2%)
Medium/Heavy-duty Trucks • Heavy-duty Vehicle Greenhouse Gas Emissions Reduction (Aerodynamic Efficiency) • Medium- and Heavy-duty Vehicle Hybridization	1.4	(<1%)
High Speed Rail	1.0	(<1%)
Industrial Measures (for sources covered under cap & trade program) • Refinery Measures • Energy Efficiency and Co-benefits Audits	0.3	(<.5%)
Additional Reductions Necessary to Achieve the Cap	34.4	(23%)
ESTIMATED REDUCTIONS RESULTING FROM UNCAPPED SECTORS	**27.3**	
Industrial Measures (for sources not covered under cap & trade program) • Oil and Gas Extraction and Transmission	1.1	
High Global Warming Potential Gas Measures	20.2	
Sustainable Forests	5.0	
Recycling and Waste (landfill methane capture)	1.0	
TOTAL REDUCTIONS COUNTED TOWARDS 2020 TARGET	**174.0**[3]	

SOURCE: Table 2 of CARB 2008b.

[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 capped sector subtotal of 146.7 $MMTCO_2E$, and may not total 100 due to rounding.

[3] The total reduction for the recommended measures slightly exceeds the 169 MMTCO2E of reductions estimated in the BAU 2020 Emissions Forecast. This is the net effect of adding several measures and adjusting the emissions reduction estimates for some other measures.

a. AB 1493—Pavley GHG Vehicle Standards

AB 1493 (Pavley) enacted July 2002, directed CARB to adopt vehicle standards that lowered GHG emissions from passenger vehicles and light duty trucks to the maximum extent technologically feasible, beginning with the 2009 model year. CARB adopted regulations in 2004 and applied to the U.S. EPA for a waiver under the federal Clean Air Act to implement them. Termed "Pavley I," these regulations cover Model Years 2009 to 2016.

Under federal law, California is the only state allowed to adopt its own vehicle standards, but it cannot implement them until the U.S. EPA grants an administrative waiver. In December 2004, the Alliance of Automobile Manufacturers sued CARB to block implementation of the new regulations and ultimately, in December 2007, a federal judge decided the case in favor of the CARB (Sacramento Bee 2007). Despite this ruling, on December 19, 2007 the U.S. EPA announced that it would deny CARB's waiver request. In January 2008, the State of California sued the U.S. EPA in an attempt to overturn the U.S. EPA's denial (Marten Law Group 2008).

On June 30, 2009, the U.S. EPA rejected its earlier waiver denial reasoning and granted California the authority to implement these GHG emissions reduction standards for new passenger cars, pickup trucks, and sport utility vehicles. CARB adopted amendments to its new regulations in September 2009 that would enforce AB 1493 but provide vehicle manufacturers with new compliance flexibility.

With these actions, it is expected that Pavley I (27.7 $MMTCO_2E$) and Advanced Clean Cars (4 $MMTCO_2E$) will reduce GHG emissions from California passenger vehicles by a total of 31.7 $MMTCO_2E$ (or 22 percent – including 2.7 percent from Advanced Clean Cars) counted toward the total pre-economic downturn statewide reduction target on the capped sector of 146.7 $MMTCO_2E$ (CARB 2012) (see Table 4). However, the revised 2010 projections (post-economic downturn) estimate that Pavley I (26.1 $MMTCO_2E$) and the Advanced Clean Cars (3.8 $MMTCO_2E$) will reduce GHG emissions from passenger vehicles by a total of 29.9 $MMTCO_2E$, 37 percent of the total 80 $MMTCO_2E$ reduction target. CARB has also adopted a second phase of the Pavley regulations, termed "Pavley II" now called the Low Emission Vehicle III" (LEV III) Standards, that covers model years 2017 to 2025. CARB estimates that LEV III will reduce vehicle GHGs by an additional 2.4 percent (CARB 2010c). These reductions are to come from improved vehicle technologies such as small engines with superchargers, continuously variable transmissions, and hybrid electric drives. CARB is currently working on the 2013 update to the AB 32 Scoping Plan, with a draft report scheduled for the summer of 2013. It is expected that this report will contain updates on additional projections to account for LEV III (CARB 2013).

b. EO S-01-07—Low Carbon Fuel Standard

This executive order signed by Governor Schwarzenegger in January 2007 directed that a statewide goal be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020 through a Low Carbon Fuel Standard (LCFS). CARB

adopted the LCFS as a discrete early action measure pursuant to AB 32 in April 2009 and includes it as a reduction measure in its Scoping Plan (see Table 4).

The LCFS is a performance standard with flexible compliance mechanisms intended to incentivize the development of a diverse set of clean, low-carbon transportation fuel options. Its aim is to accelerate the availability and diversity of low-carbon fuels such as biofuels, electricity, and hydrogen, by taking into consideration the full life cycle of GHG emissions. A 10 percent reduction in the intensity of transportation fuels is expected to equate to a reduction of 16.5 $MMTCO_2E$ in 2020. 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 $MMTCO_2E$ (CARB 2008b).

Despite pending litigation challenging the LCFS, in April 2012 the legal injunction was lifted and as of April 30, 2012 LCFS enforcement is in effect and all outstanding reports are required to be submitted to CARB (CARB 2012).

c. Regional Transportation-related GHG Targets

The Regional Transportation-related GHG Targets measure included in the Scoping Plan identifies policies to reduce transportation emissions through changes in future land use patterns and community design, as well as through improvements in public transportation, that reduce VMT. By reducing the miles vehicles travel, vehicle emissions will be reduced. Improved planning and the resulting development are seen as essential for meeting the 2050 emissions target (CARB 2008b p. 20). CARB expects that this measure will reduce transportation-related GHG emissions by about 5 $MMTCO_2E$ or 4 percent of the total statewide reductions attributed to the capped sectors (see Table 4). Specific regional reduction targets established through Senate Bill (SB) 375 (see discussion below) will determine more accurately what reductions can be achieved through this measure.

d. SB 375—Regional Emissions Targets

SB 375 was signed in September 2008 and requires CARB to set regional targets for reducing passenger vehicle GHG emissions in accordance with the Scoping Plan measure described above. Its purpose is to align regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocation to reduce GHG emissions by promoting high-density, mixed-use developments around mass transit hubs.

CARB, in consultation with the Metropolitan Planning Organizations (MPOs), was required to provide each affected region with passenger vehicle GHG emissions reduction targets for 2020 and 2035 by September 30, 2010. The San Diego Association of Governments (SANDAG) is the San Diego region's MPO. On August 9, 2010, CARB released the staff report on the proposed reduction target, which was subsequently approved by CARB on September 23, 2010. The San Diego region will be required to reduce GHG emissions from cars and light trucks 7 percent per capita by 2020 and 13 percent by 2035 (SANDAG 2011).

The reduction targets are to be updated every 8 years, but can be updated every 4 years if advancements in emissions technologies affect the reduction strategies to achieve the targets.

Once reduction targets are established, each of California's MPOs must prepare and adopt a Sustainable Communities Strategy (SCS) that demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning. Enhanced public transit service combined with incentives for land use development that provides a better market for public transit will play an important role in the SCS. After the SCS is adopted by the MPO, the SCS will be incorporated into that region's federally enforceable regional transportation plan (RTP).

CARB is also required to review each final SCS to determine whether it would, if implemented, achieve the GHG emission reduction target for its region. If the combination of measures in the SCS will not meet the region's target, the MPO must prepare a separate Alternative Planning Strategy (APS) to meet the target. The APS is not a part of the RTP.

San Diego's MPO, SANDAG, completed and adopted its 2050 RTP in October 2011, the first such plan in the state that included a SCS; however, on December 3, 2012, the San Diego Superior Court struck down the Environmental Impact Report (EIR). The judge stated that the SANDAG's EIR did not fully study the environmental impacts of the combined SCS/RTP out to 2050 (County of San Diego 2012).

e. Tire Pressure Program

CARB's Tire Pressure Regulation took effect in September 2010. The purpose of this regulation is to reduce GHG emissions from vehicles operating with inflated tires by inflating them to the recommended tire pressure rating. Automotive service providers, among other requirements, must check and inflate each vehicle's tires to the recommended tire pressure rating, at the time of performing any automotive maintenance or repair service; indicate on the vehicle service invoice that a tire inflation service was completed and the tire pressure measurements after the service were performed; .and keep a copy of the service invoice for a minimum of three years, and make the vehicle service invoice available to the CARB or its authorized representative upon request.

4.2.3.5 Non-transportation-related Emissions Reductions

In the energy sector, Scoping Plan measures aim to provide better information and overcome institutional barriers that slow the adoption of cost-effective energy-efficiency technologies. They include enhanced energy-efficiency programs to provide incentives for customers to purchase and install more efficient products and processes and building and appliance standards to ensure that manufacturers and builders bring improved products to market. Over the long term, the recommended measures will increase the amount of electricity from renewable energy sources and improve the energy efficiency of industries,

homes, and buildings. While energy efficiency accounts for the largest emissions reductions from this sector, other applicable land development measures such as water conservation, materials use and waste reduction, and green building design and development practices, achieve additional emissions reduction.

a. Renewables Portfolio Standard

The RPS promotes diversification of the state's electricity supply. Originally adopted in 2002 with a goal to achieve a 20-percent renewable energy mix by 2020, the goal has been accelerated and increased, most recently so by EOs S-14-08 and S-21-09 to a goal of 33 percent by 2020. Its purpose is to achieve a 33-percent renewable energy mix statewide; providing 33 percent of the state's electricity needs met by renewable resources by 2020 (CARB 2008b). The RPS is included in CARB's Scoping Plan list of reduction measures (see Table 4). Increasing the RPS to 33 percent is designed to accelerate the transformation of the electricity sector, including investment in the transmission infrastructure and systems changes to allow integration of large quantities of intermittent wind and solar generation. Renewable energy includes (but is not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas. Increased use of renewables would decrease California's reliance on fossil fuels, thus reducing emissions of GHGs from the electricity sector. CARB estimates that full achievement of the RPS would decrease statewide GHG emissions by 21.3 $MMTCO_2E$ (CARB 2008b).

b. Million Solar Roofs Program

The Million Solar Roofs Program was created by SB 1 in 2006 and includes the California Public Utilities Commission's (CPUC's) California Solar Initiative and California Energy Commission's (CEC's) New Solar Homes Partnership. It requires publicly owned utilities to adopt, implement, and finance solar-incentive programs to lower the cost of solar systems and help achieve the goal of installing 3,000 megaWatts (MW) of new solar capacity by 2020. The Million Solar Roofs Program is one of CARB's GHG-reduction measures identified in the 2008 Scoping Plan (see Table 4). Achievement of the program's goal is expected to equate to a reduction of 2.1 $MMTCO_2E$ in 2020 statewide BAU emissions (CARB 2008b).

c. SB 1368—Public Utility Emission Standards

The SB 1368 (Parata), passed in 2006, requires the CEC to set GHG-emission standards for entities providing electricity in the state. The bill further requires that the CPUC prohibit electricity providers and corporations from entering into long-term contracts, if those providers and corporations do not meet the CEC's standards (Union of Concerned Scientists 2007).

d. CCR, Title 24, Part 6—California Energy Code

The California Code of Regulations, Title 24, Part 6 is the California Energy Code. This code, originally enacted in 1978 in response to legislative mandates, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy consumption. The Energy Code is updated periodically to incorporate and consider new energy-efficiency technologies and methodologies as they become available. The most recent amendments to the Energy Code, known as 2013 Title 24, or the 2013 Energy Code, becomes effective January 1, 2014. The 2008 Title 24 required energy savings of 15–35 percent above the former 2005 Title 24 Energy Code. The 2013 Energy Code is anticipated to result in similar energy savings over the 2008 Title 24 standards. At a minimum, residential buildings must achieve a 15-percent reduction in their combined space heating, cooling, and water heating energy compared to the 2005 Title 24 standards. Incentives in the form of rebates and tax breaks are provided on a sliding scale for buildings achieving energy efficiency above the minimum 15 percent reduction over 2005 Title 24. The reference to 2005 Title 24 is relevant in that many of the State's long-term energy and GHG reduction goals identify energy-saving targets relative to Title 24 2005. By reducing California's energy consumption, emissions of statewide GHGs may also be reduced.

New construction and major renovations must demonstrate their compliance with the current Energy Code through submission and approval of a Title 24 Compliance Report to the local building permit review authority and the CEC. The compliance reports must demonstrate a building's energy performance through use of CEC-approved energy performance software that shows iterative increases in energy efficiency given selection of various Heating, Ventilating, and Air Conditioning (HVAC), sealing, glazing, insulation, and other components related to the building envelope. Title 24 governs energy consumed by the built environment, by the major building envelope systems such as space heating, space cooling, water heating, some aspects of the fixed lighting system, and ventilation. Non-building energy use, or "plug-in" energy use (such as appliances, equipment, electronics, plug-in lighting), are independent of building design and are not subject to Title 24.

e. CCR, Title 24, Part 11—California Green Building Standards

In 2007, Governor Schwarzenegger directed the California Building Standards Commission to work with state agencies on the adoption of green building standards for residential, commercial, and public building construction for the 2010 code adoption process. A voluntary version of the California Green Building Standards Code, referred to as CalGreen, was added to Title 24 as Part 11 in 2009. The 2010 version of CalGreen took effect January 1, 2011 and instituted mandatory minimum environmental performance standards for all ground-up new construction of commercial and low-rise residential buildings, state-owned buildings, schools, and hospitals. It also includes voluntary tiers (I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory requirements

and may also adopt the Green Building Standards with amendments for stricter requirements.

The mandatory standards require:

- 20 percent mandatory reduction in indoor water use relative to specified baseline levels;
- 50-percent construction/demolition waste diverted from landfills;
- mandatory inspections of energy systems to ensure optimal working efficiency; and
- requirements for low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards.

The voluntary standards require:

- Tier I — 15 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste, 10 percent recycled content, 20 percent permeable paving, 20 percent cement reduction, cool/solar reflective roof; and
- Tier II — 30 percent improvement in energy requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste, 15 percent recycled content, 30 percent permeable paving, 30 percent cement reduction, cool/solar reflective roof.

Similar to the compliance reporting procedure described above for demonstrating energy code compliance in new buildings and major renovations, compliance with the CalGreen water reduction requirements must be demonstrated through completion of water use reporting forms for new low-rise residential and non-residential buildings. The water use compliance form must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CalGreen or a reduced per-plumbing-fixture water use rate.

Related to CalGreen are the earlier 2000 Sustainable Building Goal (EO D-16-00) and 2004 Green Building Initiative (EO S-20-04). The 2000 Sustainable Building Goal instructed that all state buildings be constructed or renovated and maintained as models of energy, water, and materials efficiency. The 2004 Green Building Initiative recognized further that significant reductions in GHG emissions could be achieved through the design and construction of new green buildings as well as the sustainable operation, retrofitting, and renovation of existing buildings.

The CARB Scoping Plan includes a Green Building Strategy with the goal of expanding the use of green building practices to reduce the carbon footprint of new and existing buildings. Consistent with CalGreen, the Scoping Plan recognized that GHG reductions would be achieved through buildings that exceed minimum energy-efficiency standards, decrease consumption of potable water, reduce solid waste during construction and operation, and

incorporate sustainable materials. Green building is thus a vehicle to achieve the Scoping Plan's statewide electricity and natural gas efficiency targets, and lower GHG emissions from waste and water transport sectors.

In the Scoping Plan, CARB projects that an additional 26 $MMTCO_2E$ could be reduced through expanded green building (CARB 2008b, p.17). However, this reduction is not counted toward the BAU 2020 reduction goal to avoid any double counting, as most of these reductions are accounted for in the electricity, waste, and water sectors. Because of this, CARB has assigned all emissions reductions that occur because of green building strategies to other sectors for meeting AB 32 requirements, but will continue to evaluate and refine the emissions from this sector.

f. SB 97—California Environmental Quality Act GHG Amendments

SB 97 (Dutton), passed by the legislature and signed by the governor on August 24, 2007, required the office of Planning and Research (OPR) on or before July 1, 2009, to prepare, develop, and transmit to the Resources Agency amendments to the California Environmental Quality Act (CEQA) guidelines (Guidelines) to assist public agencies in the evaluation and mitigation of GHGs or the effects of GHGs as required under CEQA, including the effects associated with transportation and energy consumption. SB 97 required the Resources Agency to certify and adopt those guidelines by January 1, 2010. Proposed amendments to the state CEQA Guidelines for GHG emissions were submitted on April 13, 2009, adopted on December 30, 2009, and became effective March 18, 2010.

Section 15064.4 of the amended Guidelines includes the following requirements for determining the significance of impacts from GHG emissions:

(a) The determination of the significance of greenhouse gas emissions calls for a careful judgment by the lead agency consistent with the provisions in section 15064. A lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. A lead agency shall have discretion to determine, in the context of a particular project, whether to:

(1) Use a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use. The lead agency has discretion to select the model or methodology it considers most appropriate provided it supports its decision with substantial evidence. The lead agency should explain the limitations of the particular model or methodology selected for use; and/or

(2) Rely on a qualitative analysis or performance-based standards.

While the amendments require calculation of a project's contribution, they clearly do not establish a standard by which to judge a significant effect or a means to establish such a standard.

4.2.3.6 Cap-and-Trade Program

As discussed previously, the Scoping plan was considered by CARB at a December 11, 2008 public hearing and was subsequently adopted by the Board's Executive Officer in May 11, 2009. As one of the alternatives presented in the Scoping Plan, CARB staff were directed to develop a cap-and-trade regulation, which is a type of market-based compliance mechanism. The cap-and-trade program establishes the total amount of GHG emissions that major sources would be permitted to emit. Subsequent litigation challenged certain aspects of the Scoping Plan, and on March 17, 2011, a California Superior Court decision upheld the legal challenge that CARB did not adequately evaluate alternatives under CEQA and approved the Scoping Plan before receiving and responding to the necessary public comment.

As such, the CARB was prevented from moving forward with the cap-and-trade program. However, the decision was appealed, and in June 2011, a California appeals court temporarily stayed the injunction, allowing the CARB to continue development of the cap-and-trade program. On October 20, 2011, the CARB adopted the final cap-and-trade regulation. The program took effect on January 1, 2012, the first auctions will be held in 2012 (see discussion below), and compliance obligation for GHG emissions begins January 1, 2013. Once implemented, the cap-and-trade regulation will provide a fixed limit on GHG emissions from the stationary sources responsible for about 85 percent of the state's total GHG emissions.

CARB will distribute allowances to emit GHGs, and the total number of allowances created would be equal to the total amount set for cumulative emissions from all covered entities. Each allowance would permit the holder to emit one $MTCO_2E$ of GHG. Starting in 2013, the covered entities include major GHG emitting sources, such as electricity generation (including imports and large stationary sources), that emit more than 25,000 $MTCO_2E$ per year. The program will expand in 2015 to cover natural gas and propane fuel providers and transportation fuel providers. The cap is divided into annual budgets that specify the total number of allowances for each year from 2013 to 2020. Those that need additional allowances to cover their emissions can purchase them at regular auction from entities that hold excess allowances (i.e., facilities whose actual emissions are less than the total allowances they hold). Each year, fewer allowances will be issued on an annual basis. The cap in 2020 is set at a level designed to allow California to achieve the AB 32 target in 2020. The program also allows for offset credits. An offset credit represents a reduction or removal of one $MTCO_2E$ of GHGs through the modification or replacement of existing covered equipment. This credit, once measured, quantified, and verified, can be sold and used by a covered entity to meet a portion of its compliance obligation. Covered entities can purchase

offset credits to satisfy up to 8 percent of the entity's total compliance obligations during a single compliance period. It is estimated that implementation of the cap-and-trade regulation will reduce GHG emissions by 18 to 27 million $MTCO_2E$ in 2020 (CARB 2011).

4.2.4 Local

4.2.4.1 San Diego Sustainable Community Program

In 2002, the San Diego City Council unanimously approved the San Diego Sustainable Community Program (SCP) and requested that an *Ad Hoc* Advisory Committee be established to provide recommendations that would decrease GHG emissions from City operations. Actions identified in the SCP include:

1. Participation in the International Council for Local Environmental Initiatives (ICLEI) Cities for Climate Protection (CCP) Campaign to reduce GHG emissions, and in the California Climate Action Registry;
2. Establishment of a reduction target of 15 percent by 2010, using 1990 as a baseline (Note: this reduction target was not met. As of 2006, the region has an 18 percent increase in emissions over 1990 levels, commensurate with population growth.); and
3. Direction to use the recommendations of the *Ad Hoc* Advisory Committee as a means to expand the GHG Emission Reduction Action Plan for the City organization and broaden its scope to include community actions.

4.2.4.2 Cities for Climate Protection

As a participant in the ICLEI Cities for Climate Protection Program, the City made a commitment to voluntarily decrease its GHG emissions by 2030. The Program includes five milestones: (1) establish a CCP campaign, (2) engage the community to participate, (3) sign the U.S. Mayors Climate Protection Agreement, (4) take initial solution steps, and (5) perform a GHG audit.

4.2.4.3 Climate Protection Action Plan

In July 2005, the City of San Diego developed a Climate Protection Action Plan (CPAP) that identifies policies and actions to decrease GHG emissions from City operations. Recommendations included in CPAP for transportation included measures such as increasing carpooling and transit ridership, improving bicycle lanes, and converting the City vehicle fleet to low-emission or non-fossil-fueled vehicles. Recommendations in the CPAP for energy and other non-transportation emissions reductions included increasing building energy efficiency (i.e., requiring that all City projects achieve the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Silver standard); reducing waste from City operations; continuing use of landfill methane as an energy

source; reducing the urban heat island by avoiding dark roofs and roads which absorb and retain heat; and increasing shade tree and other vegetative cover plantings.

Because of City actions implemented earlier between 1990 and 2002, moderate GHG emissions reductions were reported in the CPAP. City actions taken to capture methane gas from solid waste landfills and sewage treatment plants resulted in the largest decrease in GHG emissions. The recently amended City General Plan (2008) includes a Policy CE-A.13 to regularly monitor and update the CPAP.

4.2.4.4 Sustainable Building Policies

In several of its policies, the City aims to reduce GHG emissions by requiring sustainable development practices in City operations and incentivizing sustainable development practices in private development. In Council Policy 900-14—Green Building Policy, adopted in 1997, Council Policy 900-16—Community Energy Partnership, and the updated Council Policy 900-14—Sustainable Buildings Expedite Program, last revised in 2006, the City establishes a mandate for all City projects to achieve the U.S. Green Building Council's LEED Silver standard for all new buildings and major renovations over 5,000 square feet. Incentives are also provided to private developers through the Expedite Program, which expedites project review of green building projects and discounts project review fees.

The City has also enacted codes and policies aimed at helping the City achieve the State's 50-percent waste diversion mandate, including the Refuse and Recyclable Materials Storage Regulations (Municipal Code Chapter 14, Article 2, Division 8), Recycling Ordinance (O-19678 Municipal Code Chapter 6, Article 6, Division 7), and the Construction and Demolition (C & D) Debris Deposit Ordinance (0-19420 & 0-19694 Municipal Code Chapter 6, Article 6, Division 6).

4.2.4.5 General Plan

The City of San Diego 2008 General Plan includes several climate change-related policies aimed at reducing GHG emissions from future development and City operations. For example, Conservation Element policy CE-A.2 aims to "reduce the City's carbon footprint" and to "develop and adopt new or amended regulations, programs, and incentives as appropriate to implement the goals and policies set forth" related to climate change. The Land Use and Community Planning Element, the Mobility Element, the Urban Design Element, and the Public Facilities, Services and Safety Element also identify GHG reduction and climate change adaptation goals. These elements contain policy language related to sustainable land use patterns, alternative modes of transportation, energy efficiency, water conservation, waste reduction, and greater landfill efficiency. The overall intent of these policies is to support climate protection actions, while retaining flexibility in the design of implementation measures, which could be influenced by new scientific research, technological advances, environmental conditions, or state and federal legislation.

Cumulative impacts of GHG emissions were qualitatively analyzed and determined to be significant and unavoidable in the 2008 Program Environmental Impact Report (PEIR) for the General Plan. A PEIR Mitigation Framework was included that indicated "for each future project requiring mitigation (measures that go beyond what is required by existing programs, plans and regulations), project-specific measures will [need to] be identified with the goal of reducing incremental project-level impacts to less than significant; or the incremental contributions of a project may remain significant and unavoidable where no feasible mitigation exists."

4.2.4.6 Climate Mitigation and Adaptation Plan

A citywide Climate Mitigation and Adaptation Plan (CMAP) has been developed to provide a mechanism for the City to achieve the goals of AB 32 and the CARB Scoping Plan at a program level. The CMAP elements were prepared pursuant to guidance from the amended CEQA Guidelines and CARB recommendations for what constitutes an effective GHG reduction plan.

The public review period for the City's CMAP was completed in December 2012 and is nearing approval as of August 2013. Once adopted, discretionary and ministerial projects within the City's jurisdiction would be evaluated through an Initial Study or similar review to determine conformance with the measures identified in the CMAP. However, the plan is not final, and CEQA does not require a lead agency to analyze a project's consistency with draft plans.

4.2.4.7 Climate Action Strategy

The SANDAG Climate Action Strategy is a long-range policy (year 2030) that focuses on transportation, electricity, and natural gas sectors. It is a complement to the Regional Energy Strategy 2030 Update and feeds into the SANDAG RTP and Regional Comprehensive Plan. It is currently in process of being prepared.

As indicated above, per the requirements of SB 375 the San Diego region will be required to reduce GHG emissions from cars and light trucks 7 percent per capita by 2020 and 13 percent by 2035 (SANDAG 2011). These reduction targets have been incorporated into the 2050 RTP and SCS for the San Diego region.

5.0 Significance Criteria and Analysis Methodologies

5.1 Determining Significance

The current CEQA Guidelines Appendix G Environmental Checklist includes the following two questions regarding assessment of GHG emissions:

1) Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

2) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emission of GHGs?

As stated in the Guidelines, these questions are "intended to encourage thoughtful assessment of impacts and do not necessarily represent thresholds of significance" (Title 14, Division 6, Chapter 3 Guidelines for Implementation of the CEQA, Appendix G, VII Greenhouse Gas Emissions). To date, there have been no local, regional, state, or federal regulations establishing a threshold of significance to determine project-specific impacts of GHG emissions. The CEQA Guidelines require Lead Agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guidelines allow Lead Agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold.

The City follows guidance from the California Air Pollution Control Officers Association (CAPCOA) report *CEQA & Climate Change*, dated January 2008, for interim screening criteria to determine when a GHG analysis would be required. The City also follows information from the CARB Scoping Plan and BAU 2020 Forecast to determine when a cumulatively significant contribution of GHGs has occurred.

Although the criteria discussed below are interim guidance, they represent a good faith effort to evaluate whether GHG impacts from a project are significant, taking into account the type and location of the proposed development, the best available scientific data regarding GHG emissions, and the current statewide goals and strategies for reduction of GHG emissions. It is also important to note that the San Diego Air Pollution Control District (SDAPCD) has not provided guidance on the quantification of GHG emissions or emissions thresholds for the San Diego Region.

5.1.1 900 $MTCO_2E$ Screening Criterion

A 900-metric-ton screening criterion for determining when a GHG analysis is required was chosen by the City based on available guidance from the CAPCOA report. The CAPCOA report references the 900-metric-ton guideline as a conservative threshold for requiring further 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.

5.1.2 Further Analysis Demonstrating a 28.3 Percent Reduction in BAU

For projects that emit GHGs in excess of 900 $MTCO_2E$ annually, the City requires a GHG emissions analysis to demonstrate that the proposed project design achieves a 28.3 percent reduction relative to BAU GHG emissions (discussed further in Section 5.1.2.2 below). The proposed project would emit more than 900 $MTCO_2E$ of GHG annually, and is thus subject to the City's requirement to complete a GHG emissions analysis that demonstrates a minimum 28.3 percent reduction relative to BAU emissions.

5.1.2.1 Business-as-Usual Emissions

BAU emissions are the GHG emissions that would be expected to occur in the absence of GHG reduction measures or mitigation. As described above in Section 4.2.3.3, AB 32 directed CARB to develop a Scoping Plan that identified the reduction measures needed to achieve the targets established in AB 32/S-3-05. In order to assess the scope of the reductions California needs to make to return to 1990 emissions levels by 2020, CARB staff estimated 2020 BAU GHG emissions (Table 5), which represent the emissions that would be expected to occur without any GHG reduction measures. CARB staff estimated that statewide 2020 BAU GHG emissions would be 596 $MMTCO_2E$, requiring a reduction of 169 $MMTCO_2E$, to attain the 2020 emissions limit of 427 $MMTCO_2E$. This equates to an average 28.3 percent reduction relative to BAU.

TABLE 5
CALIFORNIA BAU 2020 GHG EMISSIONS FORECAST

Sector	Projected 2020 Emissions in $MMTCO_2E$ (% total)
Transportation	225.4 (38%)
Electricity	139.2 (23%)
Commercial and Residential	46.7 (8%)
Industry	100.5 (17%)
Recycling and Waste	7.7 (1%)
High GWP	46.9 (8%)
Agriculture	29.8 (5%)
Forest Net Emissions	0.0
TOTAL	**596.4**

SOURCE: CARB 2008a.

The 2020 BAU emissions forecast thus serves as the basis for establishing the City's 28.3-percent reduction relative to BAU goal and is consistent with the current CEQA Guidelines, which state that cumulative impacts may be measured relative to a cumulative baseline that includes a

> summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include a general plan, regional transportation plan, or plans for the reduction of GHG emissions.

5.1.2.2 Project Emissions Relative to BAU

While BAU emissions are the GHG emissions that would be expected to occur in the absence of GHG-reduction measures or mitigation, project emissions are the GHG emissions that would be expected to occur with GHG-reduction measures or mitigation. Per City guidance, when assessing project emissions against the City's 28.3 percent reduction relative to BAU, project emissions estimates are to account for the GHG reductions achieved through statewide regulations adopted since 2005 to reduce GHG emissions. This includes the Pavley and LCFS measures aimed at reducing vehicle emissions, the 2013 update to the Title 24 Energy Efficiency Standards aimed at reducing energy emissions (by a minimum of 15 percent), and the 2011 effective date of implementing the mandatory water reduction requirements of CalGreen aimed at reducing water use emissions (by approximately 20 percent). In addition to these statewide regulations, project GHG emissions estimates are to account for any project-specific GHG reductions achieved through design features or mitigation.

The project's estimated 2020 GHG emissions with GHG reductions are then evaluated relative to the 2020 BAU GHG emissions for comparison to the City's threshold as follows:

$$\left(\frac{\dot{m}_{GHG,BAU} - \dot{m}_{GHG,PR}}{\dot{m}_{GHG,BAU}}\right) 100 \geq 28.3?$$

Where

$\dot{m}_{GHG,BAU}$ = Project's net 2020 BAU GHG emissions ($MMTCO_2E$)

= Project's 2020 BAU GHG emissions – Existing Land Use's 2020 BAU GHG emissions

$\dot{m}_{GHG,PR}$ = Project's net 2020 GHG emissions with GHG-reducing features incorporated ($MMTCO_2E$)

= Project's 2020 GHG emissions with GHG-reducing design features and regulations incorporated – Existing Land Use's 2020 GHG emissions with regulations incorporated

If the project's 2020 GHG emissions accounting for the effects of GHG-reducing regulations (Pavley and LCFS) and project-specific design features represent a 28.3 percent reduction relative to the project's BAU GHG emissions, the project would not result in a significant impact to global climate change. Section 6.1 provides this analysis. The following Section 5.2 describes the methodology and assumptions used in quantifying project and BAU emissions.

5.2 Methodology and Assumptions

GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2013.2, released in July 2013. CalEEMod was developed by several state air districts including the South Coast Air Quality Management District (SCAQMD) and the San Diego Air Pollution Control District (SDAPCD).

As stated by CARB,

> the purpose of CALEEMod it to provide a uniform platform for government agencies, land use planners, and environmental professionals to estimate potential emissions associated with both construction and operational use of land use projects. It is intended that these emission estimates are suitable for use in CEQA compliant documents for air quality and climate change impacts. CalEEMod utilizes widely accepted models for emissions estimates combined with appropriate default data that can be used if site-specific information is not available. These models and default estimates use sources such as the USEPA AP-42 emission factors, CARB vehicle emissions models, studies commissioned by California agencies such as the California Energy Commission and CALRecycle.

In brief, the model estimates criteria air pollutants and GHG emissions by multiplying emission source intensity factors by estimated quantities of emission sources based on the land use information entered by the user in the first module of the model. In the first module, the user defines the specific land uses that will occur at the project site. The user also selects the appropriate land use setting (urban or rural), operational year, air basin, and utility provider. The input land uses, size features, and population are used throughout CalEEMod in determining default variables and calculations in each of the subsequent modules. The subsequent modules include construction (including off-road vehicle emissions), mobile (on-road vehicle emissions), area sources (woodstoves, fireplaces, consumer products [cleansers, aerosols, solvents], landscape maintenance equipment, architectural coatings), water and wastewater, and solid waste. Each module comprises multiple components including an associated mitigation module to account for further reductions in the reported baseline calculations. These reductions are linked to several of the quantifiable mitigation measures identified in the CAPCOA *Quantifying Greenhouse Gas Mitigation Measures* August 2010 report (CAPCOA 2010).

CalEEMod estimates emissions in terms of total metric ton CO_2 equivalent ($MTCO_2E$). CO_2-equivalent emissions are the preferred way to assess combined GHG emissions because they give weight to the GWP of a gas. The GWP, as described above in Section 2.1, is the potential of a gas to warm the global climate in the same amount as an equivalent amount of emissions of CO_2. Carbon dioxide (CO_2) thus has a GWP of 1. Methane (CH_4) has a GWP of 21 and nitrous oxide (N_2O) has a GWP of 310, which means they have a greater global warming effect than CO_2.

Each of the modules' methodology and input data are described below and are based on information provided in the CalEEMod User's Guide (SCAQMD 2013). The reported GHG emission estimates based on these inputs are provided in Section 6.1.

5.2.1 Defining Project Characteristics and Land Use

For this analysis, the location was selected as the San Diego Air Pollution Control District area with an urban (versus suburban) setting, in climate zone 13, served by San Diego Gas and Electric (SDG&E). SDG&E's energy intensity factors are shown in Table 6 below.

TABLE 6
SAN DIEGO GAS & ELECTRIC INTENSITY FACTORS

GHG	Intensity Factor[1] (lbs/MWh)
Carbon Dioxide (CO_2)	780.79
Methane (CH_4)	0.029
Nitrous Oxide (N_2O)	0.011

[1]SOURCE: CalEEMod Version 2011.1.1.
lbs = pounds
MWh = megaWatt hour

These energy intensity values are used in CalEEMod to determine the GHG emissions associated with electricity use in various modules and are based on CARB's Local Government Operations Protocol (LGOP) (for CO_2) and E-Grid (for CH_4 and N_2O) values.

The proposed project was modeled as a senior congregate care land use. Emission estimates were calculated for the three GHGs of primary concern (CO_2, CH_4, and N_2O) that would be emitted from construction and the five primary operational sources that would be associated with project buildout: on-road vehicular traffic, use of consumer products, energy use (composed of electricity use and natural gas consumption), water use, and solid waste disposal.

5.2.2 Estimating Construction Emissions

Construction activities emit GHGs primarily though combustion of fuels (mostly diesel) in the engines of off-road construction equipment and through combustion of diesel and gasoline in on-road construction vehicles and in the commute vehicles of the construction workers.

Smaller amounts of GHGs are also emitted through the energy use embodied in any water use (for fugitive dust control) and lighting for the construction activity. Every phase of the construction process, including demolition, grading, paving, and building, emits GHGs, in volumes proportional to the quantity and type of construction equipment used. The heavier equipment typically emits more GHGs per hour of use than the lighter equipment because of their greater fuel consumption and engine design.

GHG emissions associated with each phase of project construction are calculated in CalEEMod by multiplying the total fuel consumed by the construction equipment and worker trips by applicable emission factors. CalEEMod forecasts the number and pieces of construction equipment that would be used given project-specific design. In the absence of project-specific construction information, needed equipment for all phases of construction are estimated based on the size of the land use subtype features entered in the land use module.

CalEEMod estimates construction emissions for each year of construction activity based on the annual construction equipment profile and other factors determined as needed to complete all phases of construction by the target completion year. As such, each year having reported construction emissions has varying quantities of GHG emissions. However, the Association of Environmental Professionals (AEP) has recently recommended that total construction GHG emissions resulting from a project be amortized over 30 years and added to operational GHG emissions (AEP 2010). Estimates of the total emissions from construction activities (associated with the development of subsequent projects) estimated by CalEEMod were thus divided by 30 and then added to the operational emissions, in accordance with the AEP recommendations.

5.2.3 Estimating Vehicle Emissions

Transportation-related GHG emissions comprise the largest sector contributing to both inventoried and projected statewide GHG emissions, accounting for 38 percent of the projected total statewide 2020 BAU emissions (CARB 2008a). On-road vehicles alone account for 35 percent of forecasted 2020 BAU emissions. GHG emissions from vehicles come from the combustion of fossil fuels in vehicle engines. The CalEEMod model estimates vehicle emissions by first calculating trip rate, trip length, trip purpose, and trip type percentages (e.g., home to work, home to shop, home to other) for each land use type, based on the land use types and quantities entered by the user in the land use module. CalEEMod's default trip rates are based on the Institute of Transportation Engineers (ITE) Trip Generation 8th Edition trip rates for each respective land use category.

Trip rates for this analysis were obtained from the traffic report prepared for the project (Urban Systems Associates, Inc. 2012). For this analysis, the CalEEMod default fleet mix was assumed. Default trip lengths in CalEEMod are based on either information provided by the local air district or, if not provided by an air district, are based on statewide averages.

CalEEMod assumes the statewide trip length average for San Diego. These default trip lengths were changed to the existing regional average trip length of 5.8 miles (SANDAG 2012). CalEEMod default vehicle emission factors and fleet mix are derived from the Emission Factors (EMFAC) 2007 model and are internally adjusted for Pavley I and the LCFS. In addition, reductions would occur from implementation of LEV III and the Tire Pressure Program. LEV III was estimated to add an additional 4.0 $MMTCO_2E$ for 2.4 percent of the estimated 174 $MMTCO_2E$ reduction total. The Tire Pressure Program was estimated to reduce GHG emissions by an additional 0.6 percent. These reductions were taken into account for estimation of project emissions in year 2020 with GHG-reduction measures.

5.2.4 Estimating Energy Use Emissions

GHGs are emitted as a result of activities in buildings for which electricity and natural gas are used as energy sources. GHGs are generated during the generation of electricity from fossil fuels off-site in power plants. These emissions are considered indirect but are calculated in CalEEMod as associated with a building's operation. Electric power generation accounts for the second largest sector contributing to both inventoried and projected statewide GHG emissions, comprising 24 percent of the projected total 2020 statewide BAU emissions (CARB 2008a). Combustion of fossil fuel emits criteria pollutants and GHGs directly into the atmosphere. When this occurs in a building this is considered a direct emissions source associated with that building. CalEEMod only estimates emissions from the direct combustion of natural gas. Fuel oil, kerosene, liquefied petroleum gas, and wood can also be used as fuels, but they generally contribute only small amounts, and thus CalEEMod does not account for their emissions. Use of these other fuels is not anticipated for the proposed project.

CalEEMod estimates GHG emissions from energy use by multiplying average rates of residential and non-residential energy consumption by the quantities of residential units and non-residential square footage entered in the land use module to obtain total projected energy use. This value is then multiplied by electricity and natural gas GHG emission factors applicable to the project location and utility provider. As discussed above, the proposed project was modeled as a senior congregate care land use. Default CalEEMod consumption rates for this type of land use per unit were assumed. It should be noted that the proposed project would have a capped occupancy rate which is less than typical residential uses. It is anticipated that the proposed project would have approximately 630 residents.

Building energy use is typically divided into energy consumed by the built environment and energy consumed by uses that are independent of the construction of the building such as plug-in appliances. In California, Title 24 governs energy consumed by the built environment, mechanical systems, and some types of fixed lighting. Non-building energy use, or "plug-in energy use," can be further subdivided by specific end-use (refrigeration, cooking, office equipment, etc.). CalEEMod thus calculates electricity use by:

- Calculating energy use from systems covered by Title 24 (i.e., HVAC system, water heating system, and the lighting system);
- Calculating energy use from lighting use; and
- Calculating energy use from office equipment, appliances, plug-in electronics, and other sources not covered by Title 24 or lighting.

Lighting is calculated separately, since it can be both part and not part of Title 24. Natural gas use is just distinguished in the model as Title 24 or Non-Title 24 similar to electricity consumption.

CalEEMod default historical energy consumption rates were assumed for the business-as-usual scenario. The proposed project would be constructed in accordance with the 2013 Title 24 energy code, which is estimated to be 25 percent more energy efficient than the previous 2008 Title 24 energy code (Imperial Valley Economic Development Corporation 2013). The increase in energy efficiency can be achieved by using better building components such as more insulation, higher efficiency windows, house wrap, radiant barriers, and higher-efficiency heating, cooling, and water heating equipment.

The project would also reduce energy emissions through the installation of high-efficiency lighting to achieve a 15 percent lighting energy reduction.

Additionally, as shown in Table 4, implementation of the RPS would reduce GHG emissions by 14 percent. This reduction was taken into account for estimation of project emissions in year 2020 with GHG-reduction measures.

5.2.5 Estimating Area Source Emissions

This CalEEMod module estimates the GHG emissions that would occur from the use of hearths, woodstoves, and landscaping equipment. This module also estimates emissions due to use of consumer products and architectural coatings that have volatile organic content. However, the use of consumer products and architectural coatings does not emit GHGs. In this GHG analysis, no hearths or woodstoves were attributed to the proposed project.

The use of landscape equipment emits GHGs associated with the equipment's fuel combustion. CalEEMod estimates the number and type of equipment needed based on the number of summer days given the project's location as entered in the project characteristics module. The model defaults for landscaping equipment were assumed.

5.2.6 Estimating Water and Wastewater Emissions

The amount of water used and wastewater generated by a project has indirect GHG emissions associated with it. These emissions are a result of the energy used to supply, distribute, and treat the water and wastewater. In addition to the indirect GHG emissions associated with energy use, wastewater treatment can directly emit both methane and nitrous oxide.

CalEEMod uses default electricity intensity values for various phases of supplying and treating water from CEC's 2006 *Refining Estimates of Water-related Energy Use in California*. The model estimates water/wastewater emissions by multiplying the total projected water/wastewater demand by the applicable water electricity intensities and by the utility intensity GHG factors.

The default water module assumptions for a senior congregate care land use were used for the estimates of BAU conditions. However, for the proposed project, the water mitigation module was used to account for an overall 30 percent reduction in water use that the project would achieve. A reduction in water use can be achieved by use of water-efficient landscapes, installing water-efficient appliances, and increasing the use of recycled water.

5.2.7 Estimating Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. CalEEMod determines the GHG emissions associated with disposal of solid waste into landfills. Portions of these emissions are biogenic. To estimate the GHG emissions that would be generated by disposing of the solid waste associated with the proposed project, the total volume of solid waste was first estimated in the model using waste disposal rates identified by CalRecycle. CalEEMod methods for quantifying GHG emissions from solid waste are based on the IPCC method using the degradable organic content of waste. BAU GHG emissions associated with waste disposal were all calculated using CalEEMod's default parameters. The project would implement a recycling program. Reductions due to a reduction in waste were taken into account for the proposed project in 2020.

6.0 Impact Analysis

In accordance with CEQA and City guidelines, this analysis evaluates the significance of the proposed project in terms of (1) its contribution of GHGs to cumulative statewide emissions and (2) its consistency with local and state regulations, plans, and policies aimed at reducing GHG emissions.

6.1 Cumulative GHG Emissions

6.1.1 Impacts

As indicated in Section 5.1, the proposed project requires completion of a detailed GHG emissions analysis in order to determine what, if any, cumulative impacts would result from project implementation. Specifically, the analysis must demonstrate whether or not buildout of the proposed project, accounting for GHG reduction measures, would generate GHG emissions at least 28.3 percent less than the emissions that would occur under a BAU buildout scenario. The BAU buildout scenario represents buildout of the proposed project without accounting for GHG reduction measures. Thus, GHG estimates for both scenarios are discussed below.

6.1.1.1 Proposed Project without GHG Reductions (BAU)

The projected GHG emissions that would be generated under BAU assumptions (i.e., without accounting for GHG reductions) were estimated using the methodology described in Section 5.2. The complete calculations are included in Attachment 1.

a. Vehicle Emissions

Greenhouse gas emissions would be emitted from vehicles associated with the proposed project and would come from the combustion of fossil fuels (primarily gasoline and diesel) in vehicle engines. The quantity and type of transportation fuel consumed and the number of miles driven determines the amount of GHGs emitted from a vehicle. The method for calculating these emissions is described in Section 5.2.3. As described in Section 5.2.3, to calculate the BAU scenario, default vehicle emissions calculated by CalEEMod are for year 2005. Thus, these emissions do not account for reductions due to Pavley or LCFS.

Based on the trip generation rates contained in the traffic report and a trip length of 5.8 miles, CalEEMod calculates that the proposed project would generate approximately 3,490,298 VMT per year. Based on this traffic volume, an estimated total of 1,792 $MTCO_2E$ of GHGs would be emitted annually by vehicles associated with buildout of the BAU project.

b. Energy Use Emissions

GHG emissions would be generated by the use of electricity and combustion of natural gas. The method for calculating these emissions is described in Section 5.2.4.

Assuming default historical consumption rates, the BAU project is estimated to consume 3,309,045 kWh of electricity per year and 5,794,968 thousand British thermal units (kBtu) of natural gas per year. This results in total annual GHG emissions of approximately 1,396 $MTCO_2E$. Of this total, approximately 311 $MTCO_2E$ of GHGs would be generated annually

from natural gas combustion, and 1,085 $MTCO_2E$ of GHGs would be generated annually from electricity use.

c. Area Source Emissions

Area sources calculated in CalEEMod include architectural coatings, consumer products, and landscaping. Assuming all CalEEMod defaults, it is estimated that area sources would result in approximately 6 $MTCO_2E$ annually.

d. Water Use Emissions

The supply and treatment of water to the project site would consume large amounts of energy. This type of energy use is known as embodied energy. Greenhouse gasses would be emitted from the generation of this embodied energy. The method for calculating these emissions is described in Section 5.2.6. As explained in Section 5.2.6, average rates of water consumption were used in the calculation of BAU water use emissions, consistent with plumbing code regulations in effect at the time the CARB 2020 BAU forecast was made.

Based on the CalEEMod default BAU water use rates and embodied energy intensities, CalEEMod estimates that the embodied energy needed to supply and treat future water for the project site would emit 309 $MTCO_2E$ of GHGs each year.

e. Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. The method for calculating these emissions is described in Section 5.2.7.

CalEEMod estimates that the proposed project without GHG-reducing design features (i.e., BAU) would generate 417 $MTCO_2E$ of GHGs per year associated with solid waste disposal.

f. Construction Emissions

GHGs would be emitted from construction equipment, and worker and vendor vehicle trips associated with the development of the proposed project. The method for calculating these emissions is described in Section 5.2.2.

All CalEEMod defaults for construction activities were used, and it was assumed that construction would begin in 2014 and last approximately two years. It was estimated that construction activities would generate a total of 1,700 $MTCO_2E$. While CalEEMod distributes construction activity emissions over each year at varying quantities depending on various model assumptions, for the purpose of this analysis, total construction GHG emissions were divided by 30 years in order to identify annual construction GHG emissions. This is in accordance with AEP recommendations (see Section 5.2.2 explanation). Thus, annual

construction GHG emissions associated with construction of the proposed project would approximate 57 $MTCO_2E$ each year.

g. Total Emissions without GHG Reductions (BAU)

Based on the calculations described above, the combined total BAU GHG emissions without GHG reductions would be approximately 3,976 $MTCO_2E$. These emissions are summarized in Table 7.

TABLE 7
BAU GHG EMISSIONS IN 2020
($MTCO_2E$ PER YEAR)

Emission Source	BAU Emissions
Vehicles	1,792
Energy Use	1,396
Area Sources	6
Water Use	309
Solid Waste Disposal	417
Construction	57
TOTAL	**3,976**

6.1.1.2 Proposed Project with GHG Reductions

The projected GHG emissions that would be generated from the proposed project, accounting for GHG reductions, were estimated using the methodology described in Section 5.2. The complete calculations are included in Attachment 2. The results are summarized below.

a. Vehicle Emissions

GHG emissions would be emitted from vehicles associated with the proposed project and would come from the combustion of fossil fuels in vehicle engines. As described in Section 5.2.3, the CalEEMod vehicle emissions estimates for 2020 are adjusted to account for Pavley I and LCFS. In addition, reductions would occur from implementation of LEV III. As discussed above, LEV III was estimated to reduce emissions by 2.4 percent of the estimated 174 $MMTCO_2E$ reduction total. This reduction was taken into account for estimation of project emissions in year 2020 with GHG-reduction measures.

The proposed project provides extensive bus, van, and car services. A 28-passenger bus and a 24-passenger bus are proposed for the project along with one van and two cars. The trip generation rates provided in the traffic report do not take these services into account. Based on the number of residents and the number of seats provided in the buses, van, and cars, it was estimated that the transportation services would reduce trips by 10 percent. Based on the trip generation rates contained in the traffic report and a trip length of 5.8

miles, CalEEMod calculates that the proposed project would generate approximately 3,268,140 VMT per year prior to the 10 percent trip rate reduction. After taking into account a 10 percent trip reduction and adjusting for LEV III and the Tire Pressure Program, a total of 1,253 $MTCO_2E$ of GHGs would be emitted annually by vehicles associated with the proposed project.

b. Energy Use Emissions

GHGs would be emitted from the generation of electricity and the combustion of natural gas needed to supply the energy needs of the project site. The energy use GHG emissions from the proposed project were estimated using energy rates adjusted to the 2013 Title 24 energy code in order to account for GHG reductions that would occur from more energy-efficient building construction. As discussed previously, the 2013 Title 24 energy code is 25 percent more efficient than the 2008 Title 24 energy code. The proposed project would also increase lighting efficiency by 25 percent. Additionally, as shown in Table 4, implementation of the RPS would reduce GHG emissions by 14 percent. This reduction was also taken into account.

With these assumptions, it was estimated that the total annual energy consumption associated with buildout of the proposed project would emit 1,021 $MTCO_2E$ of GHGs annually.

As noted previously, the proposed project would have a capped occupancy rate which is less than typical residential uses. It is anticipated that the proposed project would have approximately 630 residents. The emissions summarized above would be worst case emissions.

c. Area Source Emissions

Area sources calculated in CalEEMod include architectural coatings, consumer products, and landscaping. Due to the limited outdoor landscaping, CalEEMod estimates that area sources would not result in the emission of measureable GHGs from landscaping activities.

d. Water Use Emissions

As explained in Section 5.2.6, average rates of water consumption were used in the calculation of BAU water use emissions. The proposed project would reduce water consumption by 30 percent. This is a 10 percent increase over CalGreen requirements.

CalEEMod estimates that the embodied energy needed to supply and treat future water use on the project site would emit 216 $MTCO_2E$ of GHGs each year. This quantity is 30 percent less than the amount that would be emitted under BAU.

e. Solid Waste Emissions

The disposal of solid waste produces GHG emissions from anaerobic decomposition in landfills, incineration, and transportation of waste. The method for calculating these emissions is described in Section 5.2.7. For calculating the project's GHG emissions related to solid waste disposal, it was assumed that with implementation of a recycling program, the proposed project with GHG-reducing features would reduce waste by 30 percent. CalEEMod estimates that the disposal of solid waste associated with the proposed project would generate approximately 292 $MTCO_2E$ of GHGs per year.

f. Construction Emissions

GHGs would be emitted from construction equipment, and worker and vendor vehicle fuel trips associated with the construction of the proposed project. The method for calculating these emissions is described in Section 5.2.2. Like in the calculation of BAU construction emissions, all CalEEMod defaults for construction activities were assumed. There are no quantifiable construction GHG reductions known at this time. Therefore, the project construction emissions were assumed to be the same as the BAU construction emissions. It was estimates that construction activities would generate a total of 1,700 $MTCO_2E$. Amortized over 30 years, annual construction GHG emissions associated with construction of the proposed project would approximate 57 $MTCO_2E$ each year.

The Scoping Plan does not identify any measures specific to reducing GHG emissions. While the proposed project would be required by current City policy to divert 50 percent of its construction waste (including lumber) from the landfill, thus potentially exceeding average or BAU waste disposal practice, the GHG emissions reductions from these measures cannot be accurately determined at this time.

g. Total Project Emissions with GHG Reductions

Based on the calculations described above, the combined total project GHG emissions with GHG reductions would be approximately 2,844 $MTCO_2E$. These emissions are summarized in Table 8.

TABLE 8
PROPOSED PROJECT GHG EMISSIONS IN 2020
($MTCO_2E$ PER YEAR)

Emission Source	Project Emissions
Vehicles	1,253
Energy Use	1,021
Area Sources	6
Water Use	216
Solid Waste Disposal	292
Construction	57
TOTAL	**2,844**

6.1.2 Significance of Impacts

Table 9 summarizes the BAU emissions in 2020 and the proposed project emissions in 2020. Table 9 also provides the percentage reductions for comparison with the City's 28.3 percent reduction relative to BAU goal in accordance with the methodology discussed in Section 5.1.2.

TABLE 9
PROPOSED PROJECT AND BAU GHG EMISSIONS IN 2020
($MTCO_2E$ PER YEAR)

Emission Source	BAU Emissions	Project Emissions	Percent Reduction
Vehicles	1,792	1,253	30.1
Energy Use	1,396	1,021	26.9
Area Sources	6	6	0.0
Water Use	309	216	30.0
Solid Waste Disposal	417	292	30.0
Construction	57	57	0.0
TOTAL	**3,976**	**2,844**	**28.5**

BAU emissions, or project emissions without GHG reductions, would total 3,976 $MTCO_2E$ annually. Proposed project emissions with GHG reductions would total 2,844 $MTCO_2E$ per year. This is approximately an 28.5 percent reduction. This would meet the City's reduction goal of 28.3 percent. Impacts would be less than significant.

The following GHG-reducing project design features were taken into account:

- Implement shuttle, van, and car service
- Construction in accordance with 2013 Title 24 energy code.
- Install high efficiency lighting to reduce lighting energy consumption by 25 percent.
- Reduce water consumption by 30 percent.
- Institute recycling and composting services to reduce the amount of waste disposed of by 30 percent.

GHG emission reduction calculations are contained in Attachment 3.

6.1.3 Mitigation, Monitoring, and Reporting

The proposed project would meet the City's 28.3 percent GHG reduction goal. Impacts would be less than significant. No mitigation is required.

6.2 Consistency with Adopted Plans, Policies, and Regulations

6.2.1 Impacts

The regulatory plans and policies discussed extensively in Chapter 4.0 above aim to reduce national, state, and local GHG emissions by primarily targeting the largest emitters of GHGs: the transportation and energy sectors. Plan goals and regulatory standards are thus largely focused on the automobile industry and public utilities. For the transportation sector, the reduction strategy is generally three pronged: to reduce GHG emissions from vehicles by improving engine design; to reduce the carbon content of transportation fuels through research, funding, and incentives to fuel suppliers; and to reduce the miles vehicles travel through land use change and infrastructure investments.

For the energy sector, the reduction strategies aim to reduce energy demand; impose emission caps on energy providers; establish minimum building energy and green building standards; transition to renewable non-fossil fuels; incentivize homeowners and builders; fully recover landfill gas for energy; expand research and development; and so forth.

As discussed above, the proposed project would be constructed in accordance with CalGreen and would achieve GHG reductions through green building design that includes improved energy efficiency and water conservation. The proposed project would meet the City's 28.3 percent reduction goal, and would exceed its fair share in achieving the state's reduction target, thereby not conflicting with the Scoping Plan.

6.2.2 Significance of Impacts

The proposed project is consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development. The level of impacts would be less than significant.

6.2.3 Mitigation, Monitoring, and Reporting

The GHG-reducing project design features outlined above would ensure that the proposed project would achieve the City's GHG reduction goals. By implementing these features impacts would be less than significant.

7.0 Conclusions and Recommendations

As shown in Table 9, the proposed project would reduce GHG emissions by more than 28.3 percent when compared to BAU. Emission reduction measures included in the project design include implementing transportation services, constructing buildings in accordance with 2013 Title 24 energy efficiency requirements, increasing lighting efficiency by 25 percent, reducing water consumption by 30 percent, and instituting recycling and composting services to reduce the amount of waste disposed of by 30 percent. With these project design features, GHG emissions would be less than significant. Additionally, the proposed project is consistent with the goals and strategies of local and state plans, policies, and regulations aimed at reducing GHG emissions from land use and development.

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ATTACHMENTS

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ATTACHMENT 1

CalEEMod Output – BAU Project in 2020

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6054 Glen at Scripps Ranch - BAU 2020

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.43	1000sqft	0.81	15,430.00	0
Hospital	60.00	Bed	1.86	35,610.00	0
Enclosed Parking with Elevator	48.41	1000sqft	1.11	48,410.00	0
Health Club	55.43	1000sqft	2.90	55,430.00	0
Congregate Care (Assisted Living)	400.00	Dwelling Unit	33.42	618,770.00	1144
Congregate Care (Assisted Living)	50.00	Dwelling Unit	2.63	50,200.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2014
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Common/Rec Building = Health Club
Facitilies Building and Other Misc Structures = General Office Building
Carports and Garages = Parking Structure

Construction Phase - approximately 2 years of construction

Grading -

Architectural Coating - SDAPCD VOC content limit = 150 g/L

Vehicle Trips - Commons buildings and facilities building would be used by residents and would not generate additional trips.

Vechicle Emission Factors - Emission factors adjusted using CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Emission factors adjusted using CalEEMod Appendix D Table 4.4

Vechicle Emission Factors - Emission factors adjusted using CalEEMod Appendix D Table 4.4

Woodstoves - No woodstoves or fireplaces

Area Coating - SDAPCD VOC content limit = 150 g/L

Energy Use -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	55.00	200.00
tblConstructionPhase	NumDays	740.00	400.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	7/15/2016	10/9/2015
tblConstructionPhase	PhaseStartDate	10/10/2015	1/5/2015

tblConstructionPhase	PhaseStartDate	3/29/2014	3/31/2014
tblConstructionPhase	PhaseStartDate	2/1/2014	2/3/2014
tblConstructionPhase	PhaseStartDate	10/10/2015	10/12/2015
tblEnergyUse	LightingElect	2.63	2.63
tblEnergyUse	T24E	200.21	200.21
tblEnergyUse	T24E	3.92	3.92
tblEnergyUse	T24NG	4,108.03	4,108.03
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	247.50	0.00
tblFireplaces	NumberNoFireplace	45.00	0.00
tblFireplaces	NumberWood	157.50	0.00
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tblLandUse	LandUseSquareFeet	400,000.00	618,770.00
tblLandUse	LandUseSquareFeet	50,000.00	50,200.00
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tblLandUse	LotAcreage	0.99	1.86
tblLandUse	LotAcreage	1.27	2.90
tblLandUse	LotAcreage	25.00	33.42
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tblVehicleEF	HHD	1,710.67	1,547.78

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tblVehicleEF	LDT1	0.36	0.22
tblVehicleEF	LDT1	4.0800e-003	2.9460e-003
tblVehicleEF	LDT1	5.2290e-003	4.4870e-003
tblVehicleEF	LDT1	3.7310e-003	2.7320e-003
tblVehicleEF	LDT1	4.7820e-003	4.1620e-003
tblVehicleEF	LDT1	0.11	0.08
tblVehicleEF	LDT1	0.34	0.26
tblVehicleEF	LDT1	0.10	0.09
tblVehicleEF	LDT1	0.09	0.04
tblVehicleEF	LDT1	1.28	0.97
tblVehicleEF	LDT1	0.51	0.29
tblVehicleEF	LDT1	4.0870e-003	4.0890e-003
tblVehicleEF	LDT1	9.5900e-004	9.1800e-004
tblVehicleEF	LDT1	0.11	0.08
tblVehicleEF	LDT1	0.34	0.26
tblVehicleEF	LDT1	0.10	0.09
tblVehicleEF	LDT1	0.12	0.05
tblVehicleEF	LDT1	1.28	0.97
tblVehicleEF	LDT1	0.54	0.31
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.02	8.2780e-003
tblVehicleEF	LDT2	1.67	0.93
tblVehicleEF	LDT2	4.02	2.20
tblVehicleEF	LDT2	445.45	480.79
tblVehicleEF	LDT2	93.45	89.93
tblVehicleEF	LDT2	0.19	0.19
tblVehicleEF	LDT2	0.22	0.11

tblVehicleEF	LDT2	0.39	0.19
tblVehicleEF	LDT2	1.9140e-003	1.7600e-003
tblVehicleEF	LDT2	2.7870e-003	3.3350e-003
tblVehicleEF	LDT2	1.7530e-003	1.6320e-003
tblVehicleEF	LDT2	2.5560e-003	3.0930e-003
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.16	0.13
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.04	0.02
tblVehicleEF	LDT2	0.54	0.40
tblVehicleEF	LDT2	0.29	0.15
tblVehicleEF	LDT2	4.8570e-003	4.8440e-003
tblVehicleEF	LDT2	1.0690e-003	1.0420e-003
tblVehicleEF	LDT2	0.06	0.04
tblVehicleEF	LDT2	0.16	0.13
tblVehicleEF	LDT2	0.06	0.06
tblVehicleEF	LDT2	0.06	0.03
tblVehicleEF	LDT2	0.54	0.40
tblVehicleEF	LDT2	0.31	0.16
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.02	8.2780e-003
tblVehicleEF	LDT2	1.83	1.04
tblVehicleEF	LDT2	3.03	1.65
tblVehicleEF	LDT2	469.98	512.67
tblVehicleEF	LDT2	93.45	89.93
tblVehicleEF	LDT2	0.19	0.19
tblVehicleEF	LDT2	0.20	0.10
tblVehicleEF	LDT2	0.35	0.17

tblVehicleEF	LDT2	1.9140e-003	1.7600e-003
tblVehicleEF	LDT2	2.7870e-003	3.3350e-003
tblVehicleEF	LDT2	1.7530e-003	1.6320e-003
tblVehicleEF	LDT2	2.5560e-003	3.0930e-003
tblVehicleEF	LDT2	0.09	0.07
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.11	0.10
tblVehicleEF	LDT2	0.04	0.02
tblVehicleEF	LDT2	0.49	0.37
tblVehicleEF	LDT2	0.24	0.12
tblVehicleEF	LDT2	5.1260e-003	5.1150e-003
tblVehicleEF	LDT2	1.0520e-003	1.0320e-003
tblVehicleEF	LDT2	0.09	0.07
tblVehicleEF	LDT2	0.17	0.14
tblVehicleEF	LDT2	0.11	0.10
tblVehicleEF	LDT2	0.07	0.03
tblVehicleEF	LDT2	0.49	0.37
tblVehicleEF	LDT2	0.26	0.13
tblVehicleEF	LDT2	0.02	0.01
tblVehicleEF	LDT2	0.02	8.2780e-003
tblVehicleEF	LDT2	1.65	0.91
tblVehicleEF	LDT2	4.39	2.41
tblVehicleEF	LDT2	441.01	472.26
tblVehicleEF	LDT2	93.45	89.93
tblVehicleEF	LDT2	0.19	0.19
tblVehicleEF	LDT2	0.22	0.11
tblVehicleEF	LDT2	0.40	0.19
tblVehicleEF	LDT2	1.9140e-003	1.7600e-003

tblVehicleEF	LDT2	2.7870e-003	3.3350e-003
tblVehicleEF	LDT2	1.7530e-003	1.6320e-003
tblVehicleEF	LDT2	2.5560e-003	3.0930e-003
tblVehicleEF	LDT2	0.05	0.04
tblVehicleEF	LDT2	0.19	0.14
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.04	0.02
tblVehicleEF	LDT2	0.65	0.49
tblVehicleEF	LDT2	0.31	0.16
tblVehicleEF	LDT2	4.8080e-003	4.7950e-003
tblVehicleEF	LDT2	1.0750e-003	1.0450e-003
tblVehicleEF	LDT2	0.05	0.04
tblVehicleEF	LDT2	0.19	0.14
tblVehicleEF	LDT2	0.05	0.05
tblVehicleEF	LDT2	0.06	0.03
tblVehicleEF	LDT2	0.65	0.49
tblVehicleEF	LDT2	0.33	0.17
tblVehicleEF	LHD1	1.2030e-003	1.1720e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.18	0.17
tblVehicleEF	LHD1	2.46	1.50
tblVehicleEF	LHD1	4.99	3.75
tblVehicleEF	LHD1	8.73	7.98
tblVehicleEF	LHD1	803.68	734.00
tblVehicleEF	LHD1	39.35	36.60
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.06	0.06

tblVehicleEF	LHD1	1.84	1.23
tblVehicleEF	LHD1	1.29	1.16
tblVehicleEF	LHD1	7.1100e-004	6.8200e-004
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	9.3760e-003	9.3720e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3740e-003	8.6400e-004
tblVehicleEF	LHD1	6.5400e-004	6.2700e-004
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.3440e-003	2.3430e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.2600e-003	8.0000e-004
tblVehicleEF	LHD1	2.2920e-003	2.0350e-003
tblVehicleEF	LHD1	0.07	0.07
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.6000e-003	1.6100e-003
tblVehicleEF	LHD1	0.23	0.15
tblVehicleEF	LHD1	0.48	0.48
tblVehicleEF	LHD1	0.45	0.34
tblVehicleEF	LHD1	8.1030e-003	8.0840e-003
tblVehicleEF	LHD1	4.9100e-004	4.7500e-004
tblVehicleEF	LHD1	2.2920e-003	2.0350e-003
tblVehicleEF	LHD1	0.07	0.07
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.6000e-003	1.6100e-003
tblVehicleEF	LHD1	0.27	0.17
tblVehicleEF	LHD1	0.48	0.48
tblVehicleEF	LHD1	0.48	0.36

tblVehicleEF	LHD1	1.2030e-003	1.1720e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.18	0.17
tblVehicleEF	LHD1	2.50	1.53
tblVehicleEF	LHD1	3.90	2.93
tblVehicleEF	LHD1	8.73	7.98
tblVehicleEF	LHD1	803.68	734.00
tblVehicleEF	LHD1	39.35	36.60
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	1.76	1.17
tblVehicleEF	LHD1	1.23	1.11
tblVehicleEF	LHD1	7.1100e-004	6.8200e-004
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	9.3760e-003	9.3720e-003
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	1.3740e-003	8.6400e-004
tblVehicleEF	LHD1	6.5400e-004	6.2700e-004
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.3440e-003	2.3430e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.2600e-003	8.0000e-004
tblVehicleEF	LHD1	3.3870e-003	2.9700e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.9010e-003	2.7670e-003
tblVehicleEF	LHD1	0.23	0.15

tblVehicleEF	LHD1	0.47	0.46
tblVehicleEF	LHD1	0.39	0.29
tblVehicleEF	LHD1	8.1040e-003	8.0840e-003
tblVehicleEF	LHD1	4.7200e-004	4.6100e-004
tblVehicleEF	LHD1	3.3870e-003	2.9700e-003
tblVehicleEF	LHD1	0.08	0.07
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	2.9010e-003	2.7670e-003
tblVehicleEF	LHD1	0.27	0.17
tblVehicleEF	LHD1	0.47	0.46
tblVehicleEF	LHD1	0.41	0.31
tblVehicleEF	LHD1	1.2030e-003	1.1720e-003
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.03	0.02
tblVehicleEF	LHD1	0.18	0.17
tblVehicleEF	LHD1	2.44	1.49
tblVehicleEF	LHD1	5.47	4.11
tblVehicleEF	LHD1	8.73	7.98
tblVehicleEF	LHD1	803.68	734.00
tblVehicleEF	LHD1	39.35	36.60
tblVehicleEF	LHD1	0.04	0.04
tblVehicleEF	LHD1	0.06	0.06
tblVehicleEF	LHD1	1.84	1.22
tblVehicleEF	LHD1	1.31	1.18
tblVehicleEF	LHD1	7.1100e-004	6.8200e-004
tblVehicleEF	LHD1	0.05	0.05
tblVehicleEF	LHD1	9.3760e-003	9.3720e-003
tblVehicleEF	LHD1	0.02	0.02

tblVehicleEF	LHD1	1.3740e-003	8.6400e-004
tblVehicleEF	LHD1	6.5400e-004	6.2700e-004
tblVehicleEF	LHD1	0.02	0.02
tblVehicleEF	LHD1	2.3440e-003	2.3430e-003
tblVehicleEF	LHD1	0.02	0.01
tblVehicleEF	LHD1	1.2600e-003	8.0000e-004
tblVehicleEF	LHD1	2.2280e-003	1.8970e-003
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.4150e-003	1.4220e-003
tblVehicleEF	LHD1	0.23	0.14
tblVehicleEF	LHD1	0.54	0.53
tblVehicleEF	LHD1	0.47	0.36
tblVehicleEF	LHD1	8.1030e-003	8.0830e-003
tblVehicleEF	LHD1	5.0000e-004	4.8200e-004
tblVehicleEF	LHD1	2.2280e-003	1.8970e-003
tblVehicleEF	LHD1	0.09	0.08
tblVehicleEF	LHD1	0.03	0.03
tblVehicleEF	LHD1	1.4150e-003	1.4220e-003
tblVehicleEF	LHD1	0.26	0.17
tblVehicleEF	LHD1	0.54	0.53
tblVehicleEF	LHD1	0.51	0.38
tblVehicleEF	LHD2	8.9100e-004	8.7100e-004
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.02	9.6180e-003
tblVehicleEF	LHD2	0.14	0.13
tblVehicleEF	LHD2	1.77	0.99
tblVehicleEF	LHD2	2.79	1.83

tblVehicleEF	LHD2	9.67	8.84
tblVehicleEF	LHD2	681.07	623.36
tblVehicleEF	LHD2	24.51	22.28
tblVehicleEF	LHD2	5.3540e-003	5.1400e-003
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	2.68	1.78
tblVehicleEF	LHD2	0.75	0.66
tblVehicleEF	LHD2	1.3150e-003	1.2840e-003
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	8.8300e-004	3.8000e-004
tblVehicleEF	LHD2	1.2100e-003	1.1810e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.6230e-003	2.6170e-003
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	7.7900e-004	3.5100e-004
tblVehicleEF	LHD2	1.2900e-003	9.4700e-004
tblVehicleEF	LHD2	0.05	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	9.0400e-004	7.9100e-004
tblVehicleEF	LHD2	0.20	0.13
tblVehicleEF	LHD2	0.28	0.22
tblVehicleEF	LHD2	0.26	0.17
tblVehicleEF	LHD2	6.7790e-003	6.7800e-003
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tblVehicleEF	LHD2	1.2900e-003	9.4700e-004
tblVehicleEF	LHD2	0.05	0.04

tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	9.0400e-004	7.9100e-004
tblVehicleEF	LHD2	0.23	0.15
tblVehicleEF	LHD2	0.28	0.22
tblVehicleEF	LHD2	0.28	0.18
tblVehicleEF	LHD2	8.9100e-004	8.7100e-004
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.02	9.6180e-003
tblVehicleEF	LHD2	0.14	0.13
tblVehicleEF	LHD2	1.77	1.00
tblVehicleEF	LHD2	2.22	1.44
tblVehicleEF	LHD2	9.67	8.84
tblVehicleEF	LHD2	681.07	623.36
tblVehicleEF	LHD2	24.51	22.28
tblVehicleEF	LHD2	5.3540e-003	5.1400e-003
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	2.58	1.72
tblVehicleEF	LHD2	0.71	0.63
tblVehicleEF	LHD2	1.3150e-003	1.2840e-003
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	8.8300e-004	3.8000e-004
tblVehicleEF	LHD2	1.2100e-003	1.1810e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.6230e-003	2.6170e-003
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	7.7900e-004	3.5100e-004

tblVehicleEF	LHD2	1.9150e-003	1.3820e-003
tblVehicleEF	LHD2	0.05	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.6630e-003	1.3590e-003
tblVehicleEF	LHD2	0.20	0.13
tblVehicleEF	LHD2	0.26	0.21
tblVehicleEF	LHD2	0.23	0.15
tblVehicleEF	LHD2	6.7790e-003	6.7800e-003
tblVehicleEF	LHD2	2.9000e-004	2.7400e-004
tblVehicleEF	LHD2	1.9150e-003	1.3820e-003
tblVehicleEF	LHD2	0.05	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	1.6630e-003	1.3590e-003
tblVehicleEF	LHD2	0.23	0.15
tblVehicleEF	LHD2	0.26	0.21
tblVehicleEF	LHD2	0.24	0.16
tblVehicleEF	LHD2	8.9100e-004	8.7100e-004
tblVehicleEF	LHD2	0.02	0.01
tblVehicleEF	LHD2	0.02	9.6180e-003
tblVehicleEF	LHD2	0.14	0.13
tblVehicleEF	LHD2	1.78	0.98
tblVehicleEF	LHD2	3.04	2.01
tblVehicleEF	LHD2	9.67	8.84
tblVehicleEF	LHD2	681.07	623.36
tblVehicleEF	LHD2	24.51	22.28
tblVehicleEF	LHD2	5.3540e-003	5.1400e-003
tblVehicleEF	LHD2	0.12	0.12
tblVehicleEF	LHD2	2.67	1.78

tblVehicleEF	LHD2	0.76	0.67
tblVehicleEF	LHD2	1.3150e-003	1.2840e-003
tblVehicleEF	LHD2	0.07	0.07
tblVehicleEF	LHD2	0.01	0.01
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	8.8300e-004	3.8000e-004
tblVehicleEF	LHD2	1.2100e-003	1.1810e-003
tblVehicleEF	LHD2	0.03	0.03
tblVehicleEF	LHD2	2.6230e-003	2.6170e-003
tblVehicleEF	LHD2	0.03	0.02
tblVehicleEF	LHD2	7.7900e-004	3.5100e-004
tblVehicleEF	LHD2	1.2500e-003	8.6500e-004
tblVehicleEF	LHD2	0.06	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	7.9500e-004	6.9500e-004
tblVehicleEF	LHD2	0.20	0.13
tblVehicleEF	LHD2	0.31	0.24
tblVehicleEF	LHD2	0.28	0.18
tblVehicleEF	LHD2	6.7790e-003	6.7800e-003
tblVehicleEF	LHD2	3.0500e-004	2.8400e-004
tblVehicleEF	LHD2	1.2500e-003	8.6500e-004
tblVehicleEF	LHD2	0.06	0.04
tblVehicleEF	LHD2	0.02	0.02
tblVehicleEF	LHD2	7.9500e-004	6.9500e-004
tblVehicleEF	LHD2	0.23	0.15
tblVehicleEF	LHD2	0.31	0.24
tblVehicleEF	LHD2	0.30	0.19
tblVehicleEF	MCY	34.80	28.19

tblVehicleEF	MCY	9.93	10.27
tblVehicleEF	MCY	157.47	156.52
tblVehicleEF	MCY	46.22	38.51
tblVehicleEF	MCY	6.5370e-003	6.5640e-003
tblVehicleEF	MCY	1.29	1.24
tblVehicleEF	MCY	0.31	0.31
tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	8.6100e-004	3.9100e-004
tblVehicleEF	MCY	2.1660e-003	9.6800e-004
tblVehicleEF	MCY	0.02	0.02
tblVehicleEF	MCY	6.9000e-004	3.2800e-004
tblVehicleEF	MCY	1.7030e-003	8.0400e-004
tblVehicleEF	MCY	0.74	0.71
tblVehicleEF	MCY	0.47	0.39
tblVehicleEF	MCY	0.55	0.52
tblVehicleEF	MCY	3.18	2.95
tblVehicleEF	MCY	1.77	1.26
tblVehicleEF	MCY	2.22	2.11
tblVehicleEF	MCY	2.2450e-003	2.2740e-003
tblVehicleEF	MCY	6.9500e-004	6.5600e-004
tblVehicleEF	MCY	0.74	0.71
tblVehicleEF	MCY	0.47	0.39
tblVehicleEF	MCY	0.55	0.52
tblVehicleEF	MCY	3.46	3.22
tblVehicleEF	MCY	1.77	1.26
tblVehicleEF	MCY	2.39	2.27
tblVehicleEF	MCY	32.69	26.61
tblVehicleEF	MCY	8.68	8.79

tblVehicleEF	MCY	157.47	156.52
tblVehicleEF	MCY	46.22	38.51
tblVehicleEF	MCY	6.5370e-003	6.5640e-003
tblVehicleEF	MCY	1.15	1.11
tblVehicleEF	MCY	0.29	0.29
tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	8.6100e-004	3.9100e-004
tblVehicleEF	MCY	2.1660e-003	9.6800e-004
tblVehicleEF	MCY	0.02	0.02
tblVehicleEF	MCY	6.9000e-004	3.2800e-004
tblVehicleEF	MCY	1.7030e-003	8.0400e-004
tblVehicleEF	MCY	1.22	1.17
tblVehicleEF	MCY	0.53	0.46
tblVehicleEF	MCY	1.17	1.11
tblVehicleEF	MCY	3.05	2.86
tblVehicleEF	MCY	1.63	1.13
tblVehicleEF	MCY	1.88	1.81
tblVehicleEF	MCY	2.2070e-003	2.2460e-003
tblVehicleEF	MCY	6.6500e-004	6.2300e-004
tblVehicleEF	MCY	1.22	1.17
tblVehicleEF	MCY	0.53	0.46
tblVehicleEF	MCY	1.17	1.11
tblVehicleEF	MCY	3.32	3.12
tblVehicleEF	MCY	1.63	1.13
tblVehicleEF	MCY	2.02	1.94
tblVehicleEF	MCY	36.21	29.25
tblVehicleEF	MCY	10.53	10.95
tblVehicleEF	MCY	157.47	156.52

tblVehicleEF	MCY	46.22	38.51
tblVehicleEF	MCY	6.5370e-003	6.5640e-003
tblVehicleEF	MCY	1.30	1.25
tblVehicleEF	MCY	0.32	0.32
tblVehicleEF	MCY	0.04	0.04
tblVehicleEF	MCY	8.6100e-004	3.9100e-004
tblVehicleEF	MCY	2.1660e-003	9.6800e-004
tblVehicleEF	MCY	0.02	0.02
tblVehicleEF	MCY	6.9000e-004	3.2800e-004
tblVehicleEF	MCY	1.7030e-003	8.0400e-004
tblVehicleEF	MCY	0.68	0.65
tblVehicleEF	MCY	0.65	0.53
tblVehicleEF	MCY	0.42	0.40
tblVehicleEF	MCY	3.25	3.00
tblVehicleEF	MCY	2.13	1.56
tblVehicleEF	MCY	2.37	2.25
tblVehicleEF	MCY	2.2690e-003	2.2920e-003
tblVehicleEF	MCY	7.0900e-004	6.7100e-004
tblVehicleEF	MCY	0.68	0.65
tblVehicleEF	MCY	0.65	0.53
tblVehicleEF	MCY	0.42	0.40
tblVehicleEF	MCY	3.54	3.27
tblVehicleEF	MCY	2.13	1.56
tblVehicleEF	MCY	2.55	2.41
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	2.49	1.68
tblVehicleEF	MDV	5.98	4.19

tblVehicleEF	MDV	580.27	655.05
tblVehicleEF	MDV	120.41	122.64
tblVehicleEF	MDV	0.14	0.13
tblVehicleEF	MDV	0.36	0.23
tblVehicleEF	MDV	0.58	0.38
tblVehicleEF	MDV	2.2640e-003	2.0400e-003
tblVehicleEF	MDV	3.2830e-003	3.4670e-003
tblVehicleEF	MDV	2.0770e-003	1.8870e-003
tblVehicleEF	MDV	3.0190e-003	3.2110e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.18	0.20
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.07	0.04
tblVehicleEF	MDV	0.58	0.60
tblVehicleEF	MDV	0.51	0.34
tblVehicleEF	MDV	6.1730e-003	6.1880e-003
tblVehicleEF	MDV	1.3680e-003	1.3480e-003
tblVehicleEF	MDV	0.06	0.07
tblVehicleEF	MDV	0.18	0.20
tblVehicleEF	MDV	0.08	0.09
tblVehicleEF	MDV	0.11	0.07
tblVehicleEF	MDV	0.58	0.60
tblVehicleEF	MDV	0.55	0.36
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	2.72	1.86
tblVehicleEF	MDV	4.51	3.15
tblVehicleEF	MDV	611.70	698.42

tblVehicleEF	MDV	120.41	122.64
tblVehicleEF	MDV	0.14	0.13
tblVehicleEF	MDV	0.32	0.21
tblVehicleEF	MDV	0.53	0.35
tblVehicleEF	MDV	2.2640e-003	2.0400e-003
tblVehicleEF	MDV	3.2830e-003	3.4670e-003
tblVehicleEF	MDV	2.0770e-003	1.8870e-003
tblVehicleEF	MDV	3.0190e-003	3.2110e-003
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.19	0.21
tblVehicleEF	MDV	0.13	0.15
tblVehicleEF	MDV	0.08	0.05
tblVehicleEF	MDV	0.54	0.56
tblVehicleEF	MDV	0.42	0.28
tblVehicleEF	MDV	6.5100e-003	6.5290e-003
tblVehicleEF	MDV	1.3420e-003	1.3290e-003
tblVehicleEF	MDV	0.10	0.10
tblVehicleEF	MDV	0.19	0.21
tblVehicleEF	MDV	0.13	0.15
tblVehicleEF	MDV	0.11	0.07
tblVehicleEF	MDV	0.54	0.56
tblVehicleEF	MDV	0.45	0.30
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	0.03	0.02
tblVehicleEF	MDV	2.46	1.66
tblVehicleEF	MDV	6.53	4.58
tblVehicleEF	MDV	574.59	643.43
tblVehicleEF	MDV	120.41	122.64

tblVehicleEF	MDV	0.14	0.13
tblVehicleEF	MDV	0.36	0.23
tblVehicleEF	MDV	0.59	0.40
tblVehicleEF	MDV	2.2640e-003	2.0400e-003
tblVehicleEF	MDV	3.2830e-003	3.4670e-003
tblVehicleEF	MDV	2.0770e-003	1.8870e-003
tblVehicleEF	MDV	3.0190e-003	3.2110e-003
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.20	0.22
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.07	0.04
tblVehicleEF	MDV	0.70	0.72
tblVehicleEF	MDV	0.54	0.36
tblVehicleEF	MDV	6.1120e-003	6.1260e-003
tblVehicleEF	MDV	1.3780e-003	1.3540e-003
tblVehicleEF	MDV	0.05	0.05
tblVehicleEF	MDV	0.20	0.22
tblVehicleEF	MDV	0.06	0.08
tblVehicleEF	MDV	0.11	0.07
tblVehicleEF	MDV	0.70	0.72
tblVehicleEF	MDV	0.58	0.39
tblVehicleEF	MH	7.22	2.03
tblVehicleEF	MH	11.41	6.63
tblVehicleEF	MH	746.89	681.06
tblVehicleEF	MH	33.70	28.25
tblVehicleEF	MH	3.4690e-003	3.4460e-003
tblVehicleEF	MH	2.04	1.38
tblVehicleEF	MH	1.03	0.74

tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.5620e-003	8.5470e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	2.2260e-003	7.2200e-004
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.1410e-003	2.1370e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	1.9130e-003	6.6300e-004
tblVehicleEF	MH	1.24	0.81
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.62	0.44
tblVehicleEF	MH	0.27	0.10
tblVehicleEF	MH	2.32	1.79
tblVehicleEF	MH	0.71	0.37
tblVehicleEF	MH	7.6150e-003	7.5150e-003
tblVehicleEF	MH	5.4300e-004	4.2900e-004
tblVehicleEF	MH	1.24	0.81
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	0.62	0.44
tblVehicleEF	MH	0.31	0.12
tblVehicleEF	MH	2.32	1.79
tblVehicleEF	MH	0.76	0.39
tblVehicleEF	MH	7.28	2.09
tblVehicleEF	MH	8.75	5.08
tblVehicleEF	MH	746.89	681.06
tblVehicleEF	MH	33.70	28.25
tblVehicleEF	MH	3.4690e-003	3.4460e-003
tblVehicleEF	MH	1.91	1.30

tblVehicleEF	MH	0.98	0.71
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.5620e-003	8.5470e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	2.2260e-003	7.2200e-004
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.1410e-003	2.1370e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	1.9130e-003	6.6300e-004
tblVehicleEF	MH	1.73	1.11
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	1.12	0.76
tblVehicleEF	MH	0.27	0.10
tblVehicleEF	MH	2.25	1.74
tblVehicleEF	MH	0.58	0.31
tblVehicleEF	MH	7.6160e-003	7.5160e-003
tblVehicleEF	MH	4.9700e-004	4.0300e-004
tblVehicleEF	MH	1.73	1.11
tblVehicleEF	MH	0.10	0.07
tblVehicleEF	MH	1.12	0.76
tblVehicleEF	MH	0.31	0.12
tblVehicleEF	MH	2.25	1.74
tblVehicleEF	MH	0.62	0.33
tblVehicleEF	MH	7.24	2.01
tblVehicleEF	MH	12.61	7.33
tblVehicleEF	MH	746.89	681.06
tblVehicleEF	MH	33.70	28.25
tblVehicleEF	MH	3.4690e-003	3.4460e-003

tblVehicleEF	MH	2.05	1.38
tblVehicleEF	MH	1.06	0.76
tblVehicleEF	MH	0.05	0.05
tblVehicleEF	MH	8.5620e-003	8.5470e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	2.2260e-003	7.2200e-004
tblVehicleEF	MH	0.02	0.02
tblVehicleEF	MH	2.1410e-003	2.1370e-003
tblVehicleEF	MH	0.03	0.02
tblVehicleEF	MH	1.9130e-003	6.6300e-004
tblVehicleEF	MH	1.34	0.84
tblVehicleEF	MH	0.14	0.09
tblVehicleEF	MH	0.59	0.41
tblVehicleEF	MH	0.27	0.10
tblVehicleEF	MH	2.48	1.92
tblVehicleEF	MH	0.78	0.39
tblVehicleEF	MH	7.6150e-003	7.5140e-003
tblVehicleEF	MH	5.6400e-004	4.4100e-004
tblVehicleEF	MH	1.34	0.84
tblVehicleEF	MH	0.14	0.09
tblVehicleEF	MH	0.59	0.41
tblVehicleEF	MH	0.31	0.12
tblVehicleEF	MH	2.48	1.92
tblVehicleEF	MH	0.83	0.42
tblVehicleEF	MHD	9.4240e-003	7.6150e-003
tblVehicleEF	MHD	0.01	5.1900e-003
tblVehicleEF	MHD	2.01	1.91
tblVehicleEF	MHD	1.87	0.77

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tblVehicleEF	MHD	606.72	572.06
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tblVehicleEF	MHD	63.41	49.80
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tblVehicleEF	MHD	7.04	4.60
tblVehicleEF	MHD	4.95	1.79
tblVehicleEF	MHD	2.59	1.78
tblVehicleEF	MHD	0.04	0.01
tblVehicleEF	MHD	0.12	0.12
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.14	0.04
tblVehicleEF	MHD	5.3750e-003	1.6820e-003
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tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.8470e-003	2.8430e-003
tblVehicleEF	MHD	0.13	0.04
tblVehicleEF	MHD	4.4870e-003	1.5330e-003
tblVehicleEF	MHD	3.7410e-003	2.1230e-003
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tblVehicleEF	MHD	0.20	0.16
tblVehicleEF	MHD	2.6540e-003	1.6670e-003
tblVehicleEF	MHD	0.30	0.13
tblVehicleEF	MHD	0.83	0.48
tblVehicleEF	MHD	1.88	0.98
tblVehicleEF	MHD	5.8770e-003	6.0640e-003
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tblVehicleEF	MHD	1.1320e-003	8.4700e-004

tblVehicleEF	MHD	3.7410e-003	2.1230e-003
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tblVehicleEF	MHD	0.23	0.19
tblVehicleEF	MHD	2.6540e-003	1.6670e-003
tblVehicleEF	MHD	0.34	0.15
tblVehicleEF	MHD	0.83	0.48
tblVehicleEF	MHD	2.02	1.04
tblVehicleEF	MHD	8.8810e-003	7.1760e-003
tblVehicleEF	MHD	0.01	5.1900e-003
tblVehicleEF	MHD	1.46	1.39
tblVehicleEF	MHD	1.88	0.78
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tblVehicleEF	MHD	63.41	49.80
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tblVehicleEF	MHD	2.47	1.70
tblVehicleEF	MHD	0.04	9.7830e-003
tblVehicleEF	MHD	0.12	0.12
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.14	0.04
tblVehicleEF	MHD	5.3750e-003	1.6820e-003
tblVehicleEF	MHD	0.03	9.0000e-003
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.8470e-003	2.8430e-003
tblVehicleEF	MHD	0.13	0.04

tblVehicleEF	MHD	4.4870e-003	1.5330e-003
tblVehicleEF	MHD	5.6910e-003	3.1680e-003
tblVehicleEF	MHD	0.20	0.10
tblVehicleEF	MHD	0.19	0.15
tblVehicleEF	MHD	5.1170e-003	3.0070e-003
tblVehicleEF	MHD	0.30	0.13
tblVehicleEF	MHD	0.80	0.47
tblVehicleEF	MHD	1.58	0.83
tblVehicleEF	MHD	6.2260e-003	6.4240e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.0350e-003	7.8200e-004
tblVehicleEF	MHD	5.6910e-003	3.1680e-003
tblVehicleEF	MHD	0.20	0.10
tblVehicleEF	MHD	0.22	0.18
tblVehicleEF	MHD	5.1170e-003	3.0070e-003
tblVehicleEF	MHD	0.35	0.15
tblVehicleEF	MHD	0.80	0.47
tblVehicleEF	MHD	1.69	0.89
tblVehicleEF	MHD	0.01	8.2210e-003
tblVehicleEF	MHD	0.01	5.1900e-003
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tblVehicleEF	MHD	1,101.46	995.11
tblVehicleEF	MHD	63.41	49.80
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tblVehicleEF	MHD	6.73	4.39

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tblVehicleEF	MHD	2.65	1.82
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.12	0.12
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	0.14	0.04
tblVehicleEF	MHD	5.3750e-003	1.6820e-003
tblVehicleEF	MHD	0.05	0.01
tblVehicleEF	MHD	0.05	0.05
tblVehicleEF	MHD	2.8470e-003	2.8430e-003
tblVehicleEF	MHD	0.13	0.04
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tblVehicleEF	MHD	0.22	0.18
tblVehicleEF	MHD	2.3350e-003	1.4670e-003
tblVehicleEF	MHD	0.30	0.13
tblVehicleEF	MHD	0.91	0.54
tblVehicleEF	MHD	2.03	1.04
tblVehicleEF	MHD	5.3940e-003	5.5670e-003
tblVehicleEF	MHD	0.01	0.01
tblVehicleEF	MHD	1.1760e-003	8.7600e-004
tblVehicleEF	MHD	3.6610e-003	2.0010e-003
tblVehicleEF	MHD	0.26	0.11
tblVehicleEF	MHD	0.25	0.20
tblVehicleEF	MHD	2.3350e-003	1.4670e-003
tblVehicleEF	MHD	0.34	0.15
tblVehicleEF	MHD	0.91	0.54

tblVehicleEF	MHD	2.17	1.11
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tblVehicleEF	OBUS	2.71	1.34
tblVehicleEF	OBUS	14.86	10.77
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tblVehicleEF	OBUS	1,121.92	1,037.87
tblVehicleEF	OBUS	37.23	32.81
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tblVehicleEF	OBUS	5.79	2.33
tblVehicleEF	OBUS	2.04	1.52
tblVehicleEF	OBUS	0.06	9.5470e-003
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.10	0.04
tblVehicleEF	OBUS	1.4420e-003	6.9800e-004
tblVehicleEF	OBUS	0.05	8.7830e-003
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	2.5690e-003	2.6050e-003
tblVehicleEF	OBUS	0.09	0.03
tblVehicleEF	OBUS	1.2650e-003	6.4300e-004
tblVehicleEF	OBUS	8.7200e-004	7.6500e-004
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.49	0.47
tblVehicleEF	OBUS	5.2300e-004	5.2600e-004
tblVehicleEF	OBUS	0.29	0.15

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tblVehicleEF	OBUS	0.92	0.65
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tblVehicleEF	OBUS	5.2300e-004	5.2600e-004
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tblVehicleEF	OBUS	0.01	0.01
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tblVehicleEF	OBUS	0.85	0.60
tblVehicleEF	OBUS	0.02	0.02
tblVehicleEF	OBUS	3.3000e-003	2.8860e-003
tblVehicleEF	OBUS	3.17	3.78
tblVehicleEF	OBUS	2.69	1.33
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tblVehicleEF	OBUS	2.09	1.56
tblVehicleEF	OBUS	0.07	0.01
tblVehicleEF	OBUS	0.09	0.09
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	0.10	0.04
tblVehicleEF	OBUS	1.4420e-003	6.9800e-004
tblVehicleEF	OBUS	0.07	0.01
tblVehicleEF	OBUS	0.04	0.04
tblVehicleEF	OBUS	2.5690e-003	2.6050e-003
tblVehicleEF	OBUS	0.09	0.03
tblVehicleEF	OBUS	1.2650e-003	6.4300e-004
tblVehicleEF	OBUS	8.9600e-004	7.3600e-004
tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.53	0.50
tblVehicleEF	OBUS	4.8500e-004	4.7600e-004
tblVehicleEF	OBUS	0.29	0.15
tblVehicleEF	OBUS	0.33	0.32
tblVehicleEF	OBUS	0.98	0.69
tblVehicleEF	OBUS	5.1030e-003	5.2050e-003
tblVehicleEF	OBUS	0.01	0.01
tblVehicleEF	OBUS	6.6400e-004	5.7200e-004
tblVehicleEF	OBUS	8.9600e-004	7.3600e-004

tblVehicleEF	OBUS	0.03	0.03
tblVehicleEF	OBUS	0.60	0.57
tblVehicleEF	OBUS	4.8500e-004	4.7600e-004
tblVehicleEF	OBUS	0.33	0.18
tblVehicleEF	OBUS	0.33	0.32
tblVehicleEF	OBUS	1.05	0.74
tblVehicleEF	SBUS	5.3980e-003	4.4530e-003
tblVehicleEF	SBUS	7.2570e-003	5.3930e-003
tblVehicleEF	SBUS	1.04	1.05
tblVehicleEF	SBUS	10.39	4.24
tblVehicleEF	SBUS	49.49	34.11
tblVehicleEF	SBUS	581.72	547.00
tblVehicleEF	SBUS	1,133.97	1,024.49
tblVehicleEF	SBUS	144.23	116.73
tblVehicleEF	SBUS	6.2000e-004	5.8600e-004
tblVehicleEF	SBUS	8.19	7.58
tblVehicleEF	SBUS	8.40	7.00
tblVehicleEF	SBUS	2.97	2.59
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.56	0.55
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.09	0.04
tblVehicleEF	SBUS	0.02	5.1810e-003
tblVehicleEF	SBUS	0.03	0.01
tblVehicleEF	SBUS	0.24	0.23
tblVehicleEF	SBUS	2.7330e-003	2.7220e-003
tblVehicleEF	SBUS	0.08	0.04
tblVehicleEF	SBUS	0.01	4.6650e-003

tblVehicleEF	SBUS	0.04	0.03
tblVehicleEF	SBUS	0.46	0.21
tblVehicleEF	SBUS	0.12	0.10
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.71	0.39
tblVehicleEF	SBUS	2.58	1.58
tblVehicleEF	SBUS	4.05	2.21
tblVehicleEF	SBUS	5.6340e-003	5.7980e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.3670e-003	1.9000e-003
tblVehicleEF	SBUS	0.04	0.03
tblVehicleEF	SBUS	0.46	0.21
tblVehicleEF	SBUS	0.13	0.11
tblVehicleEF	SBUS	0.02	0.02
tblVehicleEF	SBUS	0.78	0.43
tblVehicleEF	SBUS	2.58	1.58
tblVehicleEF	SBUS	4.35	2.36
tblVehicleEF	SBUS	5.0870e-003	4.1970e-003
tblVehicleEF	SBUS	7.2570e-003	5.3930e-003
tblVehicleEF	SBUS	0.76	0.76
tblVehicleEF	SBUS	9.85	4.29
tblVehicleEF	SBUS	42.40	28.32
tblVehicleEF	SBUS	616.28	579.49
tblVehicleEF	SBUS	1,133.97	1,024.49
tblVehicleEF	SBUS	144.23	116.73
tblVehicleEF	SBUS	6.2000e-004	5.8600e-004
tblVehicleEF	SBUS	8.46	7.82
tblVehicleEF	SBUS	8.05	6.72

tblVehicleEF	SBUS	2.78	2.42
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	0.56	0.55
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.09	0.04
tblVehicleEF	SBUS	0.02	5.1810e-003
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	0.24	0.23
tblVehicleEF	SBUS	2.7330e-003	2.7220e-003
tblVehicleEF	SBUS	0.08	0.04
tblVehicleEF	SBUS	0.01	4.6650e-003
tblVehicleEF	SBUS	0.06	0.04
tblVehicleEF	SBUS	0.45	0.21
tblVehicleEF	SBUS	0.11	0.09
tblVehicleEF	SBUS	0.04	0.03
tblVehicleEF	SBUS	0.69	0.39
tblVehicleEF	SBUS	2.34	1.43
tblVehicleEF	SBUS	3.44	1.95
tblVehicleEF	SBUS	5.9690e-003	6.1430e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.2370e-003	1.8010e-003
tblVehicleEF	SBUS	0.06	0.04
tblVehicleEF	SBUS	0.45	0.21
tblVehicleEF	SBUS	0.12	0.10
tblVehicleEF	SBUS	0.04	0.03
tblVehicleEF	SBUS	0.76	0.44
tblVehicleEF	SBUS	2.34	1.43
tblVehicleEF	SBUS	3.69	2.08

tblVehicleEF	SBUS	5.8270e-003	4.8080e-003
tblVehicleEF	SBUS	7.2570e-003	5.3930e-003
tblVehicleEF	SBUS	1.44	1.45
tblVehicleEF	SBUS	10.72	4.22
tblVehicleEF	SBUS	53.07	36.98
tblVehicleEF	SBUS	533.99	502.12
tblVehicleEF	SBUS	1,133.97	1,024.49
tblVehicleEF	SBUS	144.23	116.73
tblVehicleEF	SBUS	6.2000e-004	5.8600e-004
tblVehicleEF	SBUS	7.83	7.24
tblVehicleEF	SBUS	8.37	6.98
tblVehicleEF	SBUS	3.06	2.67
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	0.56	0.55
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	0.09	0.04
tblVehicleEF	SBUS	0.02	5.1810e-003
tblVehicleEF	SBUS	0.03	0.02
tblVehicleEF	SBUS	0.24	0.23
tblVehicleEF	SBUS	2.7330e-003	2.7220e-003
tblVehicleEF	SBUS	0.08	0.04
tblVehicleEF	SBUS	0.01	4.6650e-003
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.61	0.26
tblVehicleEF	SBUS	0.13	0.10
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	0.72	0.38
tblVehicleEF	SBUS	3.13	1.93

tblVehicleEF	SBUS	4.36	2.34
tblVehicleEF	SBUS	5.1720e-003	5.3230e-003
tblVehicleEF	SBUS	0.01	0.01
tblVehicleEF	SBUS	2.4330e-003	1.9490e-003
tblVehicleEF	SBUS	0.05	0.03
tblVehicleEF	SBUS	0.61	0.26
tblVehicleEF	SBUS	0.14	0.12
tblVehicleEF	SBUS	0.02	0.01
tblVehicleEF	SBUS	0.79	0.43
tblVehicleEF	SBUS	3.13	1.93
tblVehicleEF	SBUS	4.68	2.50
tblVehicleEF	UBUS	3.98	3.03
tblVehicleEF	UBUS	6.30	5.66
tblVehicleEF	UBUS	2,205.85	1,981.57
tblVehicleEF	UBUS	25.49	22.78
tblVehicleEF	UBUS	2.0920e-003	2.0620e-003
tblVehicleEF	UBUS	12.42	11.05
tblVehicleEF	UBUS	0.89	0.89
tblVehicleEF	UBUS	0.21	0.19
tblVehicleEF	UBUS	4.2900e-004	2.0500e-004
tblVehicleEF	UBUS	0.19	0.18
tblVehicleEF	UBUS	3.6000e-004	1.9000e-004
tblVehicleEF	UBUS	2.0230e-003	1.9740e-003
tblVehicleEF	UBUS	0.05	0.04
tblVehicleEF	UBUS	1.7580e-003	1.8420e-003
tblVehicleEF	UBUS	0.68	0.58
tblVehicleEF	UBUS	0.28	0.32
tblVehicleEF	UBUS	0.57	0.52

tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.7500e-004	3.5800e-004
tblVehicleEF	UBUS	2.0230e-003	1.9740e-003
tblVehicleEF	UBUS	0.05	0.04
tblVehicleEF	UBUS	1.7580e-003	1.8420e-003
tblVehicleEF	UBUS	0.76	0.66
tblVehicleEF	UBUS	0.28	0.32
tblVehicleEF	UBUS	0.61	0.56
tblVehicleEF	UBUS	3.96	3.06
tblVehicleEF	UBUS	5.24	4.66
tblVehicleEF	UBUS	2,205.85	1,981.57
tblVehicleEF	UBUS	25.49	22.78
tblVehicleEF	UBUS	2.0920e-003	2.0620e-003
tblVehicleEF	UBUS	11.98	10.66
tblVehicleEF	UBUS	0.84	0.85
tblVehicleEF	UBUS	0.21	0.19
tblVehicleEF	UBUS	4.2900e-004	2.0500e-004
tblVehicleEF	UBUS	0.19	0.18
tblVehicleEF	UBUS	3.6000e-004	1.9000e-004
tblVehicleEF	UBUS	2.5070e-003	2.4040e-003
tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	3.3120e-003	3.2720e-003
tblVehicleEF	UBUS	0.68	0.59
tblVehicleEF	UBUS	0.25	0.29
tblVehicleEF	UBUS	0.51	0.47
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.5700e-004	3.4100e-004
tblVehicleEF	UBUS	2.5070e-003	2.4040e-003

tblVehicleEF	UBUS	0.05	0.05
tblVehicleEF	UBUS	3.3120e-003	3.2720e-003
tblVehicleEF	UBUS	0.76	0.66
tblVehicleEF	UBUS	0.25	0.29
tblVehicleEF	UBUS	0.54	0.50
tblVehicleEF	UBUS	4.00	3.02
tblVehicleEF	UBUS	6.77	6.10
tblVehicleEF	UBUS	2,205.85	1,981.57
tblVehicleEF	UBUS	25.49	22.78
tblVehicleEF	UBUS	2.0920e-003	2.0620e-003
tblVehicleEF	UBUS	12.36	11.00
tblVehicleEF	UBUS	0.91	0.91
tblVehicleEF	UBUS	0.21	0.19
tblVehicleEF	UBUS	4.2900e-004	2.0500e-004
tblVehicleEF	UBUS	0.19	0.18
tblVehicleEF	UBUS	3.6000e-004	1.9000e-004
tblVehicleEF	UBUS	2.0130e-003	1.8930e-003
tblVehicleEF	UBUS	0.07	0.05
tblVehicleEF	UBUS	1.6460e-003	1.6820e-003
tblVehicleEF	UBUS	0.67	0.58
tblVehicleEF	UBUS	0.34	0.40
tblVehicleEF	UBUS	0.60	0.55
tblVehicleEF	UBUS	0.02	0.02
tblVehicleEF	UBUS	3.8400e-004	3.6600e-004
tblVehicleEF	UBUS	2.0130e-003	1.8930e-003
tblVehicleEF	UBUS	0.07	0.05
tblVehicleEF	UBUS	1.6460e-003	1.6820e-003
tblVehicleEF	UBUS	0.76	0.66

tblVehicleEF	UBUS	0.34	0.40
tblVehicleEF	UBUS	0.64	0.59
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	2.20	3.78
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	8.14	3.00
tblVehicleTrips	SU_TR	2.44	3.78
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	7.19	3.00
tblVehicleTrips	WD_TR	2.74	3.78
tblVehicleTrips	WD_TR	11.01	0.00
tblVehicleTrips	WD_TR	32.93	0.00

tblVehicleTrips	WD_TR	11.81	3.00
tblWoodstoves	NumberCatalytic	22.50	0.00
tblWoodstoves	NumberNoncatalytic	22.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	1.4233	6.4488	6.5603	9.8200e-003	0.7107	0.3501	1.0607	0.2669	0.3267	0.5937	0.0000	869.1177	869.1177	0.1278	0.0000	871.8017
2015	8.7079	4.7304	5.6345	9.7100e-003	0.4225	0.2734	0.6959	0.1133	0.2576	0.3708	0.0000	826.5000	826.5000	0.0961	0.0000	828.5173
Total	**10.1311**	**11.1792**	**12.1947**	**0.0195**	**1.1332**	**0.6234**	**1.7566**	**0.3802**	**0.5843**	**0.9645**	**0.0000**	**1,695.6177**	**1,695.6177**	**0.2239**	**0.0000**	**1,700.3189**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	1.4226	6.4425	6.5563	9.8200e-003	0.7107	0.3497	1.0603	0.2669	0.3264	0.5933	0.0000	868.6419	868.6419	0.1277	0.0000	871.3232
2015	8.7073	4.7260	5.6317	9.7000e-003	0.4225	0.2731	0.6956	0.1133	0.2573	0.3706	0.0000	826.1385	826.1385	0.0960	0.0000	828.1540
Total	**10.1299**	**11.1685**	**12.1880**	**0.0195**	**1.1332**	**0.6227**	**1.7559**	**0.3802**	**0.5837**	**0.9639**	**0.0000**	**1,694.7805**	**1,694.7805**	**0.2237**	**0.0000**	**1,699.4772**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.0119**	**0.0953**	**0.0551**	**0.0512**	**0.0000**	**0.1123**	**0.0398**	**0.0000**	**0.1130**	**0.0664**	**0.0000**	**0.0494**	**0.0494**	**0.0983**	**0.0000**	**0.0495**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5373	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836
Energy	0.0313	0.2764	0.1826	1.7000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	1,390.6681	1,390.6681	0.0495	0.0147	1,396.2560
Mobile	2.0881	1.6063	8.0545	0.0194	1.3124	0.0228	1.3353	0.3510	0.0211	0.3721	0.0000	1,790.8297	1,790.8297	0.0537	0.0000	1,791.9578
Waste						0.0000	0.0000		0.0000	0.0000	185.9661	0.0000	185.9661	10.9903	0.0000	416.7620
Water						0.0000	0.0000		0.0000	0.0000	12.9214	257.5541	270.4754	1.3375	0.0335	308.9426
Total	**6.6566**	**1.9234**	**11.6617**	**0.0212**	**1.3124**	**0.0626**	**1.3750**	**0.3510**	**0.0608**	**0.4118**	**198.8875**	**3,444.5130**	**3,643.4005**	**12.4368**	**0.0482**	**3,919.5020**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5373	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836
Energy	0.0313	0.2764	0.1826	1.7000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	1,390.6681	1,390.6681	0.0495	0.0147	1,396.2560
Mobile	2.0881	1.6063	8.0545	0.0194	1.3124	0.0228	1.3353	0.3510	0.0211	0.3721	0.0000	1,790.8297	1,790.8297	0.0537	0.0000	1,791.9578
Waste						0.0000	0.0000		0.0000	0.0000	185.9661	0.0000	185.9661	10.9903	0.0000	416.7620
Water						0.0000	0.0000		0.0000	0.0000	12.9214	257.5541	270.4754	1.3373	0.0334	308.9220
Total	**6.6566**	**1.9234**	**11.6617**	**0.0212**	**1.3124**	**0.0626**	**1.3750**	**0.3510**	**0.0608**	**0.4118**	**198.8875**	**3,444.5130**	**3,643.4005**	**12.4366**	**0.0481**	**3,919.4814**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**1.9298e-003**	**0.1038**	**5.2583e-004**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/6/2014	1/31/2014	5	20	
2	Grading	Grading	2/3/2014	3/28/2014	5	40	
3	Building Construction	Building Construction	3/31/2014	10/9/2015	5	400	
4	Architectural Coating	Architectural Coating	1/5/2015	10/9/2015	5	200	
5	Paving	Paving	10/12/2015	11/20/2015	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	384.00	73.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	77.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9356
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9356**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0300e-003	1.0000e-003	9.6000e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4424	1.4424	8.0000e-005	0.0000	1.4442
Total	**3.0300e-003**	**1.0000e-003**	**9.6000e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4600e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4424**	**1.4424**	**8.0000e-005**	**0.0000**	**1.4442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5755	0.4291	3.9000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	37.6568	37.6568	0.0111	0.0000	37.8905
Total	**0.0529**	**0.5755**	**0.4291**	**3.9000e-004**	**0.1807**	**0.0313**	**0.2120**	**0.0993**	**0.0288**	**0.1281**	**0.0000**	**37.6568**	**37.6568**	**0.0111**	**0.0000**	**37.8905**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0300e-003	1.0000e-003	9.6000e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4424	1.4424	8.0000e-005	0.0000	1.4442
Total	**3.0300e-003**	**1.0000e-003**	**9.6000e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4600e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4424**	**1.4424**	**8.0000e-005**	**0.0000**	**1.4442**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1735	0.0000	0.1735	0.0719	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1370	1.6144	1.0317	1.2400e-003		0.0776	0.0776		0.0714	0.0714	0.0000	118.9289	118.9289	0.0351	0.0000	119.6669
Total	**0.1370**	**1.6144**	**1.0317**	**1.2400e-003**	**0.1735**	**0.0776**	**0.2511**	**0.0719**	**0.0714**	**0.1433**	**0.0000**	**118.9289**	**118.9289**	**0.0351**	**0.0000**	**119.6669**

3.3 Grading - 2014

Unmitigated Construction Off-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7300e-003	2.2100e-003	0.0213	4.0000e-005	3.2100e-003	3.0000e-005	3.2400e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.2054	3.2054	1.9000e-004	0.0000	3.2093
Total	**6.7300e-003**	**2.2100e-003**	**0.0213**	**4.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2400e-003**	**8.5000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**3.2054**	**3.2054**	**1.9000e-004**	**0.0000**	**3.2093**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1735	0.0000	0.1735	0.0719	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1368	1.6125	1.0304	1.2300e-003		0.0775	0.0775		0.0713	0.0713	0.0000	118.7874	118.7874	0.0351	0.0000	119.5246
Total	**0.1368**	**1.6125**	**1.0304**	**1.2300e-003**	**0.1735**	**0.0775**	**0.2510**	**0.0719**	**0.0713**	**0.1432**	**0.0000**	**118.7874**	**118.7874**	**0.0351**	**0.0000**	**119.5246**

3.3 Grading - 2014

Mitigated Construction Off-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7300e-003	2.2100e-003	0.0213	4.0000e-005	3.2100e-003	3.0000e-005	3.2400e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.2054	3.2054	1.9000e-004	0.0000	3.2093
Total	**6.7300e-003**	**2.2100e-003**	**0.0213**	**4.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2400e-003**	**8.5000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**3.2054**	**3.2054**	**1.9000e-004**	**0.0000**	**3.2093**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3829	3.0941	1.8741	2.6600e-003		0.2206	0.2206		0.2076	0.2076	0.0000	243.3165	243.3165	0.0619	0.0000	244.6157
Total	**0.3829**	**3.0941**	**1.8741**	**2.6600e-003**		**0.2206**	**0.2206**		**0.2076**	**0.2076**	**0.0000**	**243.3165**	**243.3165**	**0.0619**	**0.0000**	**244.6157**

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2010	0.9503	1.1670	1.7300e-003	0.0470	0.0179	0.0649	0.0135	0.0164	0.0299	0.0000	159.8810	159.8810	1.6400e-003	0.0000	159.9155
Worker	0.6397	0.2105	2.0270	3.7500e-003	0.3049	2.6200e-003	0.3075	0.0810	2.3900e-003	0.0834	0.0000	304.6418	304.6418	0.0178	0.0000	305.0145
Total	**0.8407**	**1.1608**	**3.1940**	**5.4800e-003**	**0.3519**	**0.0205**	**0.3724**	**0.0945**	**0.0188**	**0.1133**	**0.0000**	**464.5229**	**464.5229**	**0.0194**	**0.0000**	**464.9299**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3825	3.0904	1.8718	2.6500e-003		0.2203	0.2203		0.2074	0.2074	0.0000	243.0270	243.0270	0.0618	0.0000	244.3247
Total	**0.3825**	**3.0904**	**1.8718**	**2.6500e-003**		**0.2203**	**0.2203**		**0.2074**	**0.2074**	**0.0000**	**243.0270**	**243.0270**	**0.0618**	**0.0000**	**244.3247**

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2010	0.9503	1.1670	1.7300e-003	0.0470	0.0179	0.0649	0.0135	0.0164	0.0299	0.0000	159.8810	159.8810	1.6400e-003	0.0000	159.9155
Worker	0.6397	0.2105	2.0270	3.7500e-003	0.3049	2.6200e-003	0.3075	0.0810	2.3900e-003	0.0834	0.0000	304.6418	304.6418	0.0178	0.0000	305.0145
Total	**0.8407**	**1.1608**	**3.1940**	**5.4800e-003**	**0.3519**	**0.0205**	**0.3724**	**0.0945**	**0.0188**	**0.1133**	**0.0000**	**464.5229**	**464.5229**	**0.0194**	**0.0000**	**464.9299**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3696	3.0330	1.8932	2.7100e-003		0.2138	0.2138		0.2010	0.2010	0.0000	246.4343	246.4343	0.0618	0.0000	247.7327
Total	**0.3696**	**3.0330**	**1.8932**	**2.7100e-003**		**0.2138**	**0.2138**		**0.2010**	**0.2010**	**0.0000**	**246.4343**	**246.4343**	**0.0618**	**0.0000**	**247.7327**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	0.8294	1.0904	1.7600e-003	0.0480	0.0132	0.0612	0.0137	0.0122	0.0259	0.0000	160.9671	160.9671	1.4100e-003	0.0000	160.9967
Worker	0.6060	0.1937	1.8566	3.8300e-003	0.3110	2.5000e-003	0.3135	0.0827	2.2900e-003	0.0849	0.0000	300.3522	300.3522	0.0166	0.0000	300.7008
Total	**0.7834**	**1.0231**	**2.9470**	**5.5900e-003**	**0.3590**	**0.0157**	**0.3747**	**0.0964**	**0.0145**	**0.1108**	**0.0000**	**461.3193**	**461.3193**	**0.0180**	**0.0000**	**461.6975**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3691	3.0294	1.8910	2.7100e-003		0.2135	0.2135		0.2008	0.2008	0.0000	246.1411	246.1411	0.0618	0.0000	247.4380
Total	**0.3691**	**3.0294**	**1.8910**	**2.7100e-003**		**0.2135**	**0.2135**		**0.2008**	**0.2008**	**0.0000**	**246.1411**	**246.1411**	**0.0618**	**0.0000**	**247.4380**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	0.8294	1.0904	1.7600e-003	0.0480	0.0132	0.0612	0.0137	0.0122	0.0259	0.0000	160.9671	160.9671	1.4100e-003	0.0000	160.9967
Worker	0.6060	0.1937	1.8566	3.8300e-003	0.3110	2.5000e-003	0.3135	0.0827	2.2900e-003	0.0849	0.0000	300.3522	300.3522	0.0166	0.0000	300.7008
Total	**0.7834**	**1.0231**	**2.9470**	**5.5900e-003**	**0.3590**	**0.0157**	**0.3747**	**0.0964**	**0.0145**	**0.1108**	**0.0000**	**461.3193**	**461.3193**	**0.0180**	**0.0000**	**461.6975**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.3557					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0407	0.2570	0.1902	3.0000e-004		0.0221	0.0221		0.0221	0.0221	0.0000	25.5325	25.5325	3.3200e-003	0.0000	25.6024
Total	**7.3963**	**0.2570**	**0.1902**	**3.0000e-004**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**25.5325**	**25.5325**	**3.3200e-003**	**0.0000**	**25.6024**

3.5 Architectural Coating - 2015

Unmitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1203	0.0385	0.3686	7.6000e-004	0.0618	5.0000e-004	0.0622	0.0164	4.6000e-004	0.0169	0.0000	59.6306	59.6306	3.3000e-003	0.0000	59.6998
Total	**0.1203**	**0.0385**	**0.3686**	**7.6000e-004**	**0.0618**	**5.0000e-004**	**0.0622**	**0.0164**	**4.6000e-004**	**0.0169**	**0.0000**	**59.6306**	**59.6306**	**3.3000e-003**	**0.0000**	**59.6998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.3557					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0406	0.2567	0.1900	3.0000e-004		0.0221	0.0221		0.0221	0.0221	0.0000	25.5022	25.5022	3.3200e-003	0.0000	25.5719
Total	**7.3963**	**0.2567**	**0.1900**	**3.0000e-004**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**25.5022**	**25.5022**	**3.3200e-003**	**0.0000**	**25.5719**

3.5 Architectural Coating - 2015

Mitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1203	0.0385	0.3686	7.6000e-004	0.0618	5.0000e-004	0.0622	0.0164	4.6000e-004	0.0169	0.0000	59.6306	59.6306	3.3000e-003	0.0000	59.6998
Total	**0.1203**	**0.0385**	**0.3686**	**7.6000e-004**	**0.0618**	**5.0000e-004**	**0.0622**	**0.0164**	**4.6000e-004**	**0.0169**	**0.0000**	**59.6306**	**59.6306**	**3.3000e-003**	**0.0000**	**59.6998**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.3776	0.2247	3.3000e-004		0.0212	0.0212		0.0195	0.0195	0.0000	31.8408	31.8408	9.5100e-003	0.0000	32.0404
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0348**	**0.3776**	**0.2247**	**3.3000e-004**		**0.0212**	**0.0212**		**0.0195**	**0.0195**	**0.0000**	**31.8408**	**31.8408**	**9.5100e-003**	**0.0000**	**32.0404**

3.6 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	1.1200e-003	0.0108	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7425	1.7425	1.0000e-004	0.0000	1.7445
Total	**3.5200e-003**	**1.1200e-003**	**0.0108**	**2.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.7425**	**1.7425**	**1.0000e-004**	**0.0000**	**1.7445**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0347	0.3772	0.2244	3.3000e-004		0.0212	0.0212		0.0195	0.0195	0.0000	31.8029	31.8029	9.4900e-003	0.0000	32.0023
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0347**	**0.3772**	**0.2244**	**3.3000e-004**		**0.0212**	**0.0212**		**0.0195**	**0.0195**	**0.0000**	**31.8029**	**31.8029**	**9.4900e-003**	**0.0000**	**32.0023**

3.6 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	1.1200e-003	0.0108	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7425	1.7425	1.0000e-004	0.0000	1.7445
Total	**3.5200e-003**	**1.1200e-003**	**0.0108**	**2.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.7425**	**1.7425**	**1.0000e-004**	**0.0000**	**1.7445**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0881	1.6063	8.0545	0.0194	1.3124	0.0228	1.3353	0.3510	0.0211	0.3721	0.0000	1,790.8297	1,790.8297	0.0537	0.0000	1,791.9578
Unmitigated	2.0881	1.6063	8.0545	0.0194	1.3124	0.0228	1.3353	0.3510	0.0211	0.3721	0.0000	1,790.8297	1,790.8297	0.0537	0.0000	1,791.9578

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	1,512.00	1,512.00	1512.00	2,834,670	2,834,670
Congregate Care (Assisted Living)	189.00	189.00	189.00	354,334	354,334
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Hospital	180.00	180.00	180.00	301,294	301,294
Total	1,881.00	1,881.00	1,881.00	3,490,298	3,490,298

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Enclosed Parking with Elevator	5.80	5.80	5.80	0.00	0.00	0.00	0	0	0
General Office Building	5.80	5.80	5.80	33.00	48.00	19.00	77	19	4
Health Club	5.80	5.80	5.80	16.90	64.10	19.00	52	39	9
Hospital	5.80	5.80	5.80	64.90	16.10	19.00	73	25	2

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.513300	0.073549	0.191092	0.130830	0.036094	0.005140	0.012550	0.022916	0.001871	0.002062	0.006564	0.000586	0.003446

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,081.4263	1,081.4263	0.0435	9.0100e-003	1,085.1322
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,081.4263	1,081.4263	0.0435	9.0100e-003	1,085.1322
NaturalGas Mitigated	0.0313	0.2764	0.1826	1.7000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	309.2418	309.2418	5.9300e-003	5.6700e-003	311.1238
NaturalGas Unmitigated	0.0313	0.2764	0.1826	1.7000e-003		0.0216	0.0216		0.0216	0.0216	0.0000	309.2418	309.2418	5.9300e-003	5.6700e-003	311.1238

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	363531	1.9600e-003	0.0178	0.0150	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	19.3994	19.3994	3.7000e-004	3.6000e-004	19.5175
Health Club	681235	3.6700e-003	0.0334	0.0281	2.0000e-004		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	36.3533	36.3533	7.0000e-004	6.7000e-004	36.5745
Hospital	2.15369e+006	0.0116	0.1056	0.0887	6.3000e-004		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	114.9293	114.9293	2.2000e-003	2.1100e-003	115.6287
Congregate Care (Assisted Living)	2.30801e+006	0.0125	0.1064	0.0453	6.8000e-004		8.6000e-003	8.6000e-003		8.6000e-003	8.6000e-003	0.0000	123.1644	123.1644	2.3600e-003	2.2600e-003	123.9139
Congregate Care (Assisted Living)	288502	1.5600e-003	0.0133	5.6600e-003	8.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	15.3955	15.3955	3.0000e-004	2.8000e-004	15.4892
Total		**0.0313**	**0.2764**	**0.1826**	**1.7000e-003**		**0.0216**	**0.0216**		**0.0216**	**0.0216**	**0.0000**	**309.2418**	**309.2418**	**5.9300e-003**	**5.6800e-003**	**311.1238**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	363531	1.9600e-003	0.0178	0.0150	1.1000e-004		1.3500e-003	1.3500e-003		1.3500e-003	1.3500e-003	0.0000	19.3994	19.3994	3.7000e-004	3.6000e-004	19.5175
Health Club	681235	3.6700e-003	0.0334	0.0281	2.0000e-004		2.5400e-003	2.5400e-003		2.5400e-003	2.5400e-003	0.0000	36.3533	36.3533	7.0000e-004	6.7000e-004	36.5745
Hospital	2.15369e+006	0.0116	0.1056	0.0887	6.3000e-004		8.0200e-003	8.0200e-003		8.0200e-003	8.0200e-003	0.0000	114.9293	114.9293	2.2000e-003	2.1100e-003	115.6287
Congregate Care (Assisted Living)	2.30801e+006	0.0125	0.1064	0.0453	6.8000e-004		8.6000e-003	8.6000e-003		8.6000e-003	8.6000e-003	0.0000	123.1644	123.1644	2.3600e-003	2.2600e-003	123.9139
Congregate Care (Assisted Living)	288502	1.5600e-003	0.0133	5.6600e-003	8.0000e-005		1.0700e-003	1.0700e-003		1.0700e-003	1.0700e-003	0.0000	15.3955	15.3955	3.0000e-004	2.8000e-004	15.4892
Total		**0.0313**	**0.2764**	**0.1826**	**1.7000e-003**		**0.0216**	**0.0216**		**0.0216**	**0.0216**	**0.0000**	**309.2418**	**309.2418**	**5.9300e-003**	**5.6800e-003**	**311.1238**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	1.3982e+006	456.9455	0.0184	3.8100e-003	458.5114
Congregate Care (Assisted Living)	174776	57.1182	2.3000e-003	4.8000e-004	57.3139
Enclosed Parking with Elevator	326234	106.6161	4.2900e-003	8.9000e-004	106.9814
General Office Building	242868	79.3715	3.1900e-003	6.6000e-004	79.6435
Health Club	519933	169.9188	6.8400e-003	1.4200e-003	170.5011
Hospital	647034	211.4563	8.5100e-003	1.7600e-003	212.1809
Total		**1,081.4263**	**0.0435**	**9.0200e-003**	**1,085.1322**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	1.3982e+006	456.9455	0.0184	3.8100e-003	458.5114
Congregate Care (Assisted Living)	174776	57.1182	2.3000e-003	4.8000e-004	57.3139
Enclosed Parking with Elevator	326234	106.6161	4.2900e-003	8.9000e-004	106.9814
General Office Building	242868	79.3715	3.1900e-003	6.6000e-004	79.6435
Health Club	519933	169.9188	6.8400e-003	1.4200e-003	170.5011
Hospital	647034	211.4563	8.5100e-003	1.7600e-003	212.1809
Total		**1,081.4263**	**0.0435**	**9.0200e-003**	**1,085.1322**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.5373	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836
Unmitigated	4.5373	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.2080					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1118	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836
Total	**4.5374**	**0.0406**	**3.4246**	**1.8000e-004**		**0.0182**	**0.0182**		**0.0182**	**0.0182**	**0.0000**	**5.4612**	**5.4612**	**5.8300e-003**	**0.0000**	**5.5836**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.2080					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1118	0.0406	3.4246	1.8000e-004		0.0182	0.0182		0.0182	0.0182	0.0000	5.4612	5.4612	5.8300e-003	0.0000	5.5836
Total	**4.5374**	**0.0406**	**3.4246**	**1.8000e-004**		**0.0182**	**0.0182**		**0.0182**	**0.0182**	**0.0000**	**5.4612**	**5.4612**	**5.8300e-003**	**0.0000**	**5.5836**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	270.4754	1.3373	0.0334	308.9220
Unmitigated	270.4754	1.3375	0.0335	308.9426

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	29.3193 / 18.4839	201.1786	0.9631	0.0242	228.8920
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.74243 / 1.68085	18.6430	0.0901	2.2600e-003	21.2346
Health Club	3.2783 / 2.00928	22.2859	0.1077	2.7000e-003	25.3839
Hospital	5.38882 / 1.02644	28.3679	0.1767	4.3700e-003	33.4321
Total		**270.4754**	**1.3375**	**0.0335**	**308.9427**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	29.3193 / 18.4839	201.1786	0.9629	0.0241	228.8772
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.74243 / 1.68085	18.6430	0.0901	2.2500e-003	21.2333
Health Club	3.2783 / 2.00928	22.2859	0.1077	2.7000e-003	25.3822
Hospital	5.38882 / 1.02644	28.3679	0.1766	4.3600e-003	33.4294
Total		**270.4754**	**1.3373**	**0.0334**	**308.9220**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	185.9661	10.9903	0.0000	416.7620
Unmitigated	185.9661	10.9903	0.0000	416.7620

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	410.63	83.3542	4.9261	0.0000	186.8021
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.35	2.9129	0.1722	0.0000	6.5280
Health Club	315.95	64.1350	3.7903	0.0000	143.7307
Hospital	175.2	35.5640	2.1018	0.0000	79.7013
Total		**185.9661**	**10.9903**	**0.0000**	**416.7620**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	410.63	83.3542	4.9261	0.0000	186.8021
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.35	2.9129	0.1722	0.0000	6.5280
Health Club	315.95	64.1350	3.7903	0.0000	143.7307
Hospital	175.2	35.5640	2.1018	0.0000	79.7013
Total		**185.9661**	**10.9903**	**0.0000**	**416.7620**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 2

CalEEMod Output – Proposed Project in 2020

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6054 Glen at Scripps Ranch - Project 2020

San Diego County APCD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	15.43	1000sqft	0.81	15,430.00	0
Hospital	60.00	Bed	1.86	35,610.00	0
Enclosed Parking with Elevator	48.41	1000sqft	1.11	48,410.00	0
Health Club	55.43	1000sqft	2.90	55,430.00	0
Congregate Care (Assisted Living)	400.00	Dwelling Unit	33.11	618,770.00	1144
Congregate Care (Assisted Living)	50.00	Dwelling Unit	2.63	50,200.00	143

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.6	**Precipitation Freq (Days)**	40
Climate Zone	13			**Operational Year**	2016
Utility Company	San Diego Gas & Electric				
CO2 Intensity (lb/MWhr)	720.49	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Common/Rec Building = Health Club
Facilities Building and Other Misc Structures = General Office Building
Carports and Garages = Parking Structure

Construction Phase - approximately 2 years of construction

Grading -

Architectural Coating - SDAPCD VOC content limit = 150 g/L

Vehicle Trips - Commons Building and Facilities Building would be used by residents/staff and would not generate additional trips
SANDAG trip length = 5.8 miles

Woodstoves - No woodstoves or fireplaces

Area Coating - SDAPCD VOC content limit = 150 g/L

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Mobile Land Use Mitigation -

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	150.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaMitigation	UseLowVOCPaintNonresidentialExteriorValue	150	250
tblConstructionPhase	NumDays	55.00	200.00
tblConstructionPhase	NumDays	740.00	400.00
tblConstructionPhase	NumDays	75.00	40.00
tblConstructionPhase	NumDays	55.00	30.00
tblConstructionPhase	NumDays	30.00	20.00
tblConstructionPhase	PhaseEndDate	7/15/2016	10/9/2015

tblConstructionPhase	PhaseStartDate	10/10/2015	1/5/2015
tblConstructionPhase	PhaseStartDate	3/29/2014	3/31/2014
tblConstructionPhase	PhaseStartDate	2/1/2014	2/3/2014
tblConstructionPhase	PhaseStartDate	10/10/2015	10/12/2015
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	247.50	0.00
tblFireplaces	NumberNoFireplace	45.00	0.00
tblFireplaces	NumberWood	157.50	0.00
tblLandUse	LandUseSquareFeet	42,945.45	35,610.00
tblLandUse	LandUseSquareFeet	400,000.00	618,770.00
tblLandUse	LandUseSquareFeet	50,000.00	50,200.00
tblLandUse	LotAcreage	0.35	0.81
tblLandUse	LotAcreage	0.99	1.86
tblLandUse	LotAcreage	1.27	2.90
tblLandUse	LotAcreage	25.00	33.11
tblLandUse	LotAcreage	3.13	2.63
tblProjectCharacteristics	OperationalYear	2014	2016
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CC_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CNW_TL	7.30	5.80
tblVehicleTrips	CW_TL	9.50	5.80

tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	CW_TL	9.50	5.80
tblVehicleTrips	HO_TL	7.50	5.80
tblVehicleTrips	HS_TL	7.30	5.80
tblVehicleTrips	HW_TL	10.80	5.80
tblVehicleTrips	ST_TR	2.20	3.78
tblVehicleTrips	ST_TR	2.37	0.00
tblVehicleTrips	ST_TR	20.87	0.00
tblVehicleTrips	ST_TR	8.14	3.00
tblVehicleTrips	SU_TR	2.44	3.78
tblVehicleTrips	SU_TR	0.98	0.00
tblVehicleTrips	SU_TR	26.73	0.00
tblVehicleTrips	SU_TR	7.19	3.00
tblVehicleTrips	WD_TR	2.74	3.78
tblVehicleTrips	WD_TR	11.01	0.00
tblVehicleTrips	WD_TR	32.93	0.00
tblVehicleTrips	WD_TR	11.81	3.00
tblWoodstoves	NumberCatalytic	22.50	0.00
tblWoodstoves	NumberNoncatalytic	22.50	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	1.4233	6.4488	6.5603	9.8200e-003	0.7107	0.3501	1.0607	0.2669	0.3267	0.5937	0.0000	869.1177	869.1177	0.1278	0.0000	871.8017
2015	8.7079	4.7304	5.6345	9.7100e-003	0.4225	0.2734	0.6959	0.1133	0.2576	0.3708	0.0000	826.5000	826.5000	0.0961	0.0000	828.5173
Total	**10.1311**	**11.1792**	**12.1947**	**0.0195**	**1.1332**	**0.6234**	**1.7566**	**0.3802**	**0.5843**	**0.9645**	**0.0000**	**1,695.6177**	**1,695.6177**	**0.2239**	**0.0000**	**1,700.3189**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2014	1.4226	6.4425	6.5563	9.8200e-003	0.7107	0.3497	1.0603	0.2669	0.3264	0.5933	0.0000	868.6419	868.6419	0.1277	0.0000	871.3232
2015	8.7073	4.7260	5.6317	9.7000e-003	0.4225	0.2731	0.6956	0.1133	0.2573	0.3706	0.0000	826.1385	826.1385	0.0960	0.0000	828.1540
Total	**10.1299**	**11.1685**	**12.1880**	**0.0195**	**1.1332**	**0.6227**	**1.7559**	**0.3802**	**0.5837**	**0.9639**	**0.0000**	**1,694.7805**	**1,694.7805**	**0.2237**	**0.0000**	**1,699.4772**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.0119**	**0.0953**	**0.0551**	**0.0512**	**0.0000**	**0.1123**	**0.0398**	**0.0000**	**0.1130**	**0.0664**	**0.0000**	**0.0494**	**0.0494**	**0.0983**	**0.0000**	**0.0495**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5324	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782
Energy	0.0298	0.2633	0.1740	1.6200e-003		0.0206	0.0206		0.0206	0.0206	0.0000	1,349.4666	1,349.4666	0.0481	0.0142	1,354.8740
Mobile	2.5802	2.2277	10.6038	0.0194	1.3124	0.0269	1.3393	0.3510	0.0248	0.3758	0.0000	1,531.6899	1,531.6899	0.0693	0.0000	1,533.1443
Waste						0.0000	0.0000		0.0000	0.0000	185.9661	0.0000	185.9661	10.9903	0.0000	416.7620
Water						0.0000	0.0000		0.0000	0.0000	12.9214	257.5541	270.4754	1.3375	0.0335	308.9426
Total	**7.1423**	**2.5306**	**14.1673**	**0.0212**	**1.3124**	**0.0658**	**1.3781**	**0.3510**	**0.0636**	**0.4146**	**198.8875**	**3,144.1717**	**3,343.0592**	**12.4507**	**0.0477**	**3,619.3012**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.5324	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782
Energy	0.0243	0.2148	0.1415	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	1,168.9192	1,168.9192	0.0420	0.0121	1,173.5640
Mobile	2.4477	2.1161	10.1918	0.0182	1.2288	0.0254	1.2542	0.3287	0.0233	0.3520	0.0000	1,438.3463	1,438.3463	0.0655	0.0000	1,439.7224
Waste						0.0000	0.0000		0.0000	0.0000	130.1763	0.0000	130.1763	7.6932	0.0000	291.7334
Water						0.0000	0.0000		0.0000	0.0000	12.9214	257.5541	270.4754	1.3373	0.0334	308.9220
Total	**7.0043**	**2.3706**	**13.7229**	**0.0197**	**1.2288**	**0.0605**	**1.2893**	**0.3287**	**0.0584**	**0.3871**	**143.0977**	**2,870.2807**	**3,013.3784**	**9.1436**	**0.0456**	**3,219.5200**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**1.9317**	**6.3238**	**3.1372**	**6.9910**	**6.3648**	**8.0888**	**6.4471**	**6.3673**	**8.1761**	**6.6401**	**28.0509**	**8.7111**	**9.8617**	**26.5621**	**4.3852**	**11.0458**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	1/6/2014	1/31/2014	5	20	
2	Grading	Grading	2/3/2014	3/28/2014	5	40	
3	Building Construction	Building Construction	3/31/2014	10/9/2015	5	400	
4	Architectural Coating	Architectural Coating	1/5/2015	10/9/2015	5	200	
5	Paving	Paving	10/12/2015	11/20/2015	5	30	

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Grading	Excavators	2	8.00	162	0.38
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Paving	Pavers	2	8.00	125	0.42
Paving	Rollers	2	8.00	80	0.38
Grading	Rubber Tired Dozers	1	8.00	255	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Graders	1	8.00	174	0.41
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Paving Equipment	2	8.00	130	0.36
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Site Preparation	Rubber Tired Dozers	3	8.00	255	0.40
Grading	Scrapers	2	8.00	361	0.48
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	384.00	73.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	77.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Site Preparation - 2014

Unmitigated Construction On-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5762	0.4296	3.9000e-004		0.0314	0.0314		0.0289	0.0289	0.0000	37.7016	37.7016	0.0111	0.0000	37.9356
Total	**0.0529**	**0.5762**	**0.4296**	**3.9000e-004**	**0.1807**	**0.0314**	**0.2120**	**0.0993**	**0.0289**	**0.1282**	**0.0000**	**37.7016**	**37.7016**	**0.0111**	**0.0000**	**37.9356**

3.2 Site Preparation - 2014

Unmitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0300e-003	1.0000e-003	9.6000e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4424	1.4424	8.0000e-005	0.0000	1.4442
Total	**3.0300e-003**	**1.0000e-003**	**9.6000e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4600e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4424**	**1.4424**	**8.0000e-005**	**0.0000**	**1.4442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1807	0.0000	0.1807	0.0993	0.0000	0.0993	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0529	0.5755	0.4291	3.9000e-004		0.0313	0.0313		0.0288	0.0288	0.0000	37.6568	37.6568	0.0111	0.0000	37.8905
Total	**0.0529**	**0.5755**	**0.4291**	**3.9000e-004**	**0.1807**	**0.0313**	**0.2120**	**0.0993**	**0.0288**	**0.1281**	**0.0000**	**37.6568**	**37.6568**	**0.0111**	**0.0000**	**37.8905**

3.2 Site Preparation - 2014

Mitigated Construction Off-Site

Acres of Grading: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0300e-003	1.0000e-003	9.6000e-003	2.0000e-005	1.4400e-003	1.0000e-005	1.4600e-003	3.8000e-004	1.0000e-005	3.9000e-004	0.0000	1.4424	1.4424	8.0000e-005	0.0000	1.4442
Total	**3.0300e-003**	**1.0000e-003**	**9.6000e-003**	**2.0000e-005**	**1.4400e-003**	**1.0000e-005**	**1.4600e-003**	**3.8000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.4424**	**1.4424**	**8.0000e-005**	**0.0000**	**1.4442**

3.3 Grading - 2014

Unmitigated Construction On-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1735	0.0000	0.1735	0.0719	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1370	1.6144	1.0317	1.2400e-003		0.0776	0.0776		0.0714	0.0714	0.0000	118.9289	118.9289	0.0351	0.0000	119.6669
Total	**0.1370**	**1.6144**	**1.0317**	**1.2400e-003**	**0.1735**	**0.0776**	**0.2511**	**0.0719**	**0.0714**	**0.1433**	**0.0000**	**118.9289**	**118.9289**	**0.0351**	**0.0000**	**119.6669**

3.3 Grading - 2014

Unmitigated Construction Off-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7300e-003	2.2100e-003	0.0213	4.0000e-005	3.2100e-003	3.0000e-005	3.2400e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.2054	3.2054	1.9000e-004	0.0000	3.2093
Total	**6.7300e-003**	**2.2100e-003**	**0.0213**	**4.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2400e-003**	**8.5000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**3.2054**	**3.2054**	**1.9000e-004**	**0.0000**	**3.2093**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1735	0.0000	0.1735	0.0719	0.0000	0.0719	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1368	1.6125	1.0304	1.2300e-003		0.0775	0.0775		0.0713	0.0713	0.0000	118.7874	118.7874	0.0351	0.0000	119.5246
Total	**0.1368**	**1.6125**	**1.0304**	**1.2300e-003**	**0.1735**	**0.0775**	**0.2510**	**0.0719**	**0.0713**	**0.1432**	**0.0000**	**118.7874**	**118.7874**	**0.0351**	**0.0000**	**119.5246**

3.3 Grading - 2014

Mitigated Construction Off-Site

Acres of Grading: 100

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.7300e-003	2.2100e-003	0.0213	4.0000e-005	3.2100e-003	3.0000e-005	3.2400e-003	8.5000e-004	3.0000e-005	8.8000e-004	0.0000	3.2054	3.2054	1.9000e-004	0.0000	3.2093
Total	**6.7300e-003**	**2.2100e-003**	**0.0213**	**4.0000e-005**	**3.2100e-003**	**3.0000e-005**	**3.2400e-003**	**8.5000e-004**	**3.0000e-005**	**8.8000e-004**	**0.0000**	**3.2054**	**3.2054**	**1.9000e-004**	**0.0000**	**3.2093**

3.4 Building Construction - 2014

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3829	3.0941	1.8741	2.6600e-003		0.2206	0.2206		0.2076	0.2076	0.0000	243.3165	243.3165	0.0619	0.0000	244.6157
Total	**0.3829**	**3.0941**	**1.8741**	**2.6600e-003**		**0.2206**	**0.2206**		**0.2076**	**0.2076**	**0.0000**	**243.3165**	**243.3165**	**0.0619**	**0.0000**	**244.6157**

3.4 Building Construction - 2014

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2010	0.9503	1.1670	1.7300e-003	0.0470	0.0179	0.0649	0.0135	0.0164	0.0299	0.0000	159.8810	159.8810	1.6400e-003	0.0000	159.9155
Worker	0.6397	0.2105	2.0270	3.7500e-003	0.3049	2.6200e-003	0.3075	0.0810	2.3900e-003	0.0834	0.0000	304.6418	304.6418	0.0178	0.0000	305.0145
Total	**0.8407**	**1.1608**	**3.1940**	**5.4800e-003**	**0.3519**	**0.0205**	**0.3724**	**0.0945**	**0.0188**	**0.1133**	**0.0000**	**464.5229**	**464.5229**	**0.0194**	**0.0000**	**464.9299**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3825	3.0904	1.8718	2.6500e-003		0.2203	0.2203		0.2074	0.2074	0.0000	243.0270	243.0270	0.0618	0.0000	244.3247
Total	**0.3825**	**3.0904**	**1.8718**	**2.6500e-003**		**0.2203**	**0.2203**		**0.2074**	**0.2074**	**0.0000**	**243.0270**	**243.0270**	**0.0618**	**0.0000**	**244.3247**

3.4 Building Construction - 2014

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2010	0.9503	1.1670	1.7300e-003	0.0470	0.0179	0.0649	0.0135	0.0164	0.0299	0.0000	159.8810	159.8810	1.6400e-003	0.0000	159.9155
Worker	0.6397	0.2105	2.0270	3.7500e-003	0.3049	2.6200e-003	0.3075	0.0810	2.3900e-003	0.0834	0.0000	304.6418	304.6418	0.0178	0.0000	305.0145
Total	**0.8407**	**1.1608**	**3.1940**	**5.4800e-003**	**0.3519**	**0.0205**	**0.3724**	**0.0945**	**0.0188**	**0.1133**	**0.0000**	**464.5229**	**464.5229**	**0.0194**	**0.0000**	**464.9299**

3.4 Building Construction - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3696	3.0330	1.8932	2.7100e-003		0.2138	0.2138		0.2010	0.2010	0.0000	246.4343	246.4343	0.0618	0.0000	247.7327
Total	**0.3696**	**3.0330**	**1.8932**	**2.7100e-003**		**0.2138**	**0.2138**		**0.2010**	**0.2010**	**0.0000**	**246.4343**	**246.4343**	**0.0618**	**0.0000**	**247.7327**

3.4 Building Construction - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	0.8294	1.0904	1.7600e-003	0.0480	0.0132	0.0612	0.0137	0.0122	0.0259	0.0000	160.9671	160.9671	1.4100e-003	0.0000	160.9967
Worker	0.6060	0.1937	1.8566	3.8300e-003	0.3110	2.5000e-003	0.3135	0.0827	2.2900e-003	0.0849	0.0000	300.3522	300.3522	0.0166	0.0000	300.7008
Total	**0.7834**	**1.0231**	**2.9470**	**5.5900e-003**	**0.3590**	**0.0157**	**0.3747**	**0.0964**	**0.0145**	**0.1108**	**0.0000**	**461.3193**	**461.3193**	**0.0180**	**0.0000**	**461.6975**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.3691	3.0294	1.8910	2.7100e-003		0.2135	0.2135		0.2008	0.2008	0.0000	246.1411	246.1411	0.0618	0.0000	247.4380
Total	**0.3691**	**3.0294**	**1.8910**	**2.7100e-003**		**0.2135**	**0.2135**		**0.2008**	**0.2008**	**0.0000**	**246.1411**	**246.1411**	**0.0618**	**0.0000**	**247.4380**

3.4 Building Construction - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1774	0.8294	1.0904	1.7600e-003	0.0480	0.0132	0.0612	0.0137	0.0122	0.0259	0.0000	160.9671	160.9671	1.4100e-003	0.0000	160.9967
Worker	0.6060	0.1937	1.8566	3.8300e-003	0.3110	2.5000e-003	0.3135	0.0827	2.2900e-003	0.0849	0.0000	300.3522	300.3522	0.0166	0.0000	300.7008
Total	**0.7834**	**1.0231**	**2.9470**	**5.5900e-003**	**0.3590**	**0.0157**	**0.3747**	**0.0964**	**0.0145**	**0.1108**	**0.0000**	**461.3193**	**461.3193**	**0.0180**	**0.0000**	**461.6975**

3.5 Architectural Coating - 2015

Unmitigated Construction On-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.3557					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0407	0.2570	0.1902	3.0000e-004		0.0221	0.0221		0.0221	0.0221	0.0000	25.5325	25.5325	3.3200e-003	0.0000	25.6024
Total	**7.3963**	**0.2570**	**0.1902**	**3.0000e-004**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**25.5325**	**25.5325**	**3.3200e-003**	**0.0000**	**25.6024**

3.5 Architectural Coating - 2015

Unmitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1203	0.0385	0.3686	7.6000e-004	0.0618	5.0000e-004	0.0622	0.0164	4.6000e-004	0.0169	0.0000	59.6306	59.6306	3.3000e-003	0.0000	59.6998
Total	**0.1203**	**0.0385**	**0.3686**	**7.6000e-004**	**0.0618**	**5.0000e-004**	**0.0622**	**0.0164**	**4.6000e-004**	**0.0169**	**0.0000**	**59.6306**	**59.6306**	**3.3000e-003**	**0.0000**	**59.6998**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	7.3557					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0406	0.2567	0.1900	3.0000e-004		0.0221	0.0221		0.0221	0.0221	0.0000	25.5022	25.5022	3.3200e-003	0.0000	25.5719
Total	**7.3963**	**0.2567**	**0.1900**	**3.0000e-004**		**0.0221**	**0.0221**		**0.0221**	**0.0221**	**0.0000**	**25.5022**	**25.5022**	**3.3200e-003**	**0.0000**	**25.5719**

3.5 Architectural Coating - 2015

Mitigated Construction Off-Site

Acres of Paving: 0

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1203	0.0385	0.3686	7.6000e-004	0.0618	5.0000e-004	0.0622	0.0164	4.6000e-004	0.0169	0.0000	59.6306	59.6306	3.3000e-003	0.0000	59.6998
Total	**0.1203**	**0.0385**	**0.3686**	**7.6000e-004**	**0.0618**	**5.0000e-004**	**0.0622**	**0.0164**	**4.6000e-004**	**0.0169**	**0.0000**	**59.6306**	**59.6306**	**3.3000e-003**	**0.0000**	**59.6998**

3.6 Paving - 2015

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0348	0.3776	0.2247	3.3000e-004		0.0212	0.0212		0.0195	0.0195	0.0000	31.8408	31.8408	9.5100e-003	0.0000	32.0404
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0348**	**0.3776**	**0.2247**	**3.3000e-004**		**0.0212**	**0.0212**		**0.0195**	**0.0195**	**0.0000**	**31.8408**	**31.8408**	**9.5100e-003**	**0.0000**	**32.0404**

3.6 Paving - 2015

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	1.1200e-003	0.0108	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7425	1.7425	1.0000e-004	0.0000	1.7445
Total	**3.5200e-003**	**1.1200e-003**	**0.0108**	**2.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.7425**	**1.7425**	**1.0000e-004**	**0.0000**	**1.7445**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0347	0.3772	0.2244	3.3000e-004		0.0212	0.0212		0.0195	0.0195	0.0000	31.8029	31.8029	9.4900e-003	0.0000	32.0023
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0347**	**0.3772**	**0.2244**	**3.3000e-004**		**0.0212**	**0.0212**		**0.0195**	**0.0195**	**0.0000**	**31.8029**	**31.8029**	**9.4900e-003**	**0.0000**	**32.0023**

3.6 Paving - 2015

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5200e-003	1.1200e-003	0.0108	2.0000e-005	1.8000e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.7425	1.7425	1.0000e-004	0.0000	1.7445
Total	**3.5200e-003**	**1.1200e-003**	**0.0108**	**2.0000e-005**	**1.8000e-003**	**1.0000e-005**	**1.8200e-003**	**4.8000e-004**	**1.0000e-005**	**4.9000e-004**	**0.0000**	**1.7425**	**1.7425**	**1.0000e-004**	**0.0000**	**1.7445**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Transit Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.4477	2.1161	10.1918	0.0182	1.2288	0.0254	1.2542	0.3287	0.0233	0.3520	0.0000	1,438.3463	1,438.3463	0.0655	0.0000	1,439.7224
Unmitigated	2.5802	2.2277	10.6038	0.0194	1.3124	0.0269	1.3393	0.3510	0.0248	0.3758	0.0000	1,531.6899	1,531.6899	0.0693	0.0000	1,533.1443

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Congregate Care (Assisted Living)	1,512.00	1,512.00	1512.00	2,834,670	2,654,244
Congregate Care (Assisted Living)	189.00	189.00	189.00	354,334	331,780
Enclosed Parking with Elevator	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Health Club	0.00	0.00	0.00		
Hospital	180.00	180.00	180.00	301,294	282,116
Total	1,881.00	1,881.00	1,881.00	3,490,298	3,268,140

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Congregate Care (Assisted	5.80	5.80	5.80	41.60	18.80	39.60	86	11	3
Enclosed Parking with Elevator	5.80	5.80	5.80	0.00	0.00	0.00	0	0	0
General Office Building	5.80	5.80	5.80	33.00	48.00	19.00	77	19	4
Health Club	5.80	5.80	5.80	16.90	64.10	19.00	52	39	9
Hospital	5.80	5.80	5.80	64.90	16.10	19.00	73	25	2

4.4 Fleet Mix

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.510118	0.073510	0.192396	0.133166	0.036737	0.005265	0.012605	0.021642	0.001847	0.002083	0.006548	0.000610	0.003471

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	928.5542	928.5542	0.0374	7.7300e-003	931.7362
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,054.9680	1,054.9680	0.0425	8.7900e-003	1,058.5832
NaturalGas Mitigated	0.0243	0.2148	0.1415	1.3200e-003		0.0168	0.0168		0.0168	0.0168	0.0000	240.3650	240.3650	4.6100e-003	4.4100e-003	241.8278
NaturalGas Unmitigated	0.0298	0.2633	0.1740	1.6200e-003		0.0206	0.0206		0.0206	0.0206	0.0000	294.4986	294.4986	5.6400e-003	5.4000e-003	296.2908

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	324493	1.7500e-003	0.0159	0.0134	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.3162	17.3162	3.3000e-004	3.2000e-004	17.4216
Health Club	653520	3.5200e-003	0.0320	0.0269	1.9000e-004		2.4300e-003	2.4300e-003		2.4300e-003	2.4300e-003	0.0000	34.8743	34.8743	6.7000e-004	6.4000e-004	35.0865
Hospital	2.07357e+006	0.0112	0.1017	0.0854	6.1000e-004		7.7300e-003	7.7300e-003		7.7300e-003	7.7300e-003	0.0000	110.6536	110.6536	2.1200e-003	2.0300e-003	111.3270
Congregate Care (Assisted Living)	2.19299e+006	0.0118	0.1011	0.0430	6.4000e-004		8.1700e-003	8.1700e-003		8.1700e-003	8.1700e-003	0.0000	117.0262	117.0262	2.2400e-003	2.1500e-003	117.7384
Congregate Care (Assisted Living)	274123	1.4800e-003	0.0126	5.3700e-003	8.0000e-005		1.0200e-003	1.0200e-003		1.0200e-003	1.0200e-003	0.0000	14.6283	14.6283	2.8000e-004	2.7000e-004	14.7173
Total		**0.0298**	**0.2633**	**0.1740**	**1.6200e-003**		**0.0206**	**0.0206**		**0.0206**	**0.0206**	**0.0000**	**294.4986**	**294.4986**	**5.6400e-003**	**5.4100e-003**	**296.2908**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
General Office Building	259571	1.4000e-003	0.0127	0.0107	8.0000e-005		9.7000e-004	9.7000e-004		9.7000e-004	9.7000e-004	0.0000	13.8517	13.8517	2.7000e-004	2.5000e-004	13.9360
Health Club	590607	3.1800e-003	0.0290	0.0243	1.7000e-004		2.2000e-003	2.2000e-003		2.2000e-003	2.2000e-003	0.0000	31.5170	31.5170	6.0000e-004	5.8000e-004	31.7088
Hospital	1.61678e+006	8.7200e-003	0.0793	0.0666	4.8000e-004		6.0200e-003	6.0200e-003		6.0200e-003	6.0200e-003	0.0000	86.2777	86.2777	1.6500e-003	1.5800e-003	86.8028
Congregate Care (Assisted Living)	1.81094e+006	9.7600e-003	0.0835	0.0355	5.3000e-004		6.7500e-003	6.7500e-003		6.7500e-003	6.7500e-003	0.0000	96.6387	96.6387	1.8500e-003	1.7700e-003	97.2268
Congregate Care (Assisted Living)	226368	1.2200e-003	0.0104	4.4400e-003	7.0000e-005		8.4000e-004	8.4000e-004		8.4000e-004	8.4000e-004	0.0000	12.0798	12.0798	2.3000e-004	2.2000e-004	12.1534
Total		**0.0243**	**0.2148**	**0.1415**	**1.3300e-003**		**0.0168**	**0.0168**		**0.0168**	**0.0168**	**0.0000**	**240.3650**	**240.3650**	**4.6000e-003**	**4.4000e-003**	**241.8278**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	1.38243e+006	451.7896	0.0182	3.7600e-003	453.3378
Congregate Care (Assisted Living)	172804	56.4737	2.2700e-003	4.7000e-004	56.6672
Enclosed Parking with Elevator	326283	106.6323	4.2900e-003	8.9000e-004	106.9977
General Office Building	231296	75.5895	3.0400e-003	6.3000e-004	75.8485
Health Club	498870	163.0351	6.5600e-003	1.3600e-003	163.5938
Hospital	616409	201.4479	8.1100e-003	1.6800e-003	202.1382
Total		**1,054.9680**	**0.0425**	**8.7900e-003**	**1,058.5832**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Congregate Care (Assisted Living)	1.29221e+006	422.3046	0.0170	3.5200e-003	423.7517
Congregate Care (Assisted Living)	161526	52.7881	2.1200e-003	4.4000e-004	52.9690
Enclosed Parking with Elevator	247012	80.7257	3.2500e-003	6.7000e-004	81.0023
General Office Building	192644	62.9576	2.5300e-003	5.2000e-004	63.1734
Health Club	433324	141.6141	5.7000e-003	1.1800e-003	142.0994
Hospital	514565	168.1642	6.7700e-003	1.4000e-003	168.7405
Total		**928.5542**	**0.0374**	**7.7300e-003**	**931.7362**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.5324	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782
Unmitigated	4.5324	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.2080					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1069	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782
Total	**4.5324**	**0.0397**	**3.3896**	**1.8000e-004**		**0.0183**	**0.0183**		**0.0183**	**0.0183**	**0.0000**	**5.4612**	**5.4612**	**5.5700e-003**	**0.0000**	**5.5782**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.2080					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.2176					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1069	0.0397	3.3896	1.8000e-004		0.0183	0.0183		0.0183	0.0183	0.0000	5.4612	5.4612	5.5700e-003	0.0000	5.5782
Total	**4.5324**	**0.0397**	**3.3896**	**1.8000e-004**		**0.0183**	**0.0183**		**0.0183**	**0.0183**	**0.0000**	**5.4612**	**5.4612**	**5.5700e-003**	**0.0000**	**5.5782**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	270.4754	1.3373	0.0334	308.9220
Unmitigated	270.4754	1.3375	0.0335	308.9426

7.2 Water by Land Use

Unmitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	29.3193 / 18.4839	201.1786	0.9631	0.0242	228.8920
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.74243 / 1.68085	18.6430	0.0901	2.2600e-003	21.2346
Health Club	3.2783 / 2.00928	22.2859	0.1077	2.7000e-003	25.3839
Hospital	5.38882 / 1.02644	28.3679	0.1767	4.3700e-003	33.4321
Total		**270.4754**	**1.3375**	**0.0335**	**308.9427**

7.2 Water by Land Use

Mitigated

	Indoor/ Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Congregate Care (Assisted Living)	29.3193 / 18.4839	201.1786	0.9629	0.0241	228.8772
Enclosed Parking with Elevator	0 / 0	0.0000	0.0000	0.0000	0.0000
General Office Building	2.74243 / 1.68085	18.6430	0.0901	2.2500e-003	21.2333
Health Club	3.2783 / 2.00928	22.2859	0.1077	2.7000e-003	25.3822
Hospital	5.38882 / 1.02644	28.3679	0.1766	4.3600e-003	33.4294
Total		**270.4754**	**1.3373**	**0.0334**	**308.9220**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	130.1763	7.6932	0.0000	291.7334
Unmitigated	185.9661	10.9903	0.0000	416.7620

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	410.63	83.3542	4.9261	0.0000	186.8021
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	14.35	2.9129	0.1722	0.0000	6.5280
Health Club	315.95	64.1350	3.7903	0.0000	143.7307
Hospital	175.2	35.5640	2.1018	0.0000	79.7013
Total		**185.9661**	**10.9903**	**0.0000**	**416.7620**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Congregate Care (Assisted Living)	287.441	58.3479	3.4483	0.0000	130.7615
Enclosed Parking with Elevator	0	0.0000	0.0000	0.0000	0.0000
General Office Building	10.045	2.0390	0.1205	0.0000	4.5696
Health Club	221.165	44.8945	2.6532	0.0000	100.6115
Hospital	122.64	24.8948	1.4712	0.0000	55.7909
Total		**130.1763**	**7.6932**	**0.0000**	**291.7334**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Vegetation

ATTACHMENT 3

GHG Emissions Reductions Calculations

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	2020 BAU				2020 Project				% Reduction
	CO2	CH4	N2O	CO2E	CO2	CH4	N2O	CO2E	
Vehicle	1,790.83	0.05	0.00	1,791.96	1,438.35	0.07	0.00	1,439.72	19.7%
Energy	1,390.67	0.05	0.01	1,396.26	1,168.92	0.04	0.01	1,173.56	15.9%
Area	5.46	0.01	0.00	5.58	5.46	0.01	0.00	5.58	0.1%
Water	270.48	1.34	0.03	308.94	189.33	0.94	0.02	216.26	30.0%
Waste	185.97	10.99	0.00	416.76	130.18	7.69	0.00	291.73	30.0%
Construction	1,695.62	0.22	0.00	1,700.32	1,695.62	0.22	0.00	1,700.32	0.0%
Construction (Amortized Over 30 Years)	56.52	0.01	0.00	56.68	56.52	0.01	0.00	56.68	0.0%
TOTAL	3,699.92	12.44	0.05	3,976.18	2,988.76	8.75	0.04	3,183.54	19.9%

*With Additional Reductions	CO2	CH4	N2O	CO2E	% Reduction
Vehicle	1,251.36	0.06	0.00	1,252.56	30.1%
Energy	1,016.96	0.04	0.01	1,021.00	26.9%
Area	5.46	0.01	0.00	5.58	0.1%
Water	189.33	0.94	0.02	216.26	30.0%
Waste	130.18	7.69	0.00	291.73	30.0%
Construction	1,695.62	0.22	0.00	1,700.32	0.0%
Construction (Amortized Over 30 Years)	56.52	0.01	0.00	56.68	0.0%
TOTAL	2,649.81	8.74	0.03	2,843.81	28.5%

*Additional Reductions
LEV III - 2.4%
Tire Pressure Program - 0.6%
Shuttle Services - 10%
RPS - 14%

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PRELIMINARY WATER STUDY

CONDITIONAL USE PERMIT AND
SITE DEVELOPMENT PERMIT

For

The Glen at Scripps Ranch CCRC
City of San Diego

Prepared for: CONTINUING LIFE COMMUNITIES
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TABLE OF CONTENTS

A. PURPOSE **1**

B. PROJECT DESCRIPTION **1**
Figure 1: Vicinity Map 1
Table 1: Project summary. 3

C. EXISTING CONDITIONS **4**

D. PROPOSED PUBLIC IMPROVEMENTS **4**

E. WATER DEMAND AND HYDRAULIC CALCULATIONS **5**
Table 2: Unit Water Demands 6
Table 3: Project comparison 6
Table 4: The Glen at Scripps Ranch Average Annual Water Demand. 7
Table 5: Demand Ratios per *City of San Diego* 8
Table 6: Peak and Maximum Day Water Demands 8
Table 7: Fire Demands per development type. 8

F. ANALYSIS **8**
Table 8: Minimum required design demand 9

G. CONCLUSION **9**

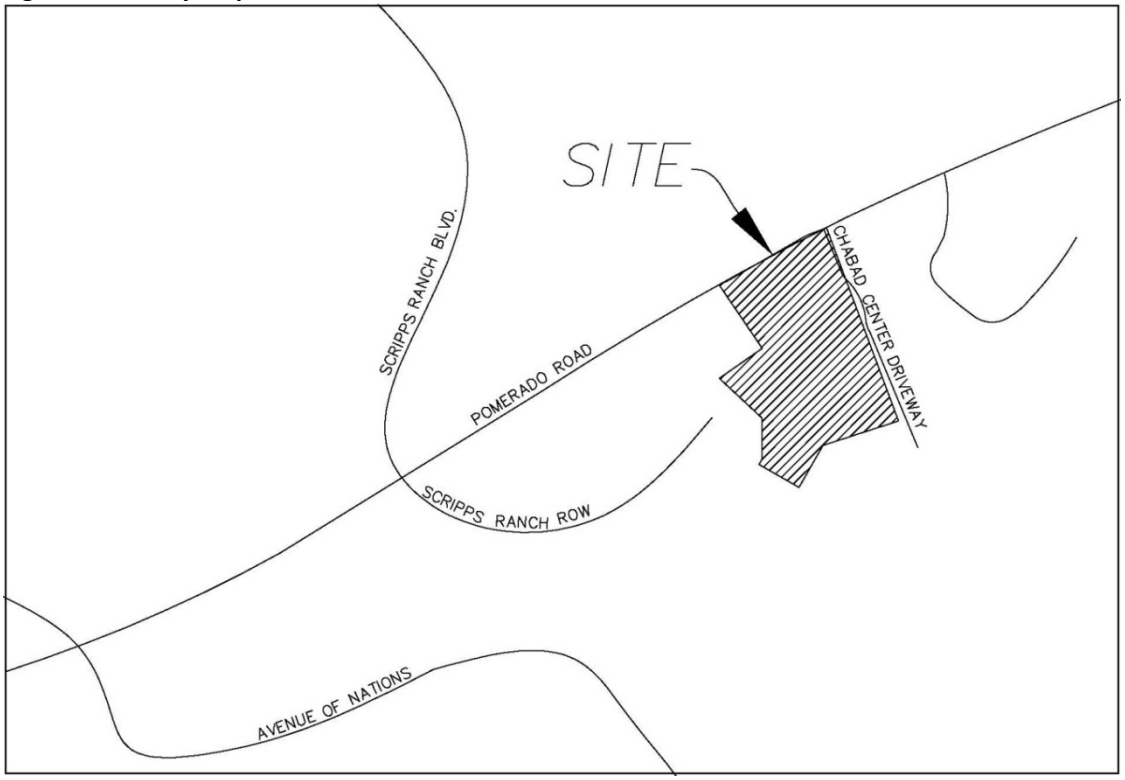
A. PURPOSE

This Water Study has been prepared in support of the Condition Use Permit No. 133-PC (CUP) and Site Development Permit for Continuing Life Communities-The Glen at Scripps Ranch CCRC project located in the Scripps Ranch Community in the City of San Diego. The purpose of the Water Study is to determine the on-site and off-site facilities that will be required to provide potable water service to the planned The Glen at Scripps Ranch CCRC development and to provide the City of San Diego with information regarding the existing and proposed conditions in order that the City may model their public water system to confirm adequate capacity for the CLC project. This study will address the horizontal alignment of the proposed water mains (refer to Figure 3) and demonstrate adequate access for the City of San Diego maintenance personnel along the alignment of the proposed water system(s) and public water easements.

B. PROJECT DESCRIPTION

The Continuing Life Communities project is proposed to be located on the easterly portion of the existing Alliant University Campus. The proposed project is located east of Interstate 15 south of Pomerado Road, and west of the Chabad Hebrew Academy. The site is described as a Portion of Parcel 3 of Parcel Map 20640, in the City of San Diego, County of San Diego, State of California, filed in the Office of the County Recorder of San Diego County. The Master Plan for the Alliant University Campus was included in the previously approved CUP 133PC 1967 and 1972. The location of the Alliant University Campus, as well as the proposed CLC project, is shown on Figure 1 below.

Figure 1: Vicinity Map



There exist public water facilities in Pomerado Road and Chabad Center Driveway, both located adjacent to the CLC site. The CLC project proposes to connect into the existing water mains in Chabad Center Driveway.

The proposed project development will include the construction of 450 assisted living units comprised of various configurations (apartment style, garden apartment style, and cottage/villa style) and 60 skilled nursing beds. The site will incorporate a commons/clubhouse building, a recreational building, a facilities/maintenance building, acute care health center, surface parking lots, onsite vehicular circulation, onsite ADA compliant sidewalks and landscape/hardscape areas adjacent to all structures. The proposed project will total of 510 beds. Refer to the project summary Table 2-1.

Table 1: Project summary.

VILLAS- (Assisted Living)				
	Type	Area	# of Units	Percent
Villa 1	2 BR/2 BA	1,395	20	31.25%
Villa 2	3 BR/2 BA	1,644	44	68.75%
Total			64	100.00%

INDEPENDENT LIVING UNITS- (Assisted Living)				
	Type	Area	# of Units	Percent
Plan 1 - Oak	1 BR/1 BA	665	22	7.64%
Plan 2 - Palm	1 BR/1 BA	813	78	27.08%
Plan 3 - Tecoma	1 BR/1 BA	836	4	1.39%
Plan 4 - Date Palm	1 BR/1 BA	906	24	8.33%
Plan 5 - Spruce	2 BR/2 BA	1,065	12	4.17%
Plan 6 - Wisteria	2 BR/2 BA	1,154	116	40.28%
Plan 9 - Cedar	3 BR/2 BA	1,428	6	2.08%
Plan 10 - Magnolia	3 BR/2 BA	1,527	26	9.03%
Total			288	100.00%
Guest Suites	Studio	400	4	
Type			# of Units	Percent
1 BR			128	44.44%
2 BR			128	44.44%
3 BR			32	11.11%

GARDEN TERRACE SUMMARY- (Assisted Living)				
	Type	Area	# of Units	Percent
Plan 7 -	2 BR/2 BA	1,251	12	25.00%
Plan 8 - Cedar Alt	3 BR/2 BA	1,404	16	33.33%
Plan 10 - Magnolia	3 BR/2 BA	1,527	20	41.67%
Total			48	100.00%

HEALTH CENTER SUMMARY				
Plan	Type	Area	# Units	Percent
Skilled Nursing Building				
Plan A	Private	300	8	13.33%
Plan B	Semi-Private	490	52	86.67%
Total			60	100.00%
Acute Assisted Living Building				
Plan C	Studio	425	2	4.00%
Plan D	1 BR	500	31	62.00%
Plan E	2 BR (1 BED)	950	1	2.00%
Subtotal			34	68.00%
Plan F	Alz. Unit	350	16	32.00%
Total Acute Assisted Living Units			50	100.00%

C. EXISTING CONDITIONS

The proposed CLC project is located south of Pomerado Road (a public right-of-way) and west of Chabad Center Driveway (a private drive with public utility easements). There exist dual 10-inch public water mains in Pomerado Road. The pressure zone of this facility is 1020 zone. The existing Chabad School project, located east of the proposed CLC project, includes a private access drive with dual 10-inch public water mains. It appears that the dual mains were required to provide redundancy to the Chabad School. The existing water improvements are shown on Figure 2 found in Appendix A.

D. PROPOSED PUBLIC IMPROVEMENTS

The proposed water mains will be located within private drives (within public utility easements) throughout the CLC project. The project's main entry road/drive, which connects to Chabad Center Driveway, will contain dual water mains. These dual water mains will connect to the existing dual water mains in Chabad Center Driveway to continue to provide water redundancy into the CLC project from Pomerado Road. Once in the project, there are proposed internal private drives (again with public utility easements) that connect to the project's main entry road. Additional public water mains are proposed to be located within these others on-site drives. The proposed water main system was developed to provide looped water mains, where possible, and reduce the number of dead-end mains.

The overall goal is to design and construct the new water mains to meet the City of San Diego requirements of a public system. Phasing of the improvements is not known at this point. Phasing, if required, will be based on the schedule for developing public improvement plans, obtaining permits, and CLC's ability to finance and construct the project and associated improvements.

The City of San Diego's Water and Sewer Design Guide was used for system layout and performance standards. Per the guide, every water main must be capable of supplying a minimum static pressure of at least 65 pounds-per-square inch (psi). Operating pressures under the peak hour demand and the maximum day peak hour demand plus fire flow shall not fall more than 25 psi below the respective static pressure, and residual water main pressure must not fall below 40 psi. During fire conditions, an operating pressure of at least 20 psi must be maintained in the main near the fire, while a drop in pressure of no more than 25 psi below static is desirable in the remainder of the water system.

Based on city pressure criteria and proposed pad elevations, the entire project will be served by a reduced 850 pressure zone from the city's existing 1020 pressure zone. On-site static pressures within the project will range from 82.5 PSI to 91.8 PSI based on a maximum and minimum pad elevation of 667.5 feet and 641.5 feet, respectively.

The size of the proposed public improvements within the CLC project will be confirmed by the results of the hydraulic calculations performed by the City of San Diego Water Department using demand data provided by Continuing Life Communities. The proposed water improvements are shown on Figure 3 found in Appendix A.

E. WATER DEMAND AND HYDRAULIC CALCULATIONS

The water demand data, included herein, was provided by Continuing Life Communities. Recognizing this type of project is somewhat unique, doesn't relate well to other standard City project types, and most importantly is similar to other projects designed and constructed by Continuing Life Communities in San Diego County and Southern California; Continuing Life Communities has provided data based on these other similar projects.
Unit water demand data for this project is measured in gallons per person per day. The city measures total residential water demand, in gallons per day (gpd), by multiplying the residential population times the unit water demand.

Table 2: Unit Water Demands

Land Use Category	Unit Water Demand
Residential	150 gallons/person-day
Central Business District	6000 gallons/net acre-day
Commercial and Institutional	5000 gallons/net acre-day
Fully Landscaped Park	4000 gallons/net acre-day
Hospitals	22500 gallons/net acre-day
Hotels	6555 gallons/net acre-day
Industrial	6250 gallons/net acre-day
Office	5730 gallons/net acre-day
Schools	4680 gallons/net acre-day

City of San Diego's estimated water demand is based on the Water Department Guidelines and Standards. However, because this project is so unique, the water demand was estimated using data collected by CLC for the University Village Thousand Oaks project located in Thousand Oaks, California. Below is a project comparison table.

Table 3: Project comparison

	Number of Dwelling Units
	DU
Independent Living Units: Assisted Living	
University Village Thousand Oaks	367
The Glen at Scripps Ranch	400
Health Center:	
Oak View- Skilled Nursing	48
The Glen at Scripps Ranch - Skilled Nursing	60
Oak View - Assisted Living (Acute)	49
The Glen at Scripps Ranch - Assisted Living (Acute)	50

Refer to Table 4 and Figure 4 found in Appendix A for specific project water demand data.

Table 4: The Glen at Scripps Ranch Average Annual Water Demand.

Building Type	Net Building Area	Number of Dwelling Units	Number of Stories	Building Height	Sprinklers Fire Service	Resident (City)	Resident (CLC)	Staff	(1) Total	Per City	(2) Per CLC	Per City	Per CLC
						Population per Dwelling Unit				Estimated Usage		Demand	Demand
	sf	DU		ft		person/DU				gal/person-day		gal/day	gal/day
The Villas													
Villa 1	1,395	20	1	23	Yes	3.2	1.3	-	1.3	150	70.8	9,600	1,840
Villa 2	1,644	44	1	21	Yes	3.2	1.3	-	1.3	150	70.8	21,120	4,048
Subtotal - Villas		64										30,720	5,888
Garden Terraces													
Plan 7 -	1,251	12	2	32	Yes	3.2	1.3	-	1.3	150	36.2	5,760	564
Plan 8 - Cedar Alt	1,404	16	2	32	Yes	3.2	1.3	-	1.3	150	36.2	7,680	752
Plan 10 - Magnolia	1,527	20	2	32	Yes	3.2	1.3	-	1.3	150	36.2	9,600	940
Subtotal - Garden Terraces		48										23,040	2,256
Independent Living Units													
Plan 1 - Oak	665	22	4	50	Yes	1.8	1.3	0.1	1.4	150	16.4	5,940	506
Plan 2 - Palm	813	78				1.8	1.3	0.1	1.4	150	16.4	21,060	1,794
Plan 3 - Tecoma	836	4				1.8	1.3	0.1	1.4	150	16.4	1,080	92
Plan 4 - Date Palm	906	24				1.8	1.3	0.1	1.4	150	16.4	6,480	552
Plan 5 - Spruce	1,065	12				1.8	1.3	0.1	1.4	150	16.4	3,240	276
Plan 6 - Wisteria	1,154	116				1.8	1.3	0.1	1.4	150	16.4	31,320	2,668
Plan 9 - Cedar	1,428	6				1.8	1.3	0.1	1.4	150	16.4	1,620	138
Plan 10 - Magnolia	1,527	26				1.8	1.3	0.1	1.4	150	16.4	7,020	598
Subtotal - Independent Living		288										77,760	6,624
Health Center													
Skilled Nursing Building													
Plan A - Private	300	8	1	25	Yes	1.8	1.0	0.64	1.64	150	47.9	2,160	628
Plan B - Semi-Private	490	52				1.8	1.0	0.64	1.64	150	47.9	14,040	4,080
Subtotal - Skilled Nursing		60											
Assisted Living Building													
Plan C - Studio	450	10	2	37	Yes	1.8	1.0	0.63	1.63	150	38.6	2,700	627
Plan D - 1BR	550	20				1.8	1.0	0.63	1.63	150	38.6	5,400	1,254
Plan E - 2BR	950	2				1.8	1.0	0.63	1.63	150	38.6	540	125
Plan F - Alz Unit	350	18				1.8	1.0	0.63	1.63	150	38.6	4,860	1,129
Subtotal - Assisted Living		50											
Subtotal - Health Center		110										29,700	7,844
Other Facilites (3)													
Commons Building	57,600	N/A	2	40	Yes	-	-	-	-	-	-	(4) 6,612	3,500
Recreation Building													2,000
Facilities Building	10,066	N/A	2	33	Yes	-	-	-	-	-	-	20,000	20,000
Entry Kiosk	205	N/A	1	22	Yes	-	-	-	-	-	-	395	395
Guest Suites - Studios	400	4	4	50	Yes	-	-	-	-	-	-		
Landscape	-	-	-	-	-	-	-	-	-	-	-	43,126	43,126
Subtotal - Other		4										70133	69,021
Grand Total (5)		510										231,353	91,633

Notes:

(1) Total population per dwelling unit is Resident plus Staff

(2) Estimated Usage per CLC calculations can be found in Appendix C.
Gallons per dwelling unit-day was taken from data collected for University Village Thousand Oaks

(3) Water demand for Other Facilites was taken from data provided by CLC for University Village Thousand Oaks.
See **CONTINUING LIFE COMMUNITIES - University Village Thousand Oaks, Water Consumption** table in Appendix C.

(4) Per Land Use Category "Commercial and Institutional" the unit water demand is 5000 gal/net acre-day

(5) Total does not include Guest Suites

Based on calculations the average annual water demand for the project proposes a demand for **91,633 gallons per day** (gpd). The average annual water demands are used to determine the peak hour and maximum day water demands. The peaking factors correspond to the zones identified in Figure 2-3 of *City of San Diego Water Department, Capital Improvement Program Guidelines and Standards, November 2002.* The project lies within the inland north peaking factor zone.

Table 5: Demand Ratios per *City of San Diego*

PEAK HOUR DEMAND RATIO	7.5
MAX. DAY DEMAND RATIO	3.6

Table 6: Peak and Maximum Day Water Demands

AVERAGE ANNUAL WATER DEMAND	AVERAGE ANNUAL WATER DEMAND	PEAK HOUR DEMAND RATIO	PEAK HOUR DEMAND	PEAK HOUR DEMAND	MAX. DAY DEMAND RATIO	MAX. DAY DEMAND	MAX. DAY DEMAND
gal/day	mgal/day		gal/day	gal/min		gal/day	gal/min
91,633	0.09	7.5	687,246	477	3.6	329,878	229

The peak hour demand and maximum day demand for the project are **477 gallons per minute (gpm)** and **229 gpm**, respectively.

For design purposes, fire demand estimates provided by *City of San Diego Water Department, Capital Improvement Program Guidelines and Standards, November 2002* were used and are as follows:

Table 7: Fire Demands per development type.

Duplexes	2,500 gpm
Condominiums and Apartments	3,000 gpm
Commercial	4,000 gpm

Refer to Appendix C for estimated Water and Fire Demand calculations.

The water demand data provided herein is for the City of San Diego Public Utilities Department to use in evaluating the hydraulic characteristics of the existing public water facilities and to confirm that the existing public water system has capacity to serve the CLC project.

F. ANALYSIS

Water systems must be designed to provide the minimum residual pressures given:

- Maximum day demands plus fire demand conditions, **or**
- Peak hour demand conditions

The proposed pressure reducing systems will reduce the delivery pressure from the 1020 zone to the 850 zone. The pressure reducing systems will be located at the points of connection to the existing water mains in Chabad Drive. In analyzing the supply to the reduced pressure zone 850, the minimum hydraulic grade line elevation available from the water source is 850 feet. Every water main must be capable of supplying a minimum static pressure of at least 65

pounds-per-square inch (psi) (with no demand on the system). Operating pressures under the maximum day demand condition or under the peak hour demand condition must fall no more than 25 psi below the respective static pressure (with no demand on the system)., and residual water main pressure must be at least 40 psi. During fire conditions, an operating pressure of at least 20 psi must be maintained in the main near the fire, while a drop in pressure of no more than 25 psi below static is desirable in the remainder of the water system.

Design pressure requirements for the entire system must be capable of supporting the commercial fire flow plus the maximum day demand.

Table 8: Minimum required design demand

	LAND USE	FIRE DEMAND	50% REDUCTION FIRE DEMAND	MAX. DAY DEMAND
		gal/min	gal/min	gal/min
THE VILLAS	DUPLEXES	2,500	1,500	14.72
GARDEN TERRACES INDEPENDENT LIVING UNITS	CONDOMINIUMS/APARTMENTS	3,000	1,500	41.81
ALL OTHER FACILITIES	COMMERCIAL	4,000	2,000	172.55

The minimum required design demand is **2,229 gallons per minute (gpm).** Buildings on the project site will be equipped with automatic sprinkler systems. Therefore, a 50% reduction in the required fire flow will be used for the analysis of this project, as outlined in Appendix C.

The system has been modeled using Bentley's WaterCAD program, using the Hazen-Williams equation. The water system demand variables and fire flow requirements were provided by *City of San Diego Water Department, Capital Improvement Program Guidelines and Standards, November 2002*. Refer to Appendix C for minimum water system requirement design.

G. CONCLUSION

A hydraulic analysis was conducted using a model of 450 assisted living units compromised of various configurations (apartment style, garden apartment style, and cottage/villa style), 60 skilled nursing units, as well as 3.2 acres of recreational/commercial area. As stated above, using the water demand units provided by the City of San Diego Water Department Facility Design Guidelines, November 2002, it was determined that The Glen at Scripps Ranch will require 477 GPM in a Peak Demand, and 2,229 GPM in a Max Demand plus Fire Flow. A series of tests were conducted to ensure that the proposed infrastructure is able to support a minimum pressure, and not to exceed the maximum velocity.

Baseline/Static Analysis

Water demands for the baseline test indicate that the minimum pressure of 40 PSI is achieved during static flow, as required by the City of San Diego Water Department Facility Design Guidelines.

Peak Demand

Water demands for peak demand indicate that the minimum pressure of 40 PSI is achieved, per the City of San Diego Water Department Facility Design Guidelines, with a maximum velocity of 1.47 FPS.

Max Day Plus Fire Flow

Water Demands for the max day plus fire flow indicate that the minimum pressure of 20 PSI is achieved with a maximum velocity of 9.11 FPS recorded, per the City of San Diego Water Department Facility Design Guidelines.

The Hydraulic Network Analysis has determined that the existing infrastructure contained within the district will supply adequate pressure for the intended development of The Glen at Scripps Ranch.

APPENDIX A

- Figure 2 – Existing Water Map
- Figure 3 – Proposed Water Improvement Map
- Figure 4 – Water Demand Map
- System Analysis

EXISTING WATER MAP

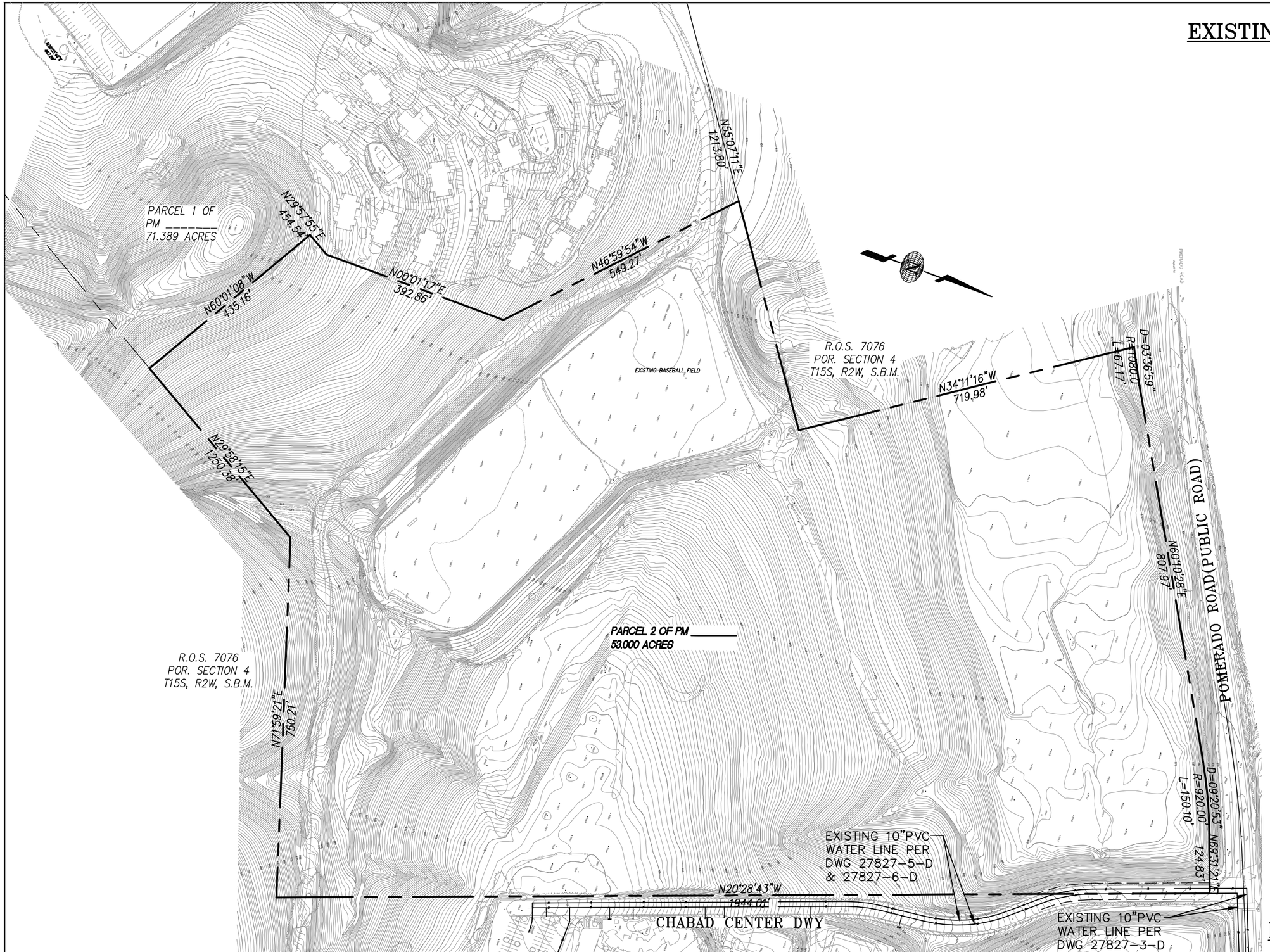


FIGURE 2

Latitude 33
Planning and Engineering
5355 Mira Sorrento Place, Suite 650
San Diego, CA 92121
TEL. 858.751.0633
FAX. 858.751.0634

PROPOSED WATER IMPROVEMENT MAP

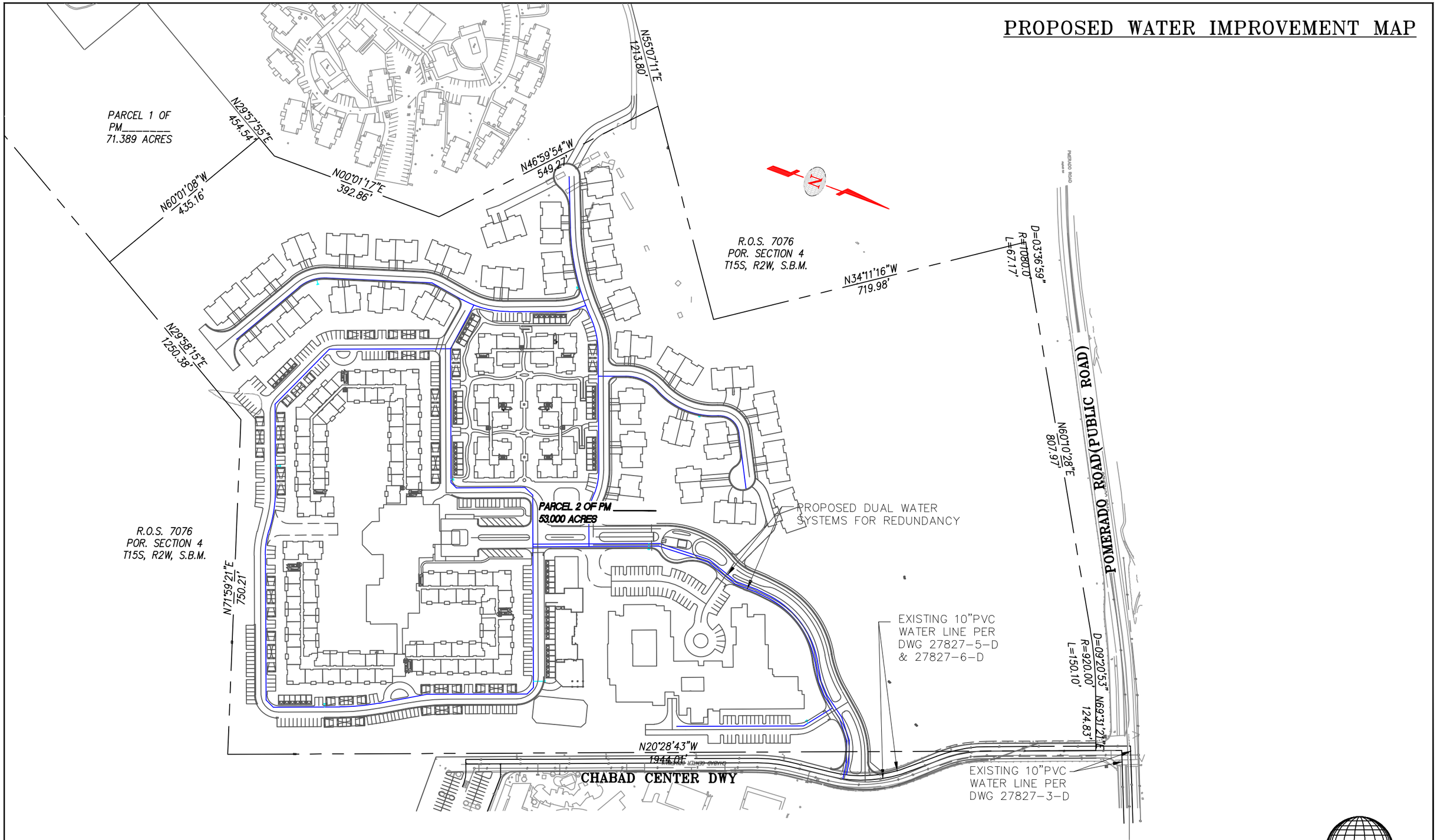


FIGURE 3

Latitude 33
Planning and Engineering
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San Diego, CA 92121
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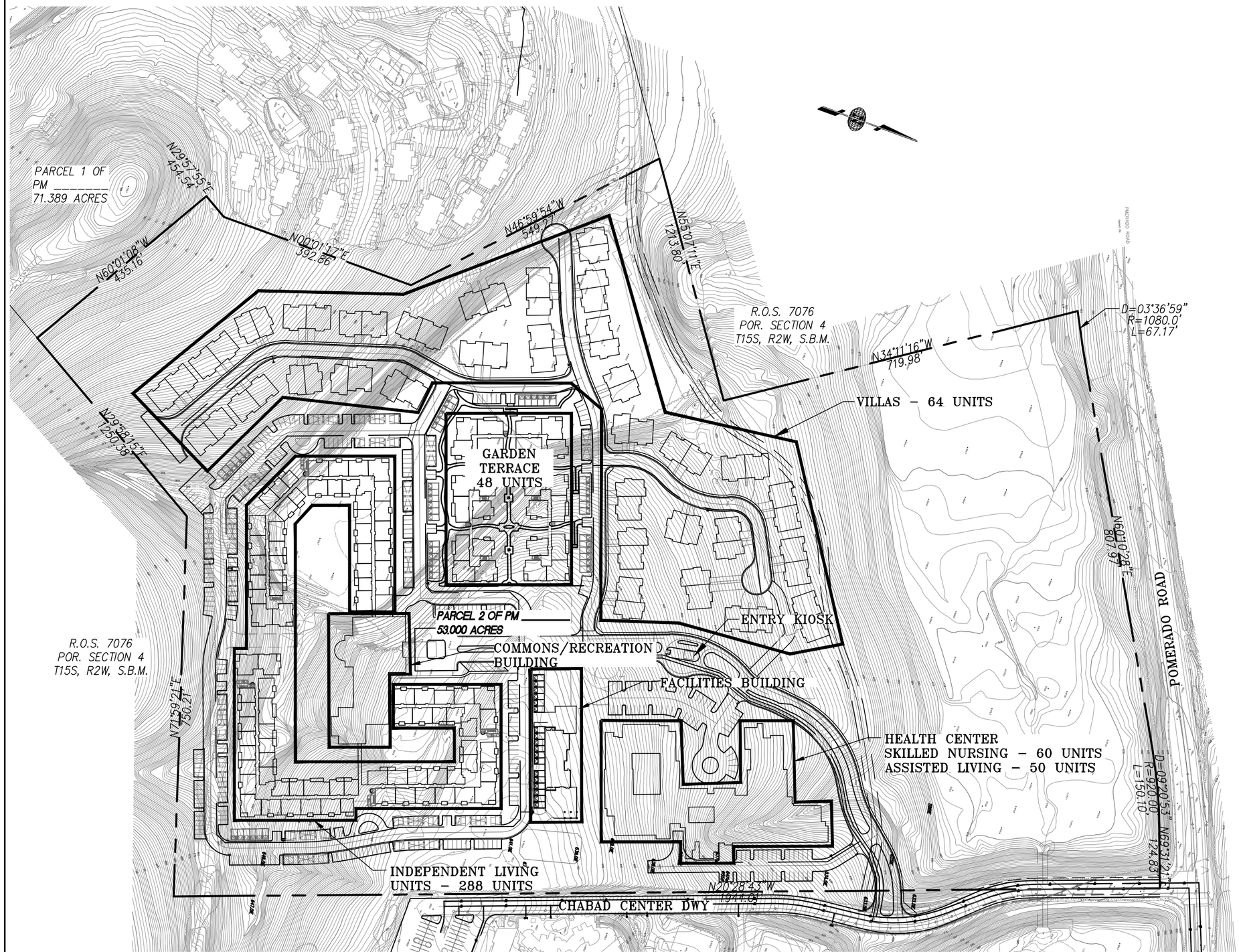
FAX: 858.751.0634

WATER DEMAND DATA MAP



VILLAS- (Assisted Living)				
	Type	Area	# of Units	Percent
Villa 1	2 BR/2 BA	1,395	20	31.25%
Villa 2	3 BR/2 BA	1,644	44	68.75%
Total			64	100.00%

INDEPENDENT LIVING UNITS- (Assisted Living)				
	Type	Area	# of Units	Percent
Plan 1 - Oak	1 BR/1 BA	665	22	7.64%
Plan 2 - Palm	1 BR/1 BA	813	78	27.08%
Plan 3 - Tecoma	1 BR/1 BA	836	4	1.39%
Plan 4 - Date Palm	1 BR/1 BA	906	24	8.33%
Plan 5 - Spruce	2 BR/2 BA	1,065	12	4.17%
Plan 6 - Wisteria	2 BR/2 BA	1,154	116	40.28%
Plan 9 - Cedar	3 BR/2 BA	1,428	6	2.08%
Plan 10 - Magnolia	3 BR/2 BA	1,527	26	9.03%
Total			288	100.00%
Guest Suites	Studio	400	4	
Type			# of Units	Percent
1 BR			128	44.44%
2 BR			128	44.44%
3 BR			32	11.11%

GARDEN TERRACE SUMMARY- (Assisted Living)				
	Type	Area	# of Units	Percent
Plan 7 -	2 BR/2 BA	1,251	12	25.00%
Plan 8 - Cedar Alt	3 BR/2 BA	1,404	16	33.33%
Plan 10 - Magnolia	3 BR/2 BA	1,527	20	41.67%
Total			48	100.00%

HEALTH CENTER SUMMARY				
Plan	Type	Area	# Units	Percent
Skilled Nursing Building				
Plan A	Private	300	8	13.33%
Plan B	Semi-Private	490	52	86.67%
Total			60	100.00%
Acute Assisted Living Building				
Plan C	Studio	425	2	4.00%
Plan D	1 BR	500	31	62.00%
Plan E	2 BR (1 BED)	950	1	2.00%
Subtotal			34	68.00%
Plan F	Alz. Unit	350	16	32.00%
Total Acute Assisted Living Units			50	100.00%

FIGURE 4

Latitude 33
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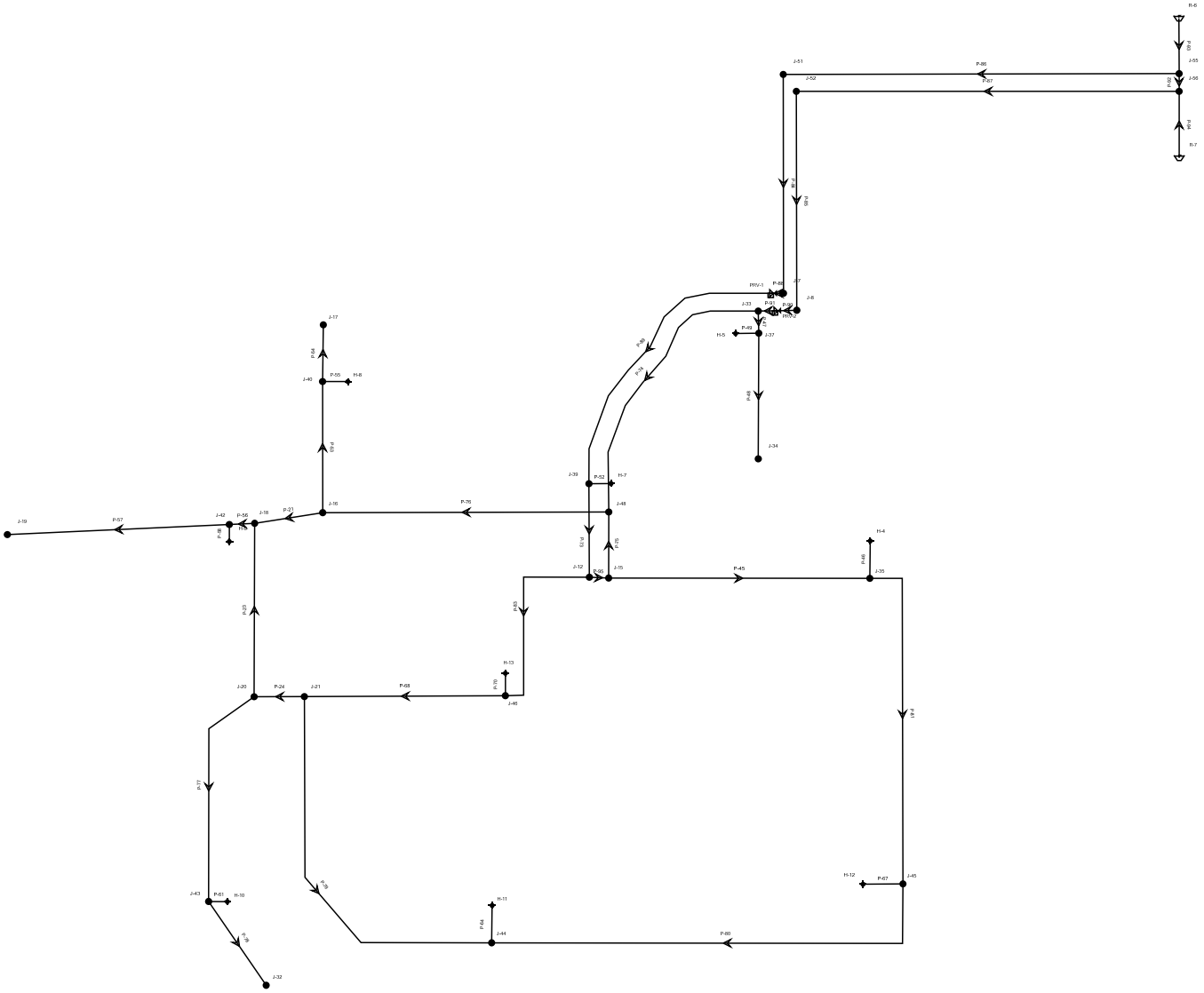
FAX. 858.751.0634

SYSTEM LAYOUT
THE GLEN AT SCRIPPS RANCH CCRC



STATIC ANALYSIS (PIPE TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Length (ft)
72	P-21	J-16	J-18	10.0	PVC	150.0	0	0.00	0.000	163
76	P-23	J-18	J-20	8.0	PVC	150.0	0	0.00	0.000	255
78	P-24	J-20	J-21	8.0	PVC	150.0	0	0.00	0.000	110
114	P-45	J-35	J-15	10.0	PVC	150.0	0	0.00	0.000	301
115	P-46	H-4	J-35	8.0	PVC	150.0	0	0.00	0.000	25
119	P-47	J-33	J-37	10.0	PVC	150.0	0	0.00	0.000	64
120	P-48	J-37	J-34	10.0	PVC	150.0	0	0.00	0.000	296
121	P-49	H-5	J-37	8.0	PVC	150.0	0	0.00	0.000	7
128	P-52	H-7	J-39	8.0	PVC	150.0	0	0.00	0.000	13
131	P-53	J-16	J-40	8.0	PVC	150.0	0	0.00	0.000	252
132	P-54	J-40	J-17	8.0	PVC	150.0	0	0.00	0.000	233
133	P-55	H-8	J-40	8.0	PVC	150.0	0	0.00	0.000	5
137	P-56	J-18	J-42	8.0	PVC	150.0	0	0.00	0.000	43
138	P-57	J-42	J-19	10.0	PVC	150.0	0	0.00	0.000	249
139	P-58	H-9	J-42	8.0	PVC	150.0	0	0.00	0.000	6
144	P-61	H-10	J-43	8.0	PVC	150.0	0	0.00	0.000	12
149	P-64	H-11	J-44	8.0	PVC	150.0	0	0.00	0.000	11
154	P-67	H-12	J-45	8.0	PVC	150.0	0	0.00	0.000	7
157	P-68	J-21	J-46	10.0	PVC	150.0	0	0.00	0.000	292
159	P-70	H-13	J-46	8.0	PVC	150.0	0	0.00	0.000	5
163	P-73	J-39	J-12	10.0	PVC	150.0	0	0.00	0.000	259
165	P-74	J-33	J-48	10.0	PVC	150.0	0	0.00	0.000	726
166	P-75	J-48	J-15	10.0	PVC	150.0	0	0.00	0.000	125
167	P-76	J-16	J-48	10.0	PVC	150.0	0	0.00	0.000	384
168	P-77	J-20	J-43	8.0	PVC	150.0	0	0.00	0.000	365
169	P-78	J-43	J-32	8.0	PVC	150.0	0	0.00	0.000	225
170	P-79	J-21	J-44	8.0	PVC	150.0	0	0.00	0.000	582
172	P-80	J-44	J-45	8.0	PVC	150.0	0	0.00	0.000	663
174	P-81	J-35	J-45	8.0	PVC	150.0	0	0.00	0.000	490
176	P-83	J-46	J-12	10.0	PVC	150.0	0	0.00	0.000	310
178	P-84	J-7	J-51	10.0	PVC	150.0	0	0.00	0.000	646
180	P-85	J-8	J-52	10.0	PVC	150.0	0	0.00	0.000	634
182	P-86	J-51	J-55	10.0	PVC	150.0	0	0.00	0.000	1,350
184	P-87	J-52	J-56	10.0	PVC	150.0	0	0.00	0.000	1,350
188	P-88	J-7	PRV-1	10.0	PVC	150.0	0	0.00	0.000	24
189	P-89	PRV-1	J-39	10.0	PVC	150.0	0	0.00	0.000	735
191	P-90	J-8	PRV-2	10.0	PVC	150.0	0	0.00	0.000	83
192	P-91	PRV-2	J-33	10.0	PVC	150.0	0	0.00	0.000	83

195	P-92	J-56	J-55	12.0	PVC	150.0	0	0.00	0.000	25
197	P-93	R-6	J-55	12.0	PVC	150.0	0	0.00	0.000	46
199	P-94	R-7	J-56	12.0	PVC	150.0	0	0.00	0.000	56
200	P-95	J-12	J-15	10.0	PVC	150.0	0	0.00	0.000	6

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STATIC ANALYSIS (JUNCTION TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
49	J-7	622.00	<None>	<Collection: 0 items>	0	1,020.00	172.2
51	J-8	622.00	<None>	<Collection: 0 items>	0	1,020.00	172.2
59	J-12	655.00	<None>	<Collection: 0 items>	0	850.16	84.4
65	J-15	654.80	<None>	<Collection: 0 items>	0	850.16	84.5
67	J-16	644.60	<None>	<Collection: 1 item>	0	850.16	88.9
69	J-17	638.00	<None>	<Collection: 1 item>	0	850.16	91.8
71	J-18	642.80	<None>	<Collection: 0 items>	0	850.16	89.7
73	J-19	640.00	<None>	<Collection: 1 item>	0	850.16	90.9
75	J-20	648.50	<None>	<Collection: 0 items>	0	850.16	87.3
77	J-21	650.70	<None>	<Collection: 0 items>	0	850.16	86.3
104	J-32	664.50	<None>	<Collection: 1 item>	0	850.16	80.3
106	J-33	627.50	<None>	<Collection: 0 items>	0	850.16	96.3
109	J-34	640.50	<None>	<Collection: 1 item>	0	850.16	90.7
112	J-35	656.00	<None>	<Collection: 1 item>	0	850.16	84.0
118	J-37	630.70	<None>	<Collection: 0 items>	0	850.16	95.0
125	J-39	647.10	<None>	<Collection: 0 items>	0	850.16	87.9
130	J-40	641.20	<None>	<Collection: 0 items>	0	850.16	90.4
136	J-42	642.40	<None>	<Collection: 0 items>	0	850.16	89.9
141	J-43	659.50	<None>	<Collection: 0 items>	0	850.16	82.5
146	J-44	651.30	<None>	<Collection: 1 item>	0	850.16	86.0
151	J-45	656.40	<None>	<Collection: 1 item>	0	850.16	83.8
156	J-46	652.80	<None>	<Collection: 1 item>	0	850.16	85.4
164	J-48	650.90	<None>	<Collection: 0 items>	0	850.16	86.2
177	J-51	597.00	<None>	<Collection: 0 items>	0	1,020.00	183.0
179	J-52	597.00	<None>	<Collection: 0 items>	0	1,020.00	183.0
193	J-55	599.50	<None>	<Collection: 0 items>	0	1,020.00	181.9
194	J-56	599.50	<None>	<Collection: 0 items>	0	1,020.00	181.9

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STATIC ANALYSIS (HYDRANT TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Hydrant Status	Emitter Coefficient (gpm/psi^n)	Lateral Length (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
111	H-4	Closed	0.000	20	656.00	0	850.16	84.0
117	H-5	Closed	0.000	20	631.00	0	850.16	94.8
124	H-7	Closed	0.000	20	647.00	0	850.16	87.9
129	H-8	Closed	0.000	20	642.20	0	850.16	90.0
135	H-9	Closed	0.000	20	643.00	0	850.16	89.6
140	H-10	Closed	0.000	20	660.50	0	850.16	82.1
145	H-11	Closed	0.000	20	651.00	0	850.16	86.2
150	H-12	Closed	0.000	20	656.40	0	850.16	83.8
155	H-13	Closed	0.000	20	653.00	0	850.16	85.3

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PEAK HOUR DEMAND (PIPE TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Length (ft)
72	P-21	J-16	J-18	10.0	PVC	150.0	7	0.03	0.000	163
76	P-23	J-18	J-20	8.0	PVC	150.0	-3	0.02	0.000	255
78	P-24	J-20	J-21	8.0	PVC	150.0	-13	0.08	0.000	110
114	P-45	J-35	J-15	10.0	PVC	150.0	-33	0.13	0.000	301
115	P-46	H-4	J-35	8.0	PVC	150.0	0	0.00	0.000	25
119	P-47	J-33	J-37	10.0	PVC	150.0	359	1.47	0.001	64
120	P-48	J-37	J-34	10.0	PVC	150.0	359	1.47	0.001	296
121	P-49	H-5	J-37	8.0	PVC	150.0	0	0.00	0.000	7
128	P-52	H-7	J-39	8.0	PVC	150.0	0	0.00	0.000	13
131	P-53	J-16	J-40	8.0	PVC	150.0	10	0.06	0.000	252
132	P-54	J-40	J-17	8.0	PVC	150.0	10	0.06	0.000	233
133	P-55	H-8	J-40	8.0	PVC	150.0	0	0.00	0.000	5
137	P-56	J-18	J-42	8.0	PVC	150.0	10	0.06	0.000	43
138	P-57	J-42	J-19	10.0	PVC	150.0	10	0.04	0.000	249
139	P-58	H-9	J-42	8.0	PVC	150.0	0	0.00	0.000	6
144	P-61	H-10	J-43	8.0	PVC	150.0	0	0.00	0.000	12
149	P-64	H-11	J-44	8.0	PVC	150.0	0	0.00	0.000	11
154	P-67	H-12	J-45	8.0	PVC	150.0	0	0.00	0.000	7
157	P-68	J-21	J-46	10.0	PVC	150.0	-38	0.15	0.000	292
159	P-70	H-13	J-46	8.0	PVC	150.0	0	0.00	0.000	5
163	P-73	J-39	J-12	10.0	PVC	150.0	100	0.41	0.000	259
165	P-74	J-33	J-48	10.0	PVC	150.0	17	0.07	0.000	726
166	P-75	J-48	J-15	10.0	PVC	150.0	-29	0.12	0.000	125
167	P-76	J-16	J-48	10.0	PVC	150.0	-46	0.19	0.000	384
168	P-77	J-20	J-43	8.0	PVC	150.0	10	0.06	0.000	365
169	P-78	J-43	J-32	8.0	PVC	150.0	10	0.06	0.000	225
170	P-79	J-21	J-44	8.0	PVC	150.0	25	0.16	0.000	582
172	P-80	J-44	J-45	8.0	PVC	150.0	-4	0.03	0.000	663
174	P-81	J-35	J-45	8.0	PVC	150.0	33	0.21	0.000	490
176	P-83	J-46	J-12	10.0	PVC	150.0	-38	0.15	0.000	310
178	P-84	J-7	J-51	10.0	PVC	150.0	-100	0.41	0.000	646
180	P-85	J-8	J-52	10.0	PVC	150.0	-376	1.53	0.001	634
182	P-86	J-51	J-55	10.0	PVC	150.0	-100	0.41	0.000	1,350
184	P-87	J-52	J-56	10.0	PVC	150.0	-376	1.53	0.001	1,350
188	P-88	J-7	PRV-1	10.0	PVC	150.0	100	0.41	0.000	24
189	P-89	PRV-1	J-39	10.0	PVC	150.0	100	0.41	0.000	735
191	P-90	J-8	PRV-2	10.0	PVC	150.0	376	1.53	0.001	83
192	P-91	PRV-2	J-33	10.0	PVC	150.0	376	1.53	0.001	83

195	P-92	J-56	J-55	12.0	PVC	150.0	-138	0.39	0.000	25
197	P-93	R-6	J-55	12.0	PVC	150.0	238	0.68	0.000	46
199	P-94	R-7	J-56	12.0	PVC	150.0	238	0.67	0.000	56
200	P-95	J-12	J-15	10.0	PVC	150.0	62	0.26	0.000	6

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PEAK HOUR DEMAND (JUNCTION TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
49	J-7	622.00	<None>	<Collection: 0 items>	0	1,019.86	172.1
51	J-8	622.00	<None>	<Collection: 0 items>	0	1,018.46	171.5
59	J-12	655.00	<None>	<Collection: 0 items>	0	850.10	84.4
65	J-15	654.80	<None>	<Collection: 0 items>	0	850.10	84.5
67	J-16	644.60	<None>	<Collection: 1 item>	29	850.09	88.9
69	J-17	638.00	<None>	<Collection: 1 item>	10	850.09	91.8
71	J-18	642.80	<None>	<Collection: 0 items>	0	850.09	89.7
73	J-19	640.00	<None>	<Collection: 1 item>	10	850.09	90.9
75	J-20	648.50	<None>	<Collection: 0 items>	0	850.09	87.2
77	J-21	650.70	<None>	<Collection: 0 items>	0	850.09	86.3
104	J-32	664.50	<None>	<Collection: 1 item>	10	850.09	80.3
106	J-33	627.50	<None>	<Collection: 0 items>	0	850.10	96.3
109	J-34	640.50	<None>	<Collection: 1 item>	359	849.84	90.6
112	J-35	656.00	<None>	<Collection: 1 item>	0	850.09	84.0
118	J-37	630.70	<None>	<Collection: 0 items>	0	850.05	94.9
125	J-39	647.10	<None>	<Collection: 0 items>	0	850.11	87.8
130	J-40	641.20	<None>	<Collection: 0 items>	0	850.09	90.4
136	J-42	642.40	<None>	<Collection: 0 items>	0	850.09	89.9
141	J-43	659.50	<None>	<Collection: 0 items>	0	850.09	82.5
146	J-44	651.30	<None>	<Collection: 1 item>	29	850.08	86.0
151	J-45	656.40	<None>	<Collection: 1 item>	29	850.08	83.8
156	J-46	652.80	<None>	<Collection: 1 item>	0	850.09	85.4
164	J-48	650.90	<None>	<Collection: 0 items>	0	850.10	86.2
177	J-51	597.00	<None>	<Collection: 0 items>	0	1,019.90	183.0
179	J-52	597.00	<None>	<Collection: 0 items>	0	1,018.95	182.6
193	J-55	599.50	<None>	<Collection: 0 items>	0	1,019.99	181.9
194	J-56	599.50	<None>	<Collection: 0 items>	0	1,019.99	181.9

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PEAK HOUR DEMAND (HYDRANT TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Hydrant Status	Emitter Coefficient (gpm/psi^n)	Lateral Length (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
111	H-4	Closed	0.000	20	656.00	0	850.09	84.0
117	H-5	Closed	0.000	20	631.00	0	850.05	94.8
124	H-7	Closed	0.000	20	647.00	0	850.11	87.9
129	H-8	Closed	0.000	20	642.20	0	850.09	89.9
135	H-9	Closed	0.000	20	643.00	0	850.09	89.6
140	H-10	Closed	0.000	20	660.50	0	850.09	82.0
145	H-11	Closed	0.000	20	651.00	0	850.08	86.1
150	H-12	Closed	0.000	20	656.40	0	850.08	83.8
155	H-13	Closed	0.000	20	653.00	0	850.09	85.3

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MAX DAY PLUS FIRE DEMANDS (JUNCTION TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
49	J-7	622.00	<None>	<Collection: 0 items>	0	844.20	96.1
51	J-8	622.00	<None>	<Collection: 0 items>	0	978.47	154.2
59	J-12	655.00	<None>	<Collection: 0 items>	0	844.20	81.9
65	J-15	654.80	<None>	<Collection: 0 items>	0	844.20	81.9
67	J-16	644.60	<None>	<Collection: 1 item>	0	844.51	86.5
69	J-17	638.00	<None>	<Collection: 1 item>	5	844.51	89.3
71	J-18	642.80	<None>	<Collection: 0 items>	0	844.47	87.3
73	J-19	640.00	<None>	<Collection: 1 item>	5	844.47	88.5
75	J-20	648.50	<None>	<Collection: 0 items>	0	844.28	84.7
77	J-21	650.70	<None>	<Collection: 0 items>	0	844.20	83.7
104	J-32	664.50	<None>	<Collection: 1 item>	5	844.28	77.8
106	J-33	627.50	<None>	<Collection: 0 items>	0	848.42	95.6
109	J-34	640.50	<None>	<Collection: 1 item>	173	847.96	89.8
112	J-35	656.00	<None>	<Collection: 1 item>	0	843.18	81.0
118	J-37	630.70	<None>	<Collection: 0 items>	0	848.01	94.0
125	J-39	647.10	<None>	<Collection: 0 items>	0	844.20	85.3
130	J-40	641.20	<None>	<Collection: 0 items>	0	844.51	88.0
136	J-42	642.40	<None>	<Collection: 0 items>	0	844.47	87.4
141	J-43	659.50	<None>	<Collection: 0 items>	0	844.28	79.9
146	J-44	651.30	<None>	<Collection: 1 item>	0	843.83	83.3
151	J-45	656.40	<None>	<Collection: 1 item>	21	843.42	80.9
156	J-46	652.80	<None>	<Collection: 1 item>	21	844.20	82.8
164	J-48	650.90	<None>	<Collection: 0 items>	0	844.62	83.8
177	J-51	597.00	<None>	<Collection: 0 items>	0	1,019.90	183.0
179	J-52	597.00	<None>	<Collection: 0 items>	0	991.70	170.8
193	J-55	599.50	<None>	<Collection: 0 items>	0	1,019.90	181.9
194	J-56	599.50	<None>	<Collection: 0 items>	0	1,019.85	181.9

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MAX DAY PLUS FIRE DEMANDS (PIPE TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)
72	P-21	58	J-16	J-18	10.0	PVC	150.0	False	0.000	213	0.87	0.000	True	163
76	P-23	145	J-18	J-20	8.0	PVC	150.0	False	0.000	208	1.33	0.001	True	255
78	P-24	42	J-20	J-21	8.0	PVC	150.0	False	0.000	203	1.29	0.001	True	110
114	P-45	219	J-35	J-15	10.0	PVC	150.0	False	0.000	-835	3.41	0.003	True	301
115	P-46	31	H-4	J-35	8.0	PVC	150.0	False	0.000	-1,000	6.38	0.014	True	25
119	P-47	18	J-33	J-37	10.0	PVC	150.0	False	0.000	1,173	4.79	0.006	True	64
120	P-48	105	J-37	J-34	10.0	PVC	150.0	False	0.000	173	0.70	0.000	True	296
121	P-49	19	H-5	J-37	8.0	PVC	150.0	False	0.000	-1,000	6.38	0.014	True	7
128	P-52	19	H-7	J-39	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	13
131	P-53	110	J-16	J-40	8.0	PVC	150.0	False	0.000	5	0.03	0.000	True	252
132	P-54	48	J-40	J-17	8.0	PVC	150.0	False	0.000	5	0.03	0.000	True	233
133	P-55	21	H-8	J-40	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	5
137	P-56	21	J-18	J-42	8.0	PVC	150.0	False	0.000	5	0.03	0.000	True	43
138	P-57	186	J-42	J-19	10.0	PVC	150.0	False	0.000	5	0.02	0.000	True	249
139	P-58	14	H-9	J-42	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	6
144	P-61	16	H-10	J-43	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	12
149	P-64	31	H-11	J-44	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	11
154	P-67	33	H-12	J-45	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	7
157	P-68	168	J-21	J-46	10.0	PVC	150.0	False	0.000	17	0.07	0.000	True	292
159	P-70	19	H-13	J-46	8.0	PVC	150.0	False	0.000	0	0.00	0.000	True	5
163	P-73	78	J-39	J-12	10.0	PVC	150.0	False	0.000	0	0.00	0.000	True	259
165	P-74	243	J-33	J-48	10.0	PVC	150.0	False	0.000	1,057	4.32	0.005	True	726
166	P-75	55	J-48	J-15	10.0	PVC	150.0	False	0.000	839	3.43	0.003	True	125
167	P-76	239	J-16	J-48	10.0	PVC	150.0	False	0.000	-217	0.89	0.000	True	384
168	P-77	191	J-20	J-43	8.0	PVC	150.0	False	0.000	5	0.03	0.000	True	365
169	P-78	85	J-43	J-32	8.0	PVC	150.0	False	0.000	5	0.03	0.000	True	225
170	P-79	333	J-21	J-44	8.0	PVC	150.0	False	0.000	186	1.19	0.001	True	582
172	P-80	394	J-44	J-45	8.0	PVC	150.0	False	0.000	186	1.19	0.001	True	663
174	P-81	283	J-35	J-45	8.0	PVC	150.0	False	0.000	-165	1.05	0.000	True	490
176	P-83	169	J-46	J-12	10.0	PVC	150.0	False	0.000	-4	0.02	0.000	True	310
178	P-84	183	J-7	J-51	10.0	PVC	150.0	False	0.000	(N/A)	(N/A)	(N/A)	True	646
180	P-85	183	J-8	J-52	10.0	PVC	150.0	False	0.000	-2,229	9.11	0.021	True	634
182	P-86	331	J-51	J-55	10.0	PVC	150.0	False	0.000	0	0.00	0.000	True	1,350
184	P-87	320	J-52	J-56	10.0	PVC	150.0	False	0.000	-2,229	9.11	0.021	True	1,350
188	P-88	8	J-7	PRV-1	10.0	PVC	150.0	False	0.000	0	0.00	0.000	True	24
189	P-89	256	PRV-1	J-39	10.0	PVC	150.0	False	0.000	0	0.00	0.000	True	735
191	P-90	16	J-8	PRV-2	10.0	PVC	150.0	False	0.000	2,229	9.11	0.021	True	83
192	P-91	16	PRV-2	J-33	10.0	PVC	150.0	False	0.000	2,229	9.11	0.021	True	83
195	P-92	15	J-56	J-55	12.0	PVC	150.0	False	0.000	-1,040	2.95	0.002	True	25
197	P-93	46	R-6	J-55	12.0	PVC	150.0	False	0.000	1,040	2.95	0.002	False	0
199	P-94	56	R-7	J-56	12.0	PVC	150.0	False	0.000	1,189	3.37	0.003	False	0
200	P-95	16	J-12	J-15	10.0	PVC	150.0	False	0.000	-4	0.02	0.000	True	6

MAX DAY PLUS FIRE DEMANDS (HYDRANT TABLE)
THE GLEN AT SCRIPPS RANCH CCRC

ID	Label	Hydrant Status	Include Lateral Loss?	Emitter Coefficient (gpm/psi^n)	Lateral Length (ft)	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
111	H-4	Closed	False	0.000	20	656.00	<None>	<Collection: 1 item>	1,000	842.83	80.8
117	H-5	Closed	False	0.000	20	631.00	<None>	<Collection: 1 item>	1,000	847.92	93.8
124	H-7	Closed	False	0.000	20	647.00	<None>	<Collection: 0 items>	0	844.20	85.3
129	H-8	Closed	False	0.000	20	642.20	<None>	<Collection: 0 items>	0	844.51	87.5
135	H-9	Closed	False	0.000	20	643.00	<None>	<Collection: 0 items>	0	844.47	87.2
140	H-10	Closed	False	0.000	20	660.50	<None>	<Collection: 0 items>	0	844.28	79.5
145	H-11	Closed	False	0.000	20	651.00	<None>	<Collection: 0 items>	0	843.83	83.4
150	H-12	Closed	False	0.000	20	656.40	<None>	<Collection: 0 items>	0	843.42	80.9
155	H-13	Closed	False	0.000	20	653.00	<None>	<Collection: 0 items>	0	844.20	82.7

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APPENDIX B

- University Village Thousand Oaks Water Consumption Table
- Calculations

CONTINUING LIFE COMMUNITIES - University Village Thousand Oaks
WATER CONSUMPTION

	UNIVERSITY VILLAGE THOUSAND OAKS			
	Number of occupied IL units			**367**
Product / Building Type	Period **3/31/08 to 2/26/09** Gallons	Monthly Avg. **(11 months)**	Daily Avg. **(332 days)**	**Gallons Per Unit Daily Average**
Independent Living Apartments	1,574,331	143,121	4,742	**23**
Garden Terrace Apartments	532,250	48,386	1,603	**47**
Villas	1,584,750	144,068	4,773	**92**
Commons Building	1,178,250	107,114	3,549	n/a
Recreation Building	653,250	59,386	1,968	n/a
Maintenance / Central Plant / Laundry	6,344,750	576,795	19,111	n/a
Guard Kiosk	131,250	11,932	395	n/a
Subtotals Independent Living	11,998,831	1,090,803	36,141	**98**

	UNIVERSITY VILLAGE THOUSAND OAKS			
Health Center (Skilled & Assisted Living)	1,000,400	90,945	3,013	n/a
Landscape Irrigation	15,335,820	1,394,165	46,192	n/a
Subtotal Health Center and Irrigation	16,336,220	1,485,111	49,205	

STAFF / Dwelling Units

UVTO FT = 111
PT = 84

OV = FT = 125
PT = 36

* UVTO = independent living community

367 occupied units

195 employees (FT + PT)

$$195 \cdot \frac{32\text{ hrs}}{\text{wk}} \cdot \frac{1\text{ wk}}{7\text{ day}} \cdot \frac{1\text{ day}}{24\text{ hrs}} \cdot \frac{1}{367\text{ DU}} = 0.1\ \frac{\text{employees}}{\text{DU}}$$

* OV = health center (skilled nurses)

48 skilled nurses

161 employees (FT + PT)

$$161 \cdot \frac{32\text{ hrs}}{\text{wk}} \cdot \frac{1\text{ wk}}{7\text{ days}} \cdot \frac{1\text{ day}}{24\text{ hrs}} \cdot \frac{1}{48\text{ DU}} = 0.64\ \frac{\text{emp}}{\text{DU}}$$

* OV = health center (assisted living)

49 assisted living

161 employees (FT + PT)

$$161 \cdot \frac{32\text{ hrs}}{\text{wk}} \cdot \frac{1\text{ wk}}{7\text{ d}} \cdot \frac{1\text{ d}}{24\text{ hr}} \cdot \frac{1}{49\text{ DU}} = 0.63\ \frac{\text{emp}}{\text{DU}}$$

STAEDTLER® No. 937 811E Engineer's Computation Pad

Estimated usage (based on Univ. Village Thousand Oaks)

Villas: $\frac{92 \text{ gal}}{\text{DU-day}} \cdot \frac{1 \text{ DU}}{1.3 \text{ per}} = 70.77 \frac{\text{gal}}{\text{per-day}}$

Garden Terrace: $\frac{47 \text{ gal}}{\text{DU-day}} \cdot \frac{1 \text{ DU}}{1.3 \text{ per}} = 36.15 \frac{\text{gal}}{\text{per-day}}$

Independent Living Apartments: $\frac{23 \text{ gal}}{\text{DU-day}} \cdot \frac{1 \text{ DU}}{1.40 \text{ per}} = 16.4 \frac{\text{gal}}{\text{per-day}}$

Skilled Nursing: $3013 \frac{\text{gal}}{\text{day}} \cdot \frac{1}{97 \text{ DU}} \cdot \frac{1 \text{ DU}}{1.64 \text{ per}} = 18.94 \frac{\text{gal}}{\text{per-day}}$

Assisted Living: $3013 \frac{\text{gal}}{\text{day}} \cdot \frac{1}{97 \text{ DU}} \cdot \frac{1 \text{ DU}}{1.63 \text{ per}} = 19.05 \frac{\text{gal}}{\text{per-day}}$

STAEDTLER® No. 937 811E Engineer's Computation Pad

APPENDIX C

- City of San Diego Facility Design Guidelines, Chapter 2
- 2007 California Fire Code – Fire-flow Requirements for Buildings
- Email Correspondence Regarding Fire Demand Reduction

Book 2

Facility Design Guidelines

Chapter 2
Water Demands and Service Criteria

City of San Diego Water Department
Capital Improvements Program

Chapter 2
WATER DEMANDS AND SERVICE CRITERIA

2.1 General

This chapter outlines planning procedures to estimate water demands and fire flows. Water system service requirements are also defined in terms of water pressure and reservoir storage.

2.2 Service Area

The DESIGN CONSULTANT defines the project's service area and identifies the pressure zones in which it is located. The Senior Civil Engineer in charge of either Water Planning and Project Development, or Planning and Development Review Water Review Section, approves the service area boundaries.

2.3 Land Use and Residential Population

The DESIGN CONSULTANT develops present and future land use maps for the service area to define the following land use categories: residential (by zone in accordance with Table 2-1), central business district, commercial and institutional, parks, hospitals, hotels, industrial, office, and schools.

The DESIGN CONSULTANT estimates the residential population in the service area based on present and future allowable land use. Unless more accurate population density estimates are available, the residential population in the service area is estimated based on the figures presented in Table 2-1.

Table 2-1
Residential Population Density

Zone	Dwelling Unit Density (dwelling unit/net acre)	Unit Density (persons/dwelling unit)	Population Density (persons/net acre)
A-1-10	0.1	3.5	0.4
A-1-5	0.2	3.5	0.7
A-1-1	1	3.5	3.5
R-1-40	1	3.5	3.5
R-1-20	2	3.5	7.0
R-1-10	4	3.5	14
R-1-5	9	3.5	32
R-2	14	3.2	45
R-2A	29	3.0	87
R-3	43	2.6	112
R-3A	73	2.2	161
R-4	109	1.8	196
R-4C	218	1.5	327

Dwelling unit density in Table 2-1 is based on net area. The net area is measured in acres, and is 80% of the gross area for each residential zone.

2.4 Average Annual Water Demands

For most projects, average annual water demands are determined based on the unit water demand criteria presented in Table 2-2.

Table 2-2
Unit Water Demands

Land Use Category	Unit Water Demand
Residential	150 gallons/person-day
Central Business District	6000 gallons/net acre-day
Commercial and Institutional	5000 gallons/net acre-day
Fully Landscaped Park	4000 gallons/net acre-day
Hospitals	22500 gallons/net acre-day
Hotels	6555 gallons/net acre-day
Industrial	6250 gallons/net acre-day
Office	5730 gallons/net acre-day
Schools	4680 gallons/net acre-day

Average annual water demands are calculated as the sum of: (1) the residential water demand, and (2) other water demands for each land use category as follows:

Residential Water Demand (gallons/day) = Residential Population x 150 gallons/person-day

Other Water Demand (gallons/day) = Land Use Area by Category (net acres) x Unit Water Demand for Each Land Use Category (gallons/net acre-day)

Average Annual Water Demand (gallons/day) = Residential Water Demand + Other Water Demands

On some projects, particularly large residential developments, using the unit water demands in Table 2-2 may generate unrealistically high estimates of water requirements. For these large projects, the DESIGN CONSULTANT or developer may request that the CIP Project Manager consider an alternative approach, making use of the City's water demand distribution data developed for macroscale planning purposes. Similarly, the CIP Project Manager may also consider alternative unit water demand estimates for specific land use types where such estimates are based on detailed demand evaluations.

2.5 Peak Water Demands

Unless the project involves a large development that calls for an alternative approach, peak hour and maximum day water demands are estimated using the peaking factors presented in Figures 2-1 and 2-2. These peaking factors correspond to the zones identified in Figure 2-3.

FIGURE 2-1
PEAK HOUR DEMAND FACTOR

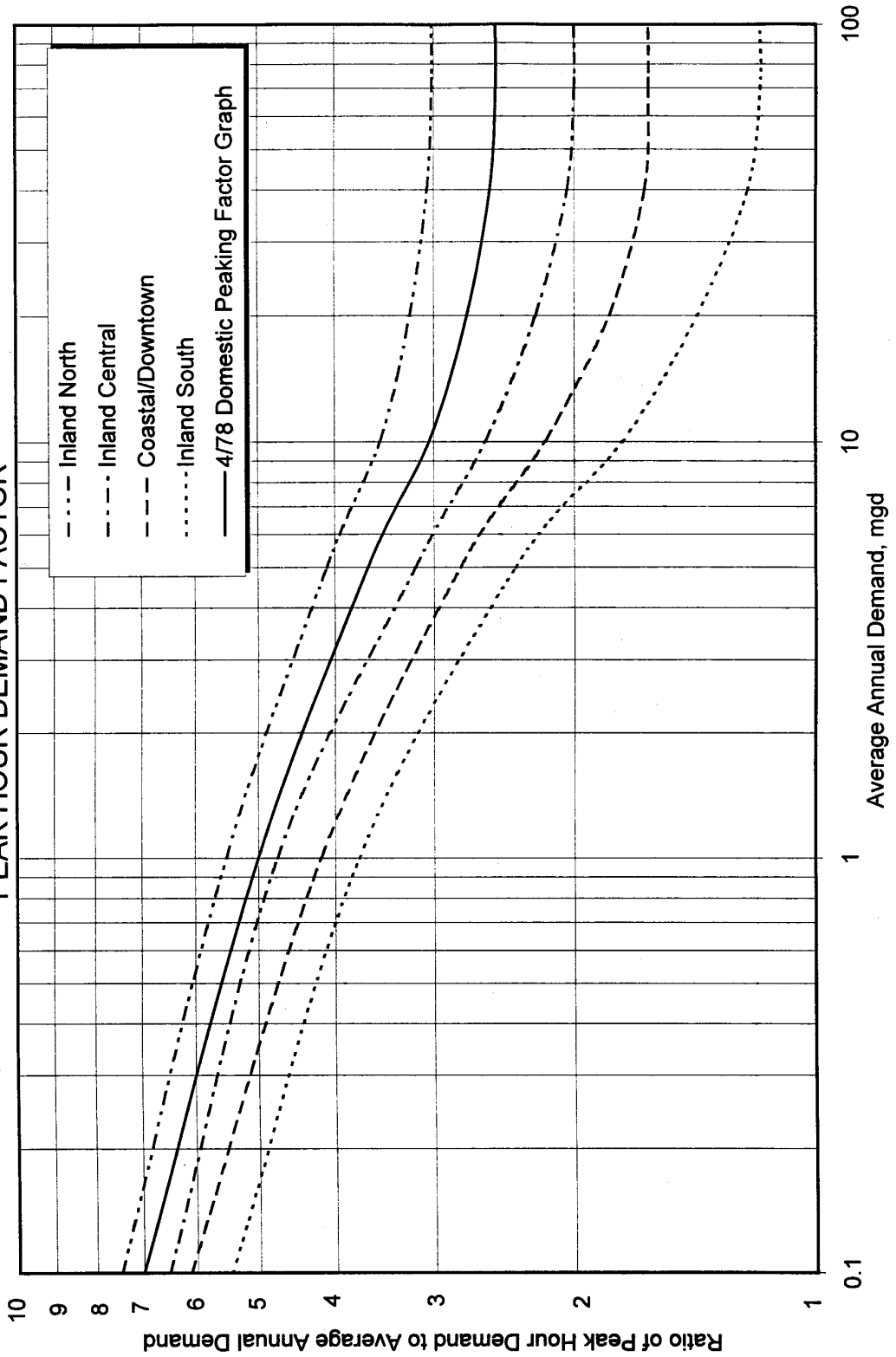
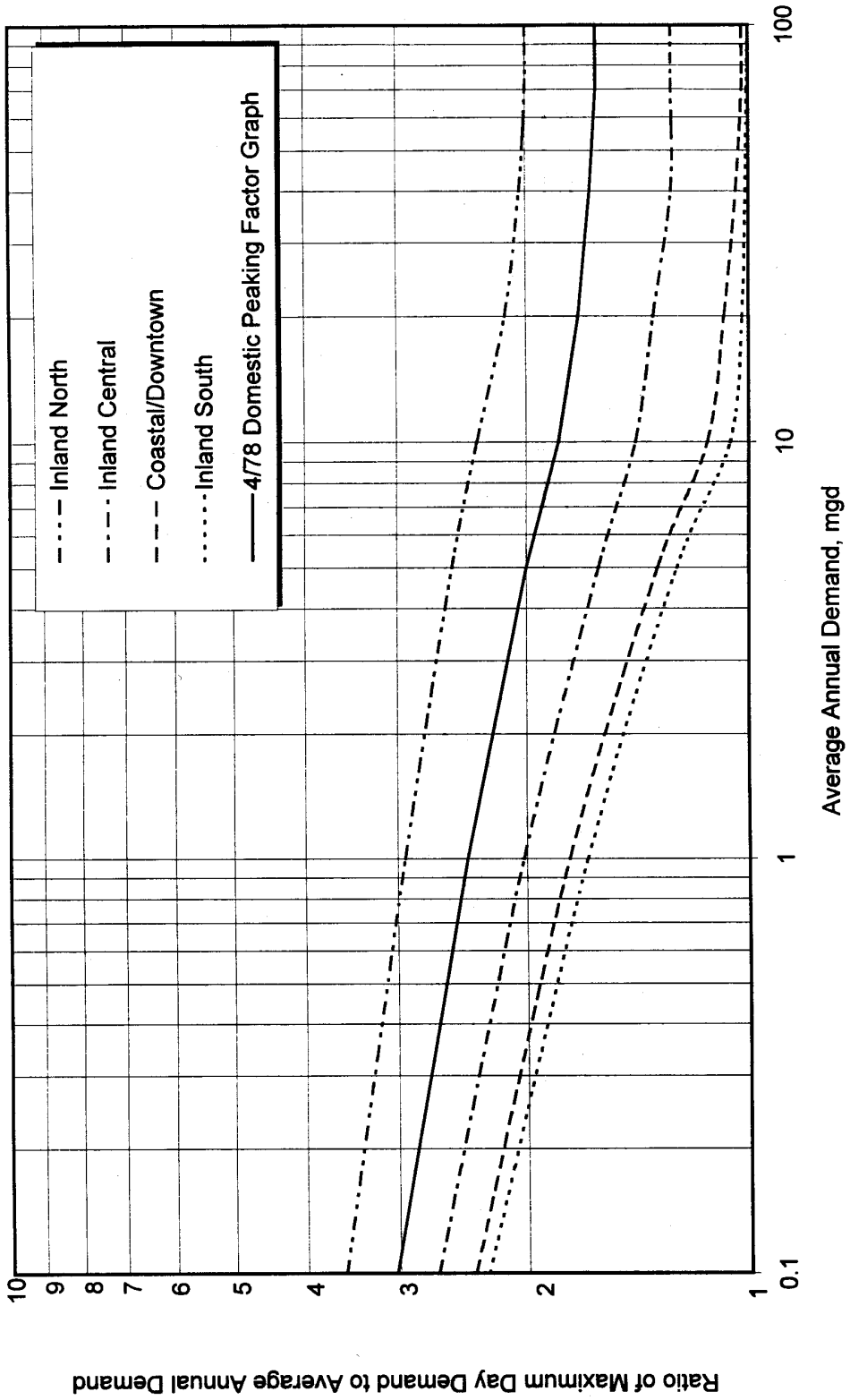
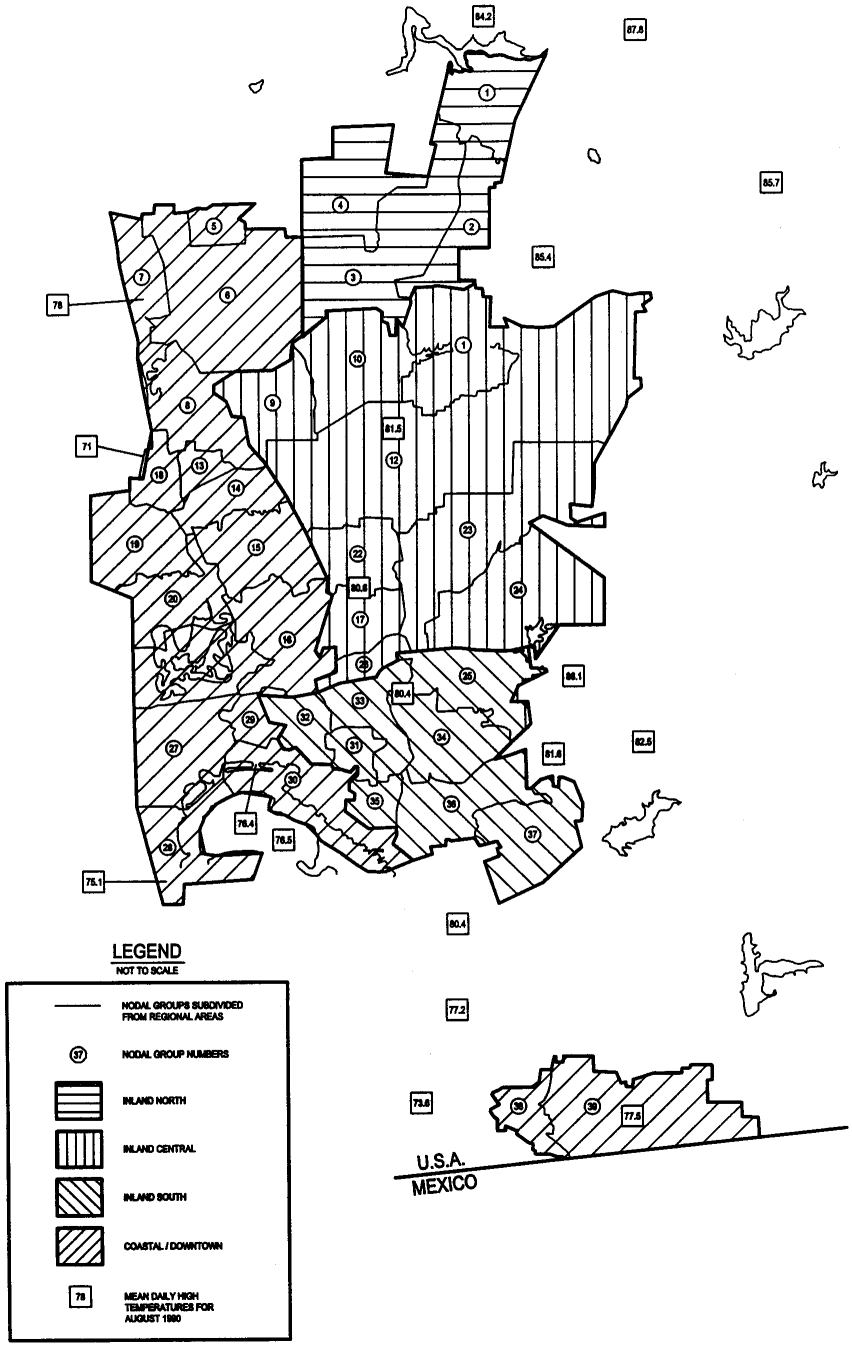


FIGURE 2-2
MAXIMUM DAY DEMAND FACTOR



PEAKING FACTOR ZONES
(BOUNDARIES BASED ON LAND USE GROUPINGS)

FIGURE 2-3



July 1999

Peak water demands are estimated as follows:

Peak Hour Demand = Average Annual Water Demand * Peak Hour Demand Ratio

Maximum Day Demand = Average Annual Water Demand * Maximum Day Demand Ratio

2.6 Fire Demands

The DESIGN CONSULTANT estimates fire demands flows by using the *Fire Suppression Rating Schedule*, Edition 6-80, Section 1 (Public Fire Suppression), published by the Insurance Services Office.

The fire flow duration for planning purposes is at least five hours. In general, minimum required fire demands for design are shown in Table 2-3.

Table 2-3
Fire Demands for Design Purposes

Development Type	Fire Demand (gpm)
Single family residential	2,000
Duplexes	2,500
Condominiums and apartments	3,000
Commercial	4,000
Industrial	6,000

Should application of the ISO methodology result in figures lower than those shown in Table 2-3, the CIP Project Manager may approve the ISO figures on a case-by-case basis following submittal of supporting calculations.

The required fire demand must be supplied from at least two fire hydrants within a maximum radius of 750 feet from the fire.

2.7 Pressure Criteria

2.7.1 Design Pressures

Water systems must be designed to provide the minimum residual pressures given:

(1) maximum day demands plus fire demand conditions, or
(2) peak hour demand conditions.

In analyzing the supply to a pressure zone, the minimum hydraulic grade line elevation available from the water source is used, a level that typically occurs during dry weather conditions. The maximum static pressure in gravity systems is determined from reservoir overflow elevations and/or the discharge control setting on pressure reducing valves, whichever is greater. The

maximum static pressure in pumped systems is determined from reservoir overflow elevations or pump shutoff levels, whichever is greater.

2.7.2 Operating Pressures

The basic pressure criteria for water system design are shown in Figure 2-4. Every water main in each pressure zone must be capable of supplying a minimum static pressure of 65 psi with no demand on the system. Operating pressures under the maximum day demand condition in the system (remote from a fire) or under peak hour demand conditions must fall no more than 25 psi below the static pressure with no demand on the system, and residual water main pressure must be at least 40 psi. Operating pressures are determined in the distribution system pipelines, excluding losses through service connections and building plumbing, and are measured relative to adjacent building pad elevations.

When analyzing a system with one source of supply (either a reservoir or a pipeline) out of service, pressures may fall more than 25 psi below static pressure with no demand on the system, but in no event may the pressure fall more than 40 psi.

2.7.3 Pressure Requirements During Fires

For the simulation of fire conditions, a minimum operating pressure of 20 psi is required in the mains (measured relative to the building pad elevation) in the vicinity of the fire, and a drop in pressure of no more than 25 psi below static is desirable for the remainder of the system. The residual pressure is determined given the fire demand concentrated at a hydrant within a radius of 750 feet of the fire, and with simultaneous water consumption occurring at the maximum day rate.

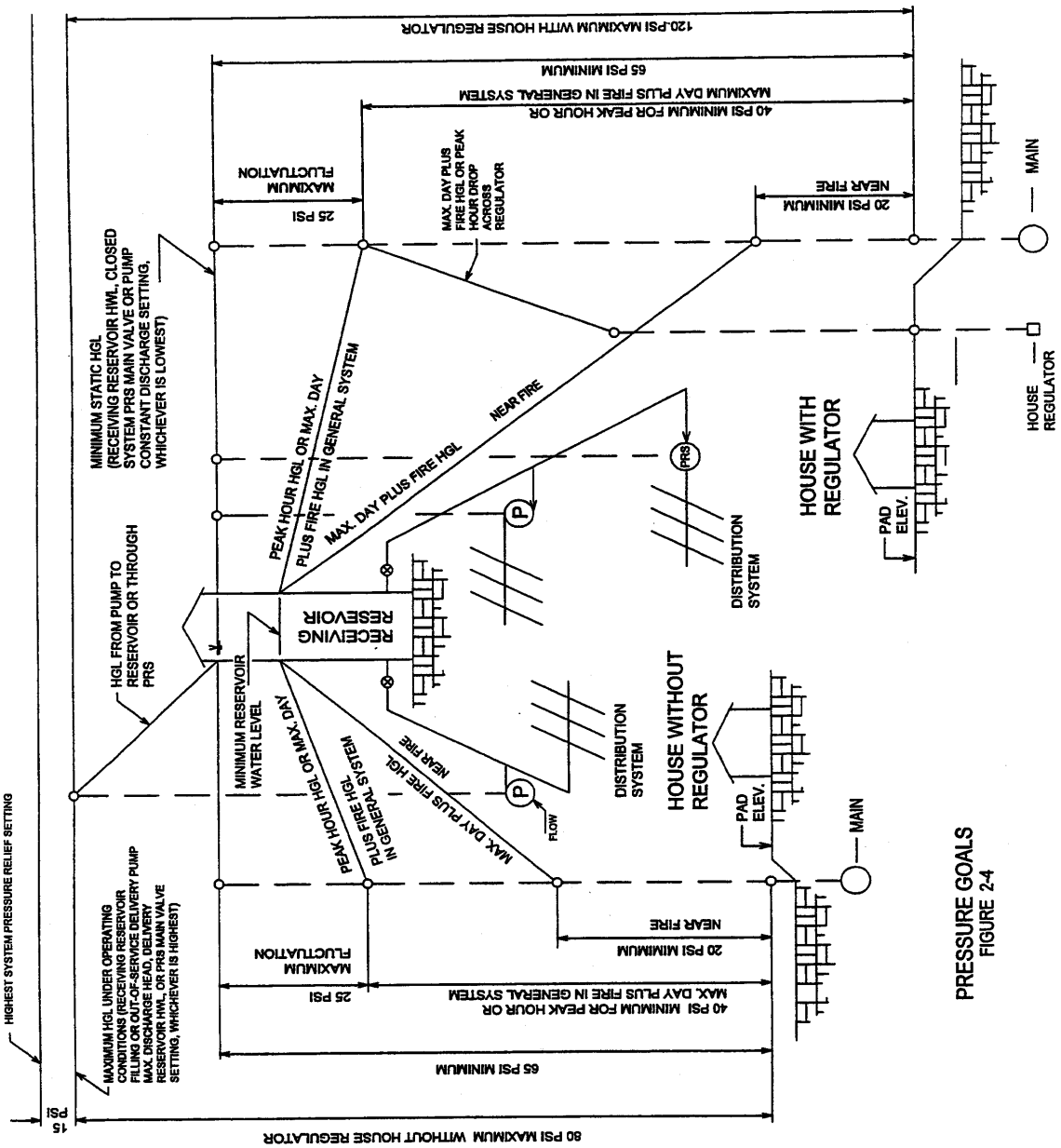
For water systems with available storage, the residual pressures in the distribution system during a fire are maintained given the following conditions:

- The water level in the storage facility at the time of the fire is at or near the minimum level that typically occurs with normal diurnal demands, and
- The prescribed 5-hour fire duration is coincident with the 5-hour period of highest water demands.

2.8 System Reliability

Water systems must be designed to meet the pressure criteria with one critical source out of service. Water mains must be designed so that no more than one, average-sized city block (approximately 30 homes) is out of service at any time, and no more than two fire hydrants (excluding fire services) are on a dead end or are out of service at any time. These provisions do not apply under earthquake conditions.

Water mains serving more than two hydrants or more than 30 homes must be looped, fed from two sources, or provided with a reservoir of sufficient capacity to supply the emergency needs (contingency and fire storage) as described below in subsection 2.9.



PRESSURE GOALS
FIGURE 2-4

2.9 Storage Criteria for Water Systems

There are three basic types of water storage in the City's system: regulating reservoirs, forebays and clearwells. Regulating reservoirs balance supply and demand for a pressure zone and/or service area. Pressure zones are normally designated by the overflow elevation of the regulating reservoirs. Forebays are used to balance supply and pumping demand to provide a stable suction head for a booster pump station. Typically, a clearwell is a regulating reservoir to store filtered water in a water treatment plant. The shape and material of the storage vessel (elevated tank, standpipe, circular, rectangular or trapezoidal ground level steel, prestressed or reinforced concrete reservoirs) is generally determined by the amount of water storage required, topography of the available site and the economy of construction.

Definitions

- Ultimate Maximum Day Demand or Maximum Day Demand (UMDD): It is the forecasted maximum day demand (ultimate average day demand multiplied by a peaking factor) for a projected future planning date. This date is selected during the planning phase of the project. The Maximum Day Demand Flow Rate is the uniform flow rate delivering water in a 24-hour period to meet Maximum Day Demand.

- Peak Hour Demand is the forecasted UMDD multiplied by a peaking factor for determining the projected highest hourly consumption during one year.

- Service area includes all pressure zones supplied by a water facility including:

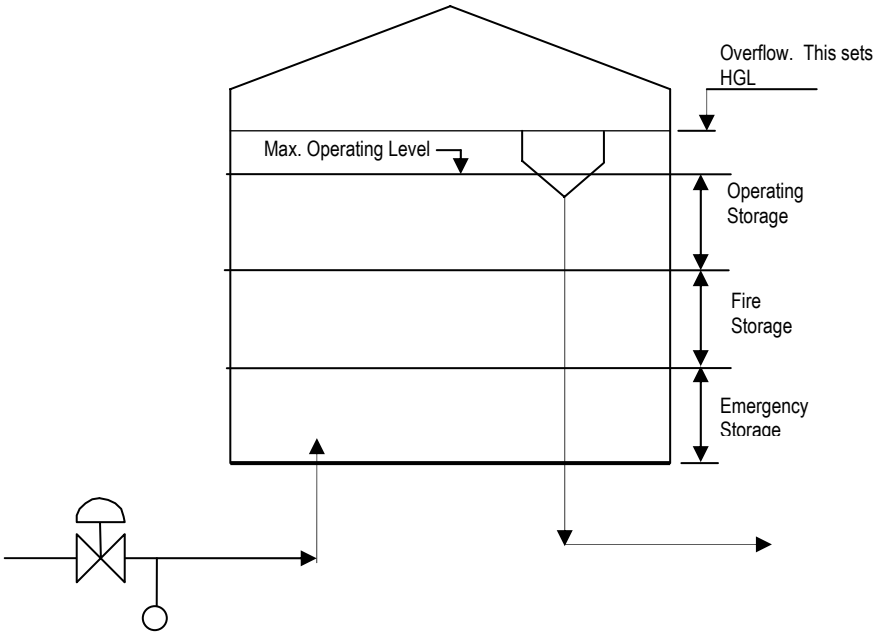
  a) Zone(s) served directly without the need for pumping or pressure reduction,
  b) Pumped zone(s) supplied through pumping station(s), and
  c) Pressure reduced zone(s) downstream of a pressure reducing station(s).

- WTP – Water Treatment Plant

2.9.1 Regulating Reservoirs

The required storage volume within a pressure zone or service area is the sum of three elements: operating storage, fire storage and emergency storage, as indicated in the sketch below.

A. Operating Storage



1) Definition. Operating storage is defined as the volume of storage necessary to allow a reservoir's sources of supply to operate at a uniform rate throughout the day while meeting variable water demand. In some cases, operating storage is used to permit reducing or stopping of supply during peak hour water demand conditions or stopping of pumping operations during hours of peak energy demand. Operating storage may also be defined as the amount of storage necessary to supply Peak Hour Demand with a water supply having a uniform Maximum Day Demand Flow Rate. Operating storage must fluctuate daily in all water storage facilities, like standpipes and elevated tanks supplied by pumps and in ground level reservoirs supplied by gravity pipelines.

In order to optimize the use of transmission facilities and to improve water pressure during peak water demand conditions, pump or gravity inflow must be controlled to achieve top operating levels at 5:00 AM each morning.

2) Calculation Procedure. Operating storage is calculated as 30 % of the ultimate maximum day demand in the service area (one or more pressure zones). The source(s) of supply must provide for maximum day demand.

To allow the reduction or stopping of supply during peak hour water demand conditions or stopping of pumping operations during hours of peak power demand, requires additional operating storage volume. Assuming that the amount of operating storage was already determined to balance a uniform daily supply with continuously variable demand, the additional operating storage for reducing or stopping of supply due to peak hour water demand or peak power demand management equals the rate of supply reduction times the duration of supply reduction.

If more than one reservoir is planned for the service area, operational storage can be divided between reservoirs, but only when water system modeling shows that minimum pressure requirements are met during peak hour demand.

For existing and substantially developed service areas, the amount of operational storage may be determined by flow measurement. This flow measurement, based on supply and demand curves, must be adjusted for future growth and reasonably anticipated climatic extremes.

The amount of operating storage may be reduced by water supply capacity available in excess of maximum day demand flow rate.

3) Example. Assume the expected ultimate maximum day demand in a pressure zone is 6,000 gal/min, then the required operating storage is:

Operating storage = ((6,000 gal/min x 1440)/1,000,000) x 0.3 = 2.6 mg

Continuing with the example above, let us assume now that the pumps are shut off for two hours for peak power demand management, the supply is thus reduced by 6,000 gal/min for 2 hours. The additional operating storage required is then:

Power management storage = ((6,000 gal/min x 60) x 2)/1,000,000 = .72 mg
Use 0.8 mg for power management storage.

Total operating storage: 2.6 mg + 0.8 mg = 3.4 mg

B. Fire Storage

1) Definition. Fire storage is the minimum amount of water required to be stored for firefighting purposes. Minimum fire flow flows and their duration are established by the City Fire Marshall based on Insurance Services Offices (ISO) guidelines.

2) Calculation Procedure. Fire storage is calculated by multiplying the maximum fire demand expected in the service area by its duration, as stated in Section 2.6. If more than one tank is planned for a service area, fire storage can be divided between tanks, but only when water system modeling shows that minimum fire flow and pressure requirements are met.

The amount of fire storage may be reduced by water supply capacity available in excess of maximum day demand flow rate with operating storage, or in excess of peak demand flow rate without operating storage.

3) Example. Continuing with the example above, let us assume now that the pressure zone is classified as commercial with minimum fire flow of 4,000 gal/min for 5 hours. (For service areas with UMDD of 100 MGD and more, consider that 2 fires are burning concurrently.) The minimum fire storage is:

Fire storage = ((4,000 gal/min x 60) x 5)/1,000,000 = 1.20 mg

C. Emergency Storage

1) Definition. Emergency storage is the amount of water that needs to be stored to satisfy demand when any single component of the system (power, pump, supply pipe, etc.) is out of service.

2) Calculation Procedure. Maximum emergency storage is calculated as 12 hours times the ultimate maximum day demand, in gallons per minute. If anticipated total service outage exceeds 12 hours, then a cost/benefit analysis is required to determine the most cost effective solution to meet reliability and water quality objectives.

The amount of emergency storage may be reduced by water supply capacity available after a single system component is out of service, or by the reduced time it takes to return to full service based on reasonable estimate of time for restoration of system capacity, as determined by Water Operations Division.

If more than one reservoir is planned, emergency storage can be divided between the reservoirs, but only when water system modeling shows that minimum flow and pressure requirements are met during peak hour and fire demand conditions.

3) Example. The minimum amount of emergency storage based on the examples above is:

Emergency storage = ((6,000 gal/min x 60) x 12)/1,000,000 = 4.4 mg

If, for instance, there are two pump stations with a 3,000 gal/min capacity each supplying the same pressure zone and one pump station is out of service, the emergency storage is reduced to:

((3,000 x60) x 12)/1,000,000 = 2.2 mg

D. Total Storage. For the examples listed above, the total storage would be the sum of operating, fire and emergency storages, or 3.4+1.20+4.4 = **9.0 million gallons**.

> **Note:** Water storage volume located in pumped zones of a service area may not be used to reduce the calculated "Total Storage" for the gravity fed portions of a service area.

2.9.2Forebays

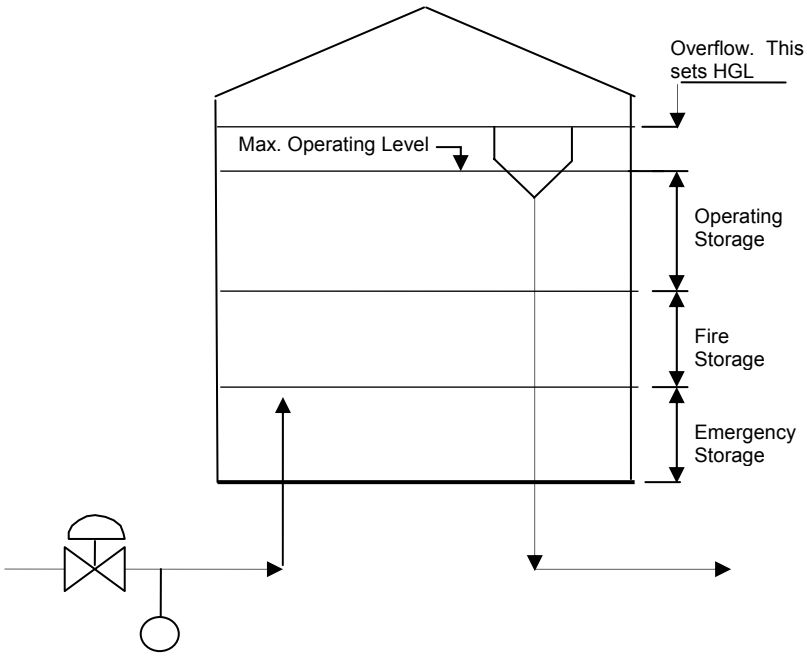
Forebays are usually small tanks located on the suction side of a booster pump station. They balance available supply with pumping demand and provide a stable suction head to the pump station. If a pump station is adjacent to a regulating reservoir; the reservoir acts as a forebay also. Due to the nature of its function, forebays have only one element – operating storage.

The required volume can be calculated as shown in section 2.9.1A.2 above.

2.9.3Clearwells

A clearwell is a regulating reservoir to store filtered water near a water treatment plant.

A. Operating Storage



1) Definition. Operating storage is defined as the volume of storage necessary to allow a WTP to operate at a uniform rate throughout the day while meeting variable water demand. Operating storage must fluctuate daily in all water storage facilities. In general, the operating storage volume is divided between the potable water reservoirs within the treatment plant service area. The clearwell's share of the operating storage (30% UMDD) will depend on the location and capacity of the other reservoirs within the WTP service area.

2) Calculation Procedure. The required volume can be calculated as shown in section 2.9.1.A.2 above.

B. Fire Storage

1) Definition. Fire storage is the minimum amount of water required to be stored for firefighting purposes. Minimum fire flow flows and their duration are established by the City Fire Marshall based on Insurance Services Office (ISO) guidelines. Fire storage requirements for clearwells are the same as for any reservoir within the distribution system.

2) Calculation Procedure. The required volume can be calculated as shown in section 2.9.1.A.2 above.

C. Emergency Storage/Shutdown Storage

1) Definition. Emergency storage is the amount of water that needs to be stored to satisfy demand when any single component of the WTP (sedimentation basin, power, pump, supply pipe, etc.) is out of service.

It is generally advisable that the raw water supply and treatment facilities are designed with the same reliability and redundancy as the water distribution system for delivery of uninterrupted water supply. That is, with any single component out of service, one at a time. This will allow routine facility maintenance to proceed anytime or at the minimum during the winter months without impacting the capacity of the system to meet treated water demand.

Shutdowns are not unique to water treatment plants, they are just more routine and have more significant impact due to the complexity and size of facilities. Shutdowns and emergencies

have similar impacts with the difference that shutdowns are prescheduled and can be anticipated. Therefore, a thorough analysis of the raw water supply and treatment facilities is required to determine the critical facility components resulting in the longest or most significant reduction of treatment capacity when they are out of service, due to either routine maintenance or emergency failure.

2) Calculation Procedure. After determination of the critical maintenance shutdown and emergency repair vulnerability of the water treatment plant, the required volume can be calculated as shown in Section 2.9.1.C.2. above.

It is to be noted that operating and emergency storage can be used during WTP shutdowns. As such, additional shutdown storage capacity is only required if shutdown demand is greater than the sum of operating and emergency storage.

D. Total Storage. For examples listed in section 2.9.1 above, the total clearwell storage would be the sum of operating, fire and emergency storages, or 2.6+1.20+4.4 = **8.2 million gallons** for a WTP with 8.7 MGD capacity and without any service area distribution system storage. (Assumption WTP capacity = UMDD).

> **Note:** Water storage volume located in pumped zones of a service area may not be used to reduce the calculated "Total Storage" for the gravity fed portions of a service area.

E. Minimum and Maximum Storage

As a minimum, the clearwell storage should not be less than 25% of the WTP capacity, and not more than the UMDD of its service area for plants 10 MGD and larger.

It is generally more economical to build a reliable WTP to meet UMDD than to provide additional water storage for emergencies and to meet UMDD. Therefore, vulnerability risk analysis and cost/benefit analysis are recommended before deviating from the guidelines outlined above.

APPENDIX B

FIRE-FLOW REQUIREMENTS FOR BUILDINGS

SECTION B101
GENERAL

B101.1 Scope. The procedure for determining fire-flow requirements for buildings or portions of buildings hereafter constructed shall be in accordance with this appendix. This appendix does not apply to structures other than buildings.

SECTION B102
DEFINITIONS

B102.1 Definitions. For the purpose of this appendix, certain terms are defined as follows:

FIRE-FLOW. The flow rate of a water supply, measured at 20 pounds per square inch (psi) (138 kPa) residual pressure, that is available for fire fighting.

FIRE-FLOW CALCULATION AREA. The floor area, in square feet (m^2), used to determine the required fire flow.

SECTION B103
MODIFICATIONS

B103.1 Decreases. The fire chief is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

B103.2 Increases. The fire chief is authorized to increase the fire-flow requirements where conditions indicate an unusual susceptibility to group fires or conflagrations. An increase shall not be more than twice that required for the building under consideration.

B103.3 Areas without water supply systems. For information regarding water supplies for fire-fighting purposes in rural and suburban areas in which adequate and reliable water supply systems do not exist, the fire code official is authorized to utilize NFPA 1142 or the *International Wildland-Urban Interface Code.*

SECTION B104
FIRE-FLOW CALCULATION AREA

B104.1 General. The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in Section B104.3.

B104.2 Area separation. Portions of buildings which are separated by fire walls without openings, constructed in accordance with the *California Building Code,* are allowed to be considered as separate fire-flow calculation areas.

B104.3 Type IA and Type IB construction. The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors.

> **Exception:** Fire-flow calculation area for open parking garages shall be determined by the area of the largest floor.

SECTION B105
FIRE-FLOW REQUIREMENTS FOR BUILDINGS

B105.1 One- and two-family dwellings. The minimum fire-flow requirements for one- and two-family dwellings having a fire-flow calculation area which does not exceed 3,600 square feet (344.5 m^2) shall be 1,000 gallons per minute (3785.4 L/min). Fire-flow and flow duration for dwellings having a fire-flow calculation area in excess of 3,600 square feet (344.5 m^2) shall not be less than that specified in Table B105.1.

> **Exception:** A reduction in required fire flow of 50 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system.

B105.2 Buildings other than one- and two-family dwellings. The minimum fire-flow and flow duration for buildings other than one- and two-family dwellings shall be as specified in Table B105.1.

> **Exception:** A reduction in required fire-flow of up to 75 percent, as approved, is allowed when the building is provided with an approved automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow shall not be less than 1,500 gallons per minute (5678 L/min) for the prescribed duration as specified in Table B105.1.

SECTION B106
REFERENCED STANDARDS

	CBC-07	California Building Code	B104.2, Table B105.1
ICC	IWUIC-06	International Wildland-Urban Interface Code	B103.3
NFPA	1142-01	Standard on Water Supplies for Suburban and Rural Fire Fighting	B103.3

TABLE B105.1
MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute)[c]	FLOW DURATION (hours)
Type IA and IB[b]	Type IIA and IIIA[b]	Type IV and V-A[b]	Type IIB and IIIB[b]	Type V-B[b]		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater	85,101-Greater	8,000	

For SI: 1 square foot = 0.0929 m^2, 1 gallon per minute = 3.785 L/m, 1 pound per square inch = 6.895 kPa.

a. The minimum required fire flow shall be allowed to be reduced by 25 percent for Group R.

b. Types of construction are based on the *California Building Code*.

c. Measured at 20 psi.

Tadd Dolfo

To: Brad Sager
Subject: RE: CLC Water Study

From: Eisenstein, Kelly [mailto:KEisenstein@sandiego.gov]
Sent: Wednesday, August 14, 2013 12:55 PM
To: Todd Letterman
Subject: RE: You

Todd,

Ron is here but he has been pretty busy. I did discuss this with him and he is fine with the 50% reduction for sprinkler protected buildings.

Kelly

From: Todd Letterman [mailto:tletterman@haifire.com]
Sent: Wednesday, August 14, 2013 11:50 AM
To: Eisenstein, Kelly
Subject: RE: You

Hey Kelley, Ron has never gotten back to me on this e-mail, is he on vacation?

TODD LETTERMAN | SENIOR FIRE PROTECTION CONSULTANT

HUGHES ASSOCIATES

HUGHES ASSOCIATES | FIRE PROTECTION & CODE CONSULTING
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P 619.344.0310 | M 951.691.7993 |
tletterman@haifire.com | www.haifire.com

From: Eisenstein, Kelly [mailto:KEisenstein@sandiego.gov]
Sent: Thursday, August 08, 2013 8:27 AM
To: Todd Letterman
Subject: RE: You

Todd,

Ron was copied on the email I just sent to you. So you should have his email. The attached letter looks like it is from the capital improvements program for the City and I don't think is applicable to projects other than capital improvement projects.

Kelly

From: Todd Letterman [mailto:tletterman@haifire.com]
Sent: Thursday, August 08, 2013 8:24 AM
To: Eisenstein, Kelly
Subject: RE: You

Do you have Ron's email or can you forward this email to him. I have received this attached letter and I'm not sure what it is for if appendix B is being allowed.

Hi project will handle what is required for construction type and size with appendix B with the sprinkler allowance, it won't handle what this letter is requiring.

Thanks

TODD LETTERMAN | SENIOR FIRE PROTECTION CONSULTANT

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tletterman@haifire.com | www.haifire.com

From: Eisenstein, Kelly [mailto:KEisenstein@sandiego.gov]
Sent: Thursday, August 08, 2013 8:16 AM
To: Todd Letterman
Cc: Carter, Ronald
Subject: RE: You

Yes, sorry I must've missed your email previously. The city of SD has not amended the Appendix B. This is a question for a fire plan reviewer, Ron Carter. I believe that we have allowed a 50% reduction in the fire flow for sprinklered buildings but you should check with Ron Carter for verification.

Ron, the question is do we adopt Appendix "B" of the CFC and if so do we accept the reduction stipulated by B 105.2 for buildings other than one and two family dwellings?

Thanks!
Kelly

From: Todd Letterman [mailto:tletterman@haifire.com]
Sent: Thursday, August 08, 2013 8:09 AM
To: Eisenstein, Kelly
Subject: You
Importance: High

Kelly are you answering email?

TODD LETTERMAN | SENIOR FIRE PROTECTION CONSULTANT

HUGHES ASSOCIATES

SEWER STUDY

THE GLEN AT SCRIPPS RANCH CCRC
10455 POMERADO ROAD
SAN DIEGO, CA 92131

CONDITIONAL USE PERMIT AND
SITE DEVELOPMENT PERMIT

AUGUST 31, 2012
JULY 2, 2013
REVISED MARCH 12, 2014

Prepared For:

CONTINUING LIFE COMMUNITIES
1940 Levante Street
Carlsbad, California 92009

Prepared By:

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Voice (858) 751-0633
(JOB NO. 1049.1)

3/12/14

Bradley D. Sager Date
PE
RCE 54564 Expires: 12/31/2015

Prepared by: RBP/SK/MV
Reviewed by: CJE/BDS

TABLE OF CONTENTS

1. INTRODUCTION 1

2. PROJECT DESCRIPTION 1

2.1 Existing Project/Condition 2

2.2 Proposed Project/Condition 2

3. METHODOLOGY 3

4. ANALYSIS AND RESULTS 4

4.1 Design Criteria 4

4.2 Sample Calculations 4

4.2.1 Demand / Flow Calculations 4

4.2.2 Hydraulic Calculations 4

4.2.3 Existing Sanitary Sewer System 5

4.2.4 Proposed Sanitary Sewer Improvements 5

5. SEWER EASEMENT AND ACCESS 5

6. HORIZONTAL ALIGNMENT 5

7. CONCLUSION 6

LIST OF FIGURES

Figure 1: Project Location Map 1

Figure 2: Vicinity Map 2

Figure 3 CITY OF SAN DIEGO PEAKING FACTORS FOR SEWER FLOWS **7**

Figure 4 HANDBOOK OF HYDRAULICS, BRATER AND KING **8**

LIST OF TABLES

TABLE 1 SUMMARY OF DESIGN FLOWS

TABLE 2 SEWER HYDRAULIC CALCULATIONS

LIST OF EXHIBITS

EXHIBIT A EXISTING SEWER IMPROVEMENTS

EXHIBIT B PROPOSED SEWER IMPROVEMENTS

LIST OF APPENDICES

APPENDIX A EXISTING SEWER REPORTS FOR FACILITIES ADJACENT TO THE CLC – SCRIPPS RANCH PROJECT

1. INTRODUCTION

This Sanitary Sewer Study has been prepared to support the Conditional Use Permit and Site Development Permit application associated with Continuing Life Communities for The Glen at Scripps Ranch CCRC project located in the Scripps Ranch Community in the City of San Diego. The purpose of this sewer study is to analyze the proposed private sewer system(s), demonstrate that it meets the City of San Diego and California Uniform Plumbing Code standards and determine if the existing sewer system has capacity to support the proposed project. The design of the proposed sewer facilities will be in accordance with the City of San Diego Standards. The size of the proposed sanitary sewer mains is based on the City of San Diego's Sewer Design Guide dated October 2004. The proposed private sewer system will serve a variety of building types.

2. PROJECT DESCRIPTION

The proposed project site is located in the Scripps Ranch Community east of Interstate 15 south of Pomerado Road, and west of the Chabad Hebrew Academy on the easterly portion of the existing Alliant University Campus. The Master Plan for the Alliant University Campus was included in the previously approved CUP 133PC 1967 and 1972. The location of the Alliant University Campus, as well as the proposed CLC project, is shown below.

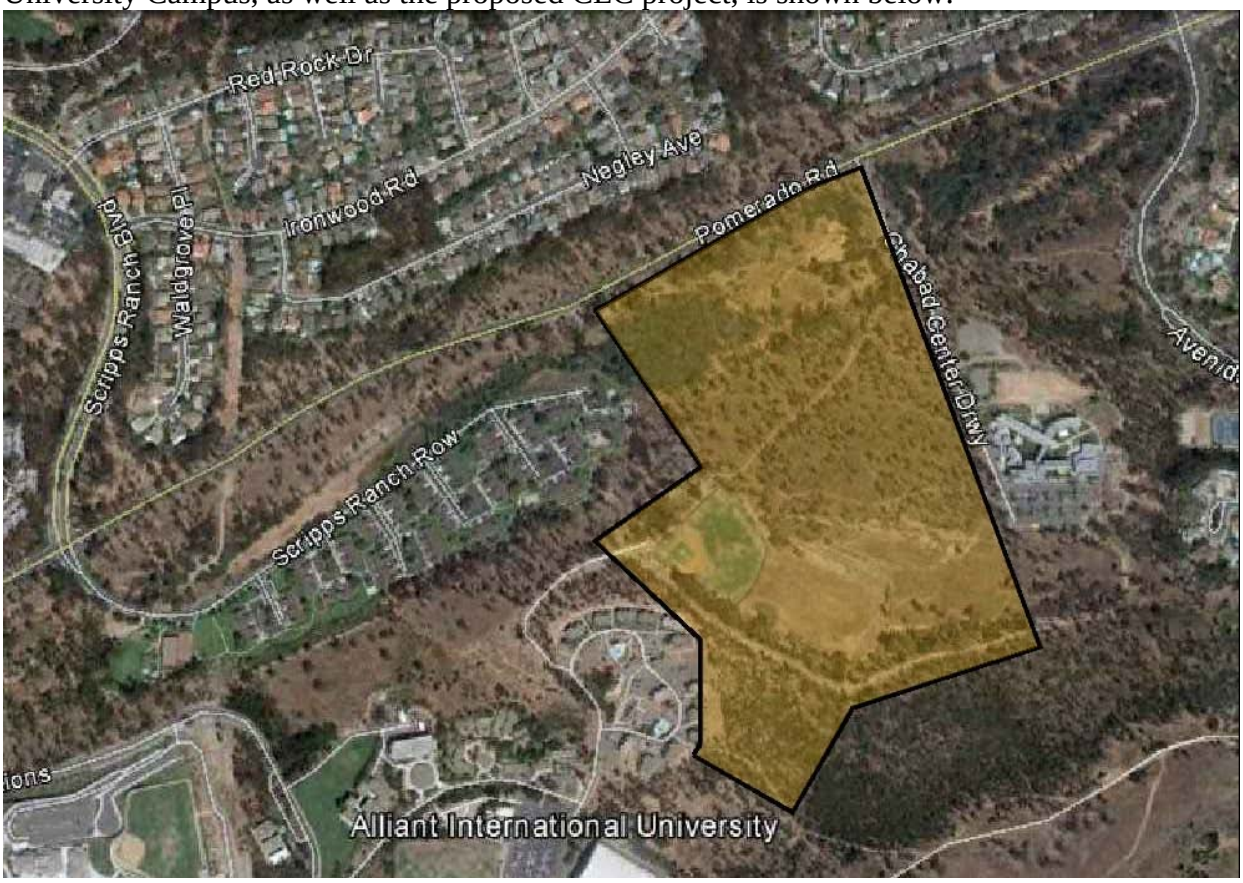


Figure 1: Project Location Map

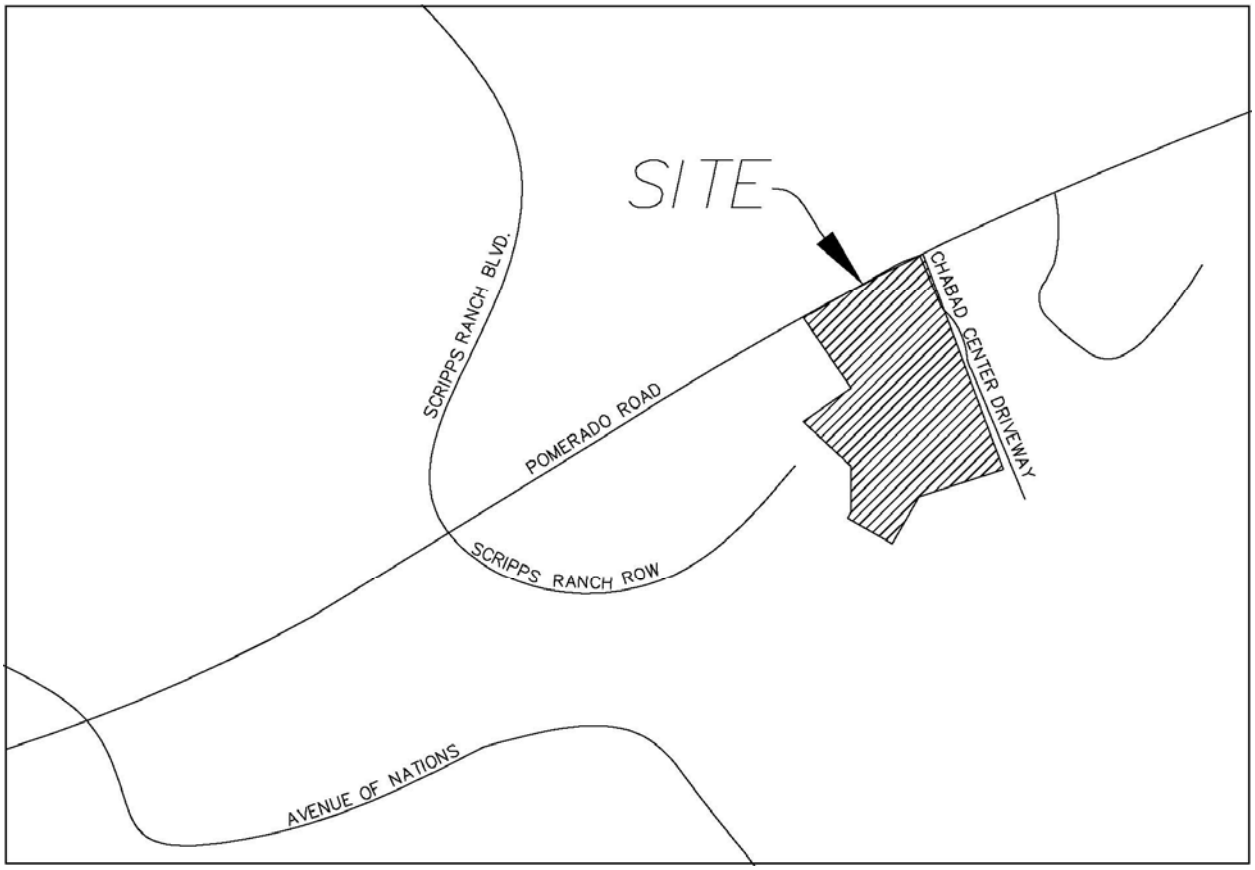


Figure 2: Vicinity Map

2.1 Existing Project/Condition

The project is mostly vacant land. A portion of the property was rough graded and a baseball field exists on the property as well. The total gross area is approximately 53 acres. The site is described as Parcel 2 of Parcel Map _____, in the City of San Diego, County of San Diego, State of California, filed in the Office of the County Recorder of San Diego County.

Pomerado Road and Chabad Center Driveway are constructed with public sewer, public water and private storm drain facilities. The CLC project proposes to connect to the existing 8-inch sewer main within the public utility easement in Chabad Center Driveway. The 8-inch sewer connects to an existing 15-inch public sewer in Pomerado Road. The existing site, as well as the existing public sewer improvements adjacent to the site, is shown on Exhibit “A”.

2.2 Proposed Project/Condition

The proposed project development will include the construction of 450 assisted living units (400 assisted living units and 50 acute assisted living units) comprised of various configurations (apartment style, garden apartment style, and cottage/villa style) and 60 skilled nursing beds. The site will incorporate a commons/recreation building, a facilities/maintenance building, acute care health center, surface parking lots, onsite vehicular circulation, onsite ADA compliant sidewalks and landscape/hardscape areas adjacent to all structures.

The proposed sewer mains will be located within private on-site drives throughout the Glen at Scripps Ranch project. The overall goal is to design and construct the new sewer to meet the requirements of the California Uniform Plumbing Code. Phasing of the improvements is not known at this point. Phasing, if required, will be based on the schedule for developing public improvement plans, obtaining permits, and CLC's ability to finance and construct the project and associated improvements.

The sewer from the proposed project will discharge into the existing public 8-inch sewer main located in Chabad Center Driveway. The northeasterly discharge point/connection to Chabad Center Driveway will serve all units. The proposed onsite sewer system will utilize gravity flow (i.e. there are no pump stations included in the proposed design). The design of the proposed sewer facilities will be in accordance with the California Uniform Plumbing Code. The size of the proposed sanitary sewer mains is based on the City of San Diego's Sewer Design Guide and California Uniform Plumbing Code. All of the on-site private sewer mains and laterals will be designed to maintain the minimum, required horizontal separation from private water mains.

3. METHODOLOGY

Recognizing this type of project is somewhat unique, doesn't relate well to other standard City project types, and most importantly is similar to other projects designed and constructed by Continuing Life Communities in San Diego County and Southern California (i.e. continuing care retirement community with assisted living units and skilled nursing beds). Continuing Life Communities has provided data based on these other existing, similar projects. This data was used in the preparation of this Sewer Study. An equivalent population of 2.0 was used in lieu of the 3.5 from the City of San Diego's Density Conversion Table. Refer to Table 2 for the summary of the estimated sewer flow calculations for the project.

In addition to the flow estimates, this Sewer Study also evaluated the hydraulics of the on-site private sewer mains as well as the off-site public sewer main in Chabad Center Driveway. The following City of San Diego hydraulic requirements/standards for public sewer mains have been verified:

- The ratio of depth of flow in the main to the diameter of main is not to exceed 0.5 for dry weather flows

$$\frac{d_n}{D} \leq 0.5 \qquad \textit{Section 1.3.3.3, pg 1-8}$$

- The minimum allowable cleansing velocity (V) is greater than or equal to 2 feet per second. Sewer main reaches that do not sustain 2 fps at peak flows are designed to have a minimum slope of 1 percent per section 1.3.3.1 (Hydraulic Requirements) of the City's Sewer Design Guide).

$$V \geq 2.0\ fps \quad \textit{Section 1.3.3.1, page 1-8}$$

4. ANALYSIS AND RESULTS

Determination of the size of the proposed sanitary sewer mains was based on the City of San Diego Sewer Design Guide, October 2004 and Handbook of Hydraulics, 6th Edition, Brater and King.

4.1 Design Criteria

- Equivalent Dwelling Unit = EDU
- Daily Per Capita Sewer Flow = 80 Gal Per Day/ Capita
- Persons/Dwelling Unit = 2.0 based on other existing, similar projects
- Average Flow = Daily Per Capita Flow x Persons/Dwelling Unit x Number of Units
- Sewer Peaking Factor = 6.2945 $(pop)^{-0.1342}$ (from Figure No. 3)
- Design Flow = Average Flow x Peaking Factor

The following are assumptions made for the DU/Net Ac (from City of San Diego's Density Conversions Table):

- ✓ Facilities Building = 17.9 DU/Net Acre
- ✓ Commons/Recreation Building = 8.9 DU/Net Acre
- ✓ Health Center = 42.9 DU/Net Acre

4.2 Sample Calculations

4.2.1 Demand / Flow Calculations

Line Number D-1 – MH # 25 to MH # 24
Number of Units = 8
80 Gal /Day
2.0 Pop/DU
Population Served = (8)(2.0) = 16.0
Peak Factor = 4.0 (less than 200 Pop - from Figure 3)
Design Flow = (16)(80) = 1280 Gal/Day
Peak Flow = (1280)(4.0)(1.5473 x 10^-6) = 0.008 CFS

4.2.2 Hydraulic Calculations

Peak Flow = 0.014 CFS
Pipe Size = 8 inches
Slope 1.0%

From King's Handbook:
Q = (K')(d ^8/3)(s ^1/2)/n
K' = (0.014)(.013)/(0.667 ^8/3)(.01^1/2) =0.0053
D/d (from Figure 2) = 0.08
Ca (from Figure 2) = 0.0294

A = Ca(d^2) = (0.0294) (0.667^2) = 0.0131 s.f.
V = Q/A = 0.014/0.0131 = 1.1 fps

4.2.3 Existing Sanitary Sewer System

There are two existing offsite municipal gravity sanitary sewer mains located adjacent to the proposed project. There exists an 8-inch sewer in the area northeast of the project in Chabad Center Driveway (City Drawing No. 27827-5-D and City Drawing No. 27827-6-D), which flows into an existing 15-inch sewer in Pomerado Road (City Drawing No. 14705-10-D). The existing public system in Chabad Center Driveway was evaluated by combining the estimated on-site CLC sewer flows with the sewer flows from the Chabad project using information contained in the Chabad project sewer study (copy included in Appendix "A").

4.2.4 Proposed Sanitary Sewer Improvements

The proposed private sewer mains were also analyzed using the estimate of sewer contained herein. The peak flow from the project is 201,800 gal/day. Refer to Table 2 for the summary of the hydraulic analysis of the on-site public sewer mains.

Table 1 Summary of Design Flows

	Average Flow (gal/day)	Peak Flow (gal/day)
Proposed Project/Condition	80,720	201,800

5. SEWER EASEMENT AND ACCESS

The proposed private sewer mains will be located within private on-site drives throughout the Glen at Scripps Ranch project. Because sewer mains will be private and privately maintained, no public utility and access easement will be required. The on-site private systems will connect to the existing offsite public sewer systems located in Chabad Center Driveway within an existing public utility and access easements.

6. HORIZONTAL ALIGNMENT

The horizontal design of the proposed sewer facilities will be in accordance with the Sewer Design Guide and California Uniform Plumbing Code. The minimum horizontal radius for the proposed 8-inch main will be 200 ft. All sewer pipe is proposed to be PVC SDR 26 sewer pipe with precast concrete manholes meeting City standards and California Uniform Plumbing Code.

7. CONCLUSION

This Sewer Study has included an estimate of the proposed on-site sewer flows for the project. The estimate of on-site flows was based on data provided by Continuing Life Communities and in general conformance with the California Uniform Plumbing Code.

The Sewer Study also evaluated the hydraulics of the proposed on-site private sewer mains as well as the existing 8-inch public sewer main in Chabad Center Driveway. The results of the analysis demonstrates that the proposed on-site private sewer mains as well as the existing public sewer main in Chabad Center Driveway meet the City of San Diego's required minimum cleansing velocity (2 fps) and maximum d_n/D (0.5) requirements in accordance with the City of San Diego Sewer Design Guide.

Therefore the proposed private sewer mains meet the City of San Diego and California Uniform Plumbing Code's requirements. In addition, the project does not cause any significant impacts to the existing offsite public 8-inch sewer main in Chabad Center Driveway. The existing 15-inch trunk sewer main in Pomerado Road was not analyzed.

Figure 3 CITY OF SAN DIEGO PEAKING FACTORS FOR SEWER FLOWS

FIGURE 3

CITY OF SAN DIEGO
METROPOLITAN WASTEWATER DEPARTMENT

PEAKING FACTOR FOR SEWER FLOWS
(Dry Weather)

Ratio of Peak to Average Flow*
Versus Tributary Population

Population	Ratio of Peak to Average Flow	Population	Ratio of Peak to Average Flow
200	4.00	4,800	2.01
500	3.00	5,000	2.00
800	2.75	5,200	1.99
900	2.60	5,500	1.97
1,000	2.50	6,000	1.95
1,100	2.47	6,200	1.94
1,200	2.45	6,400	1.93
1,300	2.43	6,900	1.91
1,400	2.40	7,300	1.90
1,500	2.38	7,500	1.89
1,600	2.36	8,100	1.87
1,700	2.34	8,400	1.86
1,750	2.33	9,100	1.84
1,800	2.32	9,600	1.83
1,850	2.31	10,000	1.82
1,900	2.30	11,500	1.80
2,000	2.29	13,000	1.78
2,150	2.27	14,500	1.76
2,225	2.25	15,000	1.75
2,300	2.24	16,000	1.74
2,375	2.23	16,700	1.73
2,425	2.22	17,400	1.72
2,500	2.21	18,000	1.71
2,600	2.20	18,900	1.70
2,625	2.19	19,800	1.69
2,675	2.18	21,500	1.68
2,775	2.17	22,600	1.67
2,850	2.16	25,000	1.65
3,000	2.14	26,500	1.64
3,100	2.13	28,000	1.63
3,200	2.12	32,000	1.61
3,500	2.10	36,000	1.59
3,600	2.09	38,000	1.58
3,700	2.08	42,000	1.57
3,800	2.07	49,000	1.55
3,900	2.06	54,000	1.54
4,000	2.05	60,000	1.53
4,200	2.04	70,000	1.52
4,400	2.03	90,000	1.51
4,600	2.02	100,000+	1.50

INTERPOLATE ↑

USE FORMULA ↓

*Based on formula: Peak Factor = $6.2945 \times (pop)^{-0.1342}$
(Holmes & Narver, 1960)

Figure 4 HANDBOOK OF HYDRAULICS, BRATER AND KING

FIGURE 4

HANDBOOK OF HYDRAULICS

for the Solution of Hydraulic Engineering Problems

Sixth Edition

Table 7-4. For Determining the Area a of the Cross Section of a Circular Conduit Flowing Part Full

Let $\frac{\text{depth of water}}{\text{diameter of channel}} = \frac{D}{d}$ and C_a = the tabulated value. Then $a = C_a d^2$.

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.0000	.0013	.0037	.0069	.0105	.0147	.0192	.0242	.0294	.0350
.1	.0409	.0470	.0534	.0600	.0668	.0739	.0811	.0885	.0961	.1039
.2	.1118	.1199	.1281	.1365	.1449	.1535	.1623	.1711	.1800	.1890
.3	.1982	.2074	.2167	.2260	.2355	.2450	.2546	.2642	.2739	.2836
.4	.2934	.3032	.3130	.3229	.3328	.3428	.3527	.3627	.3727	.3827
.5	.393	.403	.413	.423	.433	.443	.453	.462	.472	.482
.6	.492	.502	.512	.521	.531	.540	.550	.559	.569	.578
.7	.587	.596	.605	.614	.623	.632	.640	.649	.657	.666
.8	.674	.681	.689	.697	.704	.712	.719	.725	.732	.738
.9	.745	.750	.756	.761	.766	.771	.775	.779	.782	.784

Table 7-14. Values of K' for Circular Channels in the Formula

$$Q = \frac{K'}{n} d^{5/2} s^{1/2}$$

D = depth of water d = diameter of channel

$\frac{D}{d}$	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0		.00007	.00031	.00074	.00138	.00222	.00328	.00455	.00604	.00775
.1	.00967	.0118	.0142	.0167	.0195	.0225	.0257	.0291	.0327	.0360
.2	.0406	.0448	.0492	.0537	.0585	.0634	.0686	.0738	.0793	.0849
.3	.0907	.0966	.1027	.1089	.1153	.1218	.1284	.1352	.1420	.1490
.4	.1561	.1633	.1705	.1779	.1854	.1929	.2005	.2082	.2160	.2238
.5	.232	.239	.247	.255	.263	.271	.279	.287	.295	.303
.6	.311	.319	.327	.335	.343	.350	.358	.366	.373	.380
.7	.388	.395	.402	.409	.416	.422	.429	.435	.441	.447
.8	.453	.458	.463	.468	.473	.477	.481	.485	.488	.491
.9	.494	.496	.497	.498	.498	.498	.496	.494	.489	.483
1.0	.463									

TABLE 2- SEWER HYDRAULIC CALCULATIONS

SEWER STUDY SUMMARY FOR THE GLEN AT SCRIPPS RANCH

JOB NO. 1049.1 **BY: LATITUDE 33** **PREPARED BY: M.V.** **DATE: 3-12-14**

LINE	FROM MH	TO MH	RESIDENTIAL DWELLING UNITS	POP./ UNIT	POP. INLINE	SERVED TOTAL	PEAK/AVG RATIO	PEAK DESIGN FLOW M.G.D.	PEAK DESIGN FLOW CFS	LINE SIZE (INCHES)	DESIGN SLOPE (%)	dn(FT) n= 0.013	dn/D	Rh (ft)	VELOCITY (fps)	Comments
D-1	25	24	8	2	16.0	16.0	4.00	0.005	0.008	8	2.00	0.03	0.04	0.02	1.1	Private
D-1	24	23	2	2	4.0	20.0	4.00	0.006	0.010	8	3.20	0.03	0.04	0.02	1.4	Private
D-1	23	22	8	2	16.0	36.0	4.00	0.012	0.018	8	3.00	0.04	0.06	0.03	1.7	Private
D-1	22	21	4	2	8.0	44.0	4.00	0.014	0.022	8	7.30	0.03	0.05	0.02	2.4	Private
D-2	27	26	72	2	144.0	144.0	4.00	0.046	0.071	8	1.00	0.11	0.16	0.07	1.9	Private
D-3	28	26	76	2	152.0	152.0	4.00	0.049	0.075	8	1.00	0.11	0.16	0.07	1.9	Private
D-3	26	21	0	2	0.0	296.0	3.68	0.087	0.135	8	1.00	0.15	0.22	0.09	2.3	Includes D-2; Private
D	21	19	18	2	36.0	376.0	3.41	0.103	0.159	8	2.40	0.13	0.19	0.08	3.2	Includes D-1, D-2 & D-3; Private
C-1	20	19	12	2	24.0	24.0	4.00	0.008	0.012	8	1.00	0.05	0.07	0.03	1.1	Private
C-1	19	17	10	2	20.0	420.0	3.27	0.110	0.170	8	1.00	0.17	0.25	0.10	2.4	Includes D; Private
C-2	18	17	22	2	44.0	44.0	4.00	0.014	0.022	8	1.00	0.06	0.09	0.04	1.3	Private
C	17	16	1	2	2.0	466.0	3.11	0.116	0.180	8	1.00	0.17	0.26	0.10	2.5	Includes C-1 & C-2; Private
C	16	15	1	2	2.0	468.0	3.11	0.116	0.180	8	1.00	0.17	0.26	0.10	2.5	Private
C	15	14	4	2	8.0	476.0	3.08	0.117	0.182	8	1.00	0.17	0.26	0.10	2.5	Private
C	14	13	3	2	6.0	482.0	3.06	0.118	0.183	8	1.00	0.17	0.26	0.10	2.5	Private
C	13	12	7	2	14.0	496.0	3.01	0.120	0.185	8	1.00	0.17	0.26	0.10	2.5	Private
C	12	11	4	2	8.0	504.0	3.00	0.121	0.187	8	1.00	0.17	0.26	0.10	2.5	Private
C	11	4	0	2	0.0	504.0	3.00	0.121	0.187	8	1.00	0.17	0.26	0.10	2.5	Private
B	10	9	78	2	156.0	156.0	4.00	0.050	0.077	8	1.00	0.11	0.17	0.07	1.9	Private
B	9	8	78	2	156.0	312.0	3.63	0.091	0.140	8	1.00	0.15	0.23	0.09	2.3	Private
B	8	7	0	2	0.0	312.0	3.63	0.091	0.140	8	1.20	0.14	0.21	0.08	2.4	Private
B	7	6	15.5	2	31.0	343.0	3.52	0.097	0.150	8	1.00	0.15	0.23	0.09	2.3	Includes Facilities Bldg & Commons/Rec Bldg*; Private
B	6	5	47	2	94.0	437.0	3.21	0.112	0.174	8	1.00	0.17	0.25	0.10	2.4	Includes Assisted Living**; Private
B	5	4	0	2	0.0	437.0	3.21	0.112	0.174	8	6.30	0.11	0.16	0.07	4.7	Private
A	4	3	0	2	0.0	941.0	2.56	0.193	0.298	8	1.00	0.22	0.33	0.12	2.8	Includes C; Private
A	3	2	34	2	68.0	1,009.0	2.50	0.202	0.312	8	1.00	0.23	0.34	0.13	2.9	Includes Skilled Nursing***; Private
A	2	1	0	2	0.0	1,009.0	2.50	0.202	0.312	8	2.70	0.17	0.26	0.10	4.1	
Existing	E4	1							0.410	8	6.85	0.16	0.24	0.09	6.2	Flow from Chabad project****; Public
Existing	1	E3							0.722	8	6.85	0.21	0.32	0.12	7.3	Includes A; Public
Existing	E3	E2							0.722	8	5.78	0.22	0.33	0.12	6.8	Public
Existing	E2	E1							0.722	8	2.00	0.30	0.45	0.16	4.7	Public

SEWER STUDY SUMMARY FOR THE GLEN AT SCRIPPS RANCH

JOB NO. 1049.1 **BY: LATITUDE 33** **PREPARED BY: M.V.** **DATE: 3-12-14**

Notes:

* Facilities Bldg assumed to be at 17.9 EDU/Net AC & Commons/Rec Bldg assumed to be at 8.9 EDU/Net AC

Commons Bldg= 1.322x8.9=11.8 EDU

Facilities = 0.208x17.9=3.7 EDU

** Assisted Living (Health Center) assumed to be at 42.9 EDU/Net AC

Assisted Living = 1.096x42.9=47.0 EDU

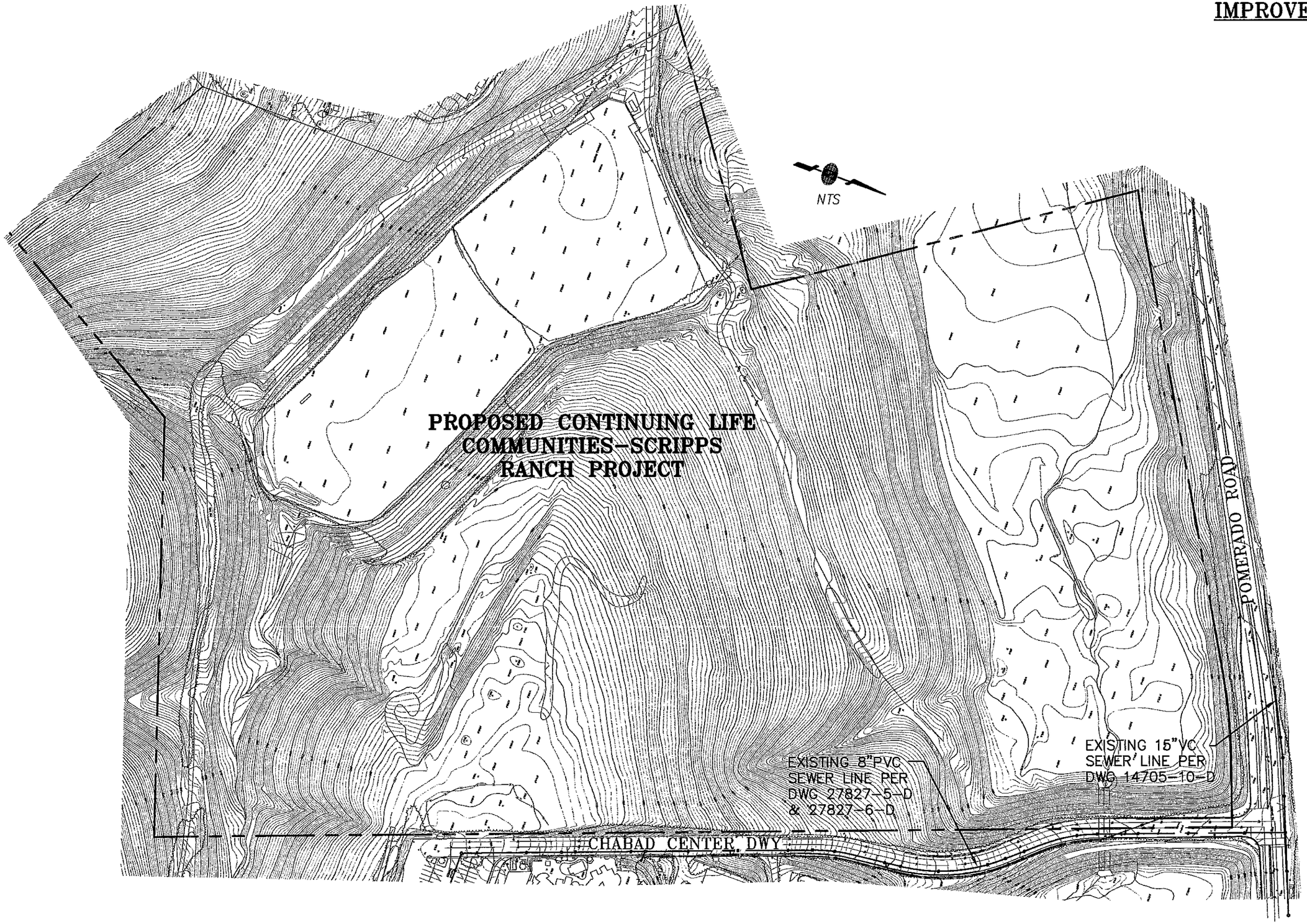
*** Skilled Nursing (Health Center) assumed to be at 42.9 EDU/Net AC

Skilled Nursing = 0.794x42.9=34.0 EDU

****Existing sewer data taken from the Chabad Housing Facility/Educational Campus Sewer Study.

EXHIBIT A – EXISTING SEWER IMPROVEMENTS

EXHIBIT 'A'– EXISTING SEWER IMPROVEMENTS



Latitude 33
Planning and Engineering
6355 Mira Sorrento Place, Suite 650
San Diego, Ca. 92121
858–751–0633 Fax 858–751–0634

EXHIBIT B – PROPOSED SEWER IMPROVEMENTS

MANHOLE DATA		
M.H.#	RIM ELEV.	INVERT ELEV.
E1	(607.4)	593.96
E2	(606.72)	(600.72)
E3	(617.18)	(610.64)
E4	(628.69)	(623.76)
1	624.4	618.48
2	627.5	621.6
3	634.0	623.6
4	642.0	626.0
5	649.0	641.2
6	657.5	644.1
7	658.5	647.7
8	658.5	648.1
9	660.8	650.4
10	659.0	653.0
11	642.0	627.3
12	641.0	628.5
13	642.7	629.9
14	643.5	630.5
15	646.3	632.3
16	646.8	632.7
17	647.5	633.5
18	652.0	645.0
19	645.8	635.2
20	643.0	638.0
21	651.8	641.7
22	654.8	648.8
23	662.3	656.3
24	663.2	657.2
25	667.4	661.4
26	653.5	642.9
27	651.5	645.5
28	655.5	645.9

EXHIBIT 'B'

VILLAGE AT SCRIPPS RANCH
SEWER SYSTEM ANALYSIS

Latitude 33
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5355 Mira Sorrento Place, Suite 650
San Diego, Ca. 92121
858-751-0633 Fax 858-751-0634

SCALE:	1"=100'
DATE:	02-15-12
JOB NO.:	1049.1
SHEET:	1 OF 1

NOTE: ALL ONSITE SEWER FACILITIES WILL BE PRIVATE AND SHALL BE DESIGNED TO MEET THE REQUIREMENTS OF THE CALIFORNIA UNIFORM PLUMBING CODE .

APPENDIX A – EXISTING CHABAD HOUSING SEWER STUDY

1 Project Description

The proposed Chabad Housing Facility project is located at 10785 Pomerado Road in the City of San Diego[1]. Under the proposed project, 280 dwelling units will be added to the existing Chabad Educational Campus. This study will determine whether the 8" sewer line in Chabad Center Drive has the capacity necessary for the sewer flows resulting from the proposed project.

2 Proposed Sewer Demand Loads

As shown in Appendix B, Land Use Map, the 26.98 acre Chabad Educational Campus is proportioned as follows:

Table 2.1: Area Data

Use Type	Gross Area
Schools	10.40 AC
Residential (RM-1-3)*	16.58 AC

Note, the Residential Use type is based upon the equivalent density of the proposed 280 dwelling units. 280 D.U/ (0.8*16.58 AC_{gross}) = 21.1 D.U. /AC_{net} (See Appendix C, Table 1-1).

From Table 1-1 of the 2004 City of San Diego Sewer Design Guide[2], the following data is obtained:

Table 2.2: Population Data

Use Type	Maximum Density (D.U./ AC_{net})	Population (D.U.)	Equivalent Population (Pop./AC_{net})
Schools	8.9	3.5	31.2
RM-1-3	22	3.0	66.0

Net Acreage = 0.8 x Gross Acreage
Population = Net Acreage x Equivalent Population
Average Flow= 80 gallons/(person*day)
Peaking Factor = 6.2945 x $(\text{Population})^{-0.1342}$, See Appendix C, Figure 1-1
Peak Flow = Average Flow x Peaking Factor x Population

The peak demand for the Residential and school buildings are calculated in sections 2.1 and 2.2 respectively.

[1] See Appendix A Vicinity Map
[2] See Appendix C Sewer Design Data

2.1 School Peak Demand

Net Acreage = 0.8 x 10.40 AC = 8.32 AC
Population = 8.32 AC x 31.2 persons/AC = 259.58 persons
Peaking Factor = 3.80 (Interpolated from Figure 1-1).
Peak Flow = 80 gallons/(person*day) x 3.80 x 259.58 persons
= 78,912 gallons/day
= 0.12 CFS

2.2 Residential Peak Demand

Net Acreage = 0.8 x 16.58 AC = 13.26 AC
Population = 13.26 AC x 66.0 persons/AC = 875.42 persons
Peaking Factor = 2.64 (Interpolated from Figure 1-1)
Peak Flow = 80 gallons/(person*day) x 2.64 x 875.42 persons
= 184,889 gallons/day
= 0.29 CFS

3 Analysis of Existing 8" Sewer Main

The Chabad property is served by the 8" PVC sewer line in Chabad Center Drive. Connections are made to this sewer line at the two points shown in Appendix B as connections 'A' and 'B'.

The lateral at connection 'A' carries flows from the existing school buildings. Flows from the proposed residential dormitories will be carried by the lateral at connection 'B'. The capacity of the sewer line shall be analyzed for two regions: up and downstream of connection 'B'. Upstream of connection 'B the only demand on the sewer is that of the existing school facilities. Upstream sewer line slopes vary between 1.66 and 12.3 percent, while downstream slopes vary between 2.00 and 9.48 percent. Since critical capacity of the pipe occurs along the runs with minimal grade, the 1.66% and 2.00% slopes are used respectively in the sewer capacity analyses.

Manning's equation is used to calculate the depth of flow in the pipe. The equation is given by:

$$Q = (1/n)*1.49*A^{5/3}*P^{-2/3}*S_o^{1/2}$$

Where:

Q = flow in cubic feet per second
n = roughness coefficient (0.013 for PVC)
A = Cross-sectional area of flow is square feet
P = wetted perimeter in feet
S_o = slope of the channel

All calculations for this report are computed using AutoCad 2006 software. The results are given in sections 3.1 and 3.2.

3.1 Upstream Condition

In the upstream condition the 8" PVC pipe is under a demand load of 0.12 CFS and has a minimum slope of 1.66 percent. The results of the Manning's analysis are given in Table 3.1.1:

Table 3.1.1 Manning's Calculation, Upstream Condition

Data Given	Results
Shape ..... Circular	Depth ..... 1.5025 in
Solving for ..... Depth of Flow	Area 0.3491 ft2
Diameter ..... 8.0000 in	Wetted Area 0.0454 ft2
Flowrate ..... 0.1200 cfs	Wetted Perimeter ..... 7.1717 in
Slope ..... 0.0166 ft/ft	Perimeter ..... 25.1327 in
Manning's n 0.0130	Velocity ..... 2.6423 fps
	Hydraulic Radius ..... 0.9119 in
	Percent Full ..... 18.7810 %
	Full flow Flowrate ..... 1.5569 cfs
	Full flow velocity ..... 4.4603 fps

Under the 0.12 CFS demand load, the sewer line has a maximum depth of flow of 1.50 inches. The 1.50" depth of flow is below the half-full (4") maximum capacity allowable under City of San Diego Standards.

3.2 Downstream Condition

In the downstream condition the 8" PVC pipe is under a demand load of 0.41 CFS (0.12 + 0.29 CFS) and has a minimum slope of 2.00 percent. The results of the Manning's analysis are given in Table 3.2.1:

Table 3.2.1 Manning's Calculation, Existing Condition

Data Given	Results
Shape ..... Circular	Depth ..... 2.6677 in
Solving for ..... Depth of Flow	Area 0.3491 ft2
Diameter ..... 8.0000 in	Wetted Area 0.1019 ft2
Flowrate ..... 0.4100 cfs	Wetted Perimeter ..... 9.8499 in
Slope ..... 0.0200 ft/ft	Perimeter ..... 25.1327 in
Manning's n 0.0130	Velocity ..... 4.0232 fps
	Hydraulic Radius ..... 1.4899 in
	Percent Full ..... 33.3466 %
	Full flow Flowrate ..... 1.7090 cfs
	Full flow velocity ..... 4.8958 fps

Under the 0.41 CFS demand load, the sewer line has a maximum depth of flow of 2.67 inches. The 2.67" depth of flow is below the half-full (4") maximum capacity allowable under City of San Diego Standards.

4 Conclusion

The addition of the Chabad Housing Facility will increase the peak flow from 0.12 to 0.41 CFS in the existing sewer line in Chabad Center Drive. As a result, the maximum depth of flow in the 8" PVC sewer main will increase from 1.50 to 2.67 inches. The proposed depth of flow, 2.67", is less than the maximum depth of flow, 4", allowed by current City of San Diego Standards.

WASTE MANAGEMENT PLAN

FOR

THE GLEN AT SCRIPPS RANCH
CONTINUTING CARE RETIREMENT COMMUNITY

DECEMBER 2014

Prepared for:
The Glen at Scripps Ranch CCRC LLC

Prepared by:

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Contents

1.0 PURPOSE 1

2.0 PROJECT DESCRIPTION 1

3.0 PRECONSTRUCTION 2

4.0 DEMOLITION AND CONSTRUCTION PHASE 3

Table 4.1: Estimated Construction Waste Generated & Percent Diverted 4

5.0 OCCUPANCY PHASE 6

Table 5.1: Waste Generation – Occupancy Phase: CCRC 6

Table 5.2: Minimum Exterior Refuse and Recyclable Material Storage Areas for Nonresidential Development 7

6.0 CONCLUSION 8

LIST OF ATTACHMENTS

APPENDIX 1: CONSTRUCTION & DEMOLITION RECYCLING FACILITIES DIRECTORY

APPENDIX 2: LANDSCAPE WASTE CALCULATIONS & PLAN

1.0 PURPOSE

According to the City of San Diego, Development Services Department, California Environmental Quality Act (CEQA) Significance Determination Thresholds (January 2011), projects that include the demolition, construction, and/or renovation of 40,000 square feet or more of building space generate 60 tons of waste or more. This amount of waste is further identified as a potentially significant cumulative impact. Cumulative impacts are mitigated by the implementation of a project-specific Waste Management Plan which identifies ways to reduce solid waste impacts to below a level of significance. The purpose of this Waste Management Plan (WMP), for The Glen at Scripps Ranch Project, is to identify waste that will be generated by the project during Site Development, Demolition/Construction, and Occupancy and to identify measures to reduce the waste.

The following regulations apply to Site Development, Demolition/Construction and through Occupancy to assure waste is being diverted from landfills. On December 9, 1997, the City of San Diego adopted Section 142.08 of the San Diego Municipal Code, Refuse and Recyclable Materials Storage Regulations. The ordinance requires the diversion of recyclable materials from landfill disposal to conserve the capacity and extend the useful life of the Miramar landfill, and reduce greenhouse gas emissions. Section 142.08 provides for permanent, adequate, and convenient space for the storage and collection of refuse and recyclable material to encourage recycling of solid waste. On November 13, 2007, the City of San Diego adopted a Recycling Ordinance. The ordinance requires recycling of plastic and glass bottles and jars, paper, newspaper, metal containers and cardboard at private residences, commercial buildings, and at special events requiring a City permit.

Effective January of 2008, the City of San Diego adopted a Construction and Demolition (C&D) Debris Diversion Deposit Ordinance. The ordinance requires that the majority of construction, demolition, and remodeling projects requiring building, combination, and demolition permits pay a refundable C&D Debris Recycling Deposit and divert at least 50% of their debris by recycling, reusing or donating usable materials. The C&D ordinance has a provision that would require 75% of construction and demolition waste be diverted once a certified facility within San Diego reaches a 75% diversion rate within 25 miles of 202 “C” Street. The ordinance is designed to keep C&D materials out of local landfills and ensure they get recycled. The California legislature has established a minimum diversion of 75% or more statewide. .

2.0 PROJECT DESCRIPTION

The Glen at Scripps Ranch is located at 10455 Pomerado Road, within the City of San Diego, Scripps Miramar Ranch Community Planning Area. The site is currently part of the Alliant International University Master Plan and is bounded by Pomerado Road to the north, Chabad Hebrew Academy to the east and Open Space to the south. See Figure 1.

The project proposes an amendment to Conditional Use Permit (CUP) # 133-PC to remove the property from the Alliant International University Master Plan and to allow a Continuing

Care Retirement Community (CCRC), known as The Glen at Scripps Ranch. The CCRC consists of non-acute assisted living units (villas, garden terraces, and apartment style units), acute assisted living units and 50 Skilled Nursing Facility beds as well as dining area and other miscellaneous amenities.

VICINITY MAP

FIGURE 1

3.0 PRECONSTRUCTION

A Solid Waste Management Coordinator (SWMC) for The Glen at Scripps Ranch will be assigned and will have the authority to provide guidelines and procedures for contractor(s) and staff to implement waste reduction and recycling efforts. These responsibilities are, but not limited to, the following:

1. Review and understand the Waste Management Plan including responsibilities of SWMC.
2. Work with contractor(s) to estimate quantities of each type of material that will be salvaged, recycled, or disposed of as waste, then assist contractor(s) with documentation.
3. Review and update procedures as needed for material separation and verify availability of containers and bins needed to avoid delays.

4. Review and update procedures for periodic solid waste collection and transportation to recycling and disposal facilities.
5. Review and update solid waste management requirements for each trade.
6. Possess the Authority to issue Stop Work orders if proper procedures are not being followed.

During each phase, from preconstruction to occupancy of The Glen at Scripps Ranch project(s), the WMP will provide contractors and staff guidelines to ensure the proper reduction, segregation, recycling, and disposal of demolition, construction, and on-going operational waste. Proper segregation of recyclable materials is required based on type of materials generated and the availability of recycling facilities able to accept those materials. This responsibility will be under the direction of the assigned The Glen at Scripps Ranch SWMC.

The Glen at Scripps Ranch SWMC will coordinate with Environmental Services Department and/or Mitigation Monitoring staff, including regular communication and invitations to the work site. An invitation shall be extended to an Environmental Services Department representative at least 7 days prior to attend each pre-construction meeting of each phase of the development.

4.0 DEMOLITION AND CONSTRUCTION PHASE

The Glen at Scripps Ranch shall specify in the contract language that its contractor(s) shall identify which demolition and construction materials will be reused or recycled onsite. Waste materials will be reviewed for reuse in construction, serving as both a solid waste management and cost savings measure. Reuse will be maximized in order to achieve an overall goal of 50% reuse/post-consumer recycled materials. The contractors and subcontractors will coordinate and work closely with the SWMPC to minimize the over-purchasing of construction materials to lower the amount of materials taken to recycling and disposal facilities. Ways in which the project will minimize over-purchasing is to purchase pre-cut materials, work closely amongst designers, contractors, and suppliers as well as reuse whenever possible.

The contractor(s) will be required to perform daily inspections of the construction site to ensure compliance with the requirements of the WMP and all other applicable laws and ordinances and report directly to The Glen at Scripps Ranch SWMC. Daily inspections will include verifying the availability and number of dumpsters based on amount of debris being generated, assuring correct labeling of dumpsters, proper sorting and segregation of materials, and salvaging of excess materials when feasible.

The proposed project does not include demolition of any permanent buildings, concrete, or asphalt. The site is currently vacant with the exception of a baseball field. The baseball field materials such as fence material, dug out box, and other miscellaneous field items belong to Alliant International University. All material removed will be given back to the University for reuse elsewhere on their property. Therefore, for purposes of this analysis, it is expected that

at a minimum 100% of the miscellaneous material generated from The Glen at Scripps Ranch projects demolition waste will be diverted.

The Glen at Scripps Ranch site requires the removal of tress and scrub for development. Methodology used to determine estimated waste: All tree volumes were based off of the average height and spread of the naturalized trees (Eucalyptus sideroxylon, citridora, cinerea). An aerial image was used to approximate tree locations based on form and shadow. For the low lying ground material, they were classified in density categories as Major, Moderate, and Minor. The classifications relate to the amount /density of ground foliage according to the aerial used. It was estimated that the total amount of landscape waste for the site would be 517,973 tons. *This is only an estimate based upon the above methodology*, a*ctual tonnage shall be determined by a contractor at the time of removal.* Landscape material will be sent to Miramar Greenery located at 5180 Convoy Street for a 100% diversion. Please refer to the landscape waste calculations and plan found in Appendix 2. Furthermore, it is anticipated that all grading onsite will be balanced.

Construction Waste. During the construction of The Glen at Scripps Ranch, the construction debris generated is expected to include the materials listed in Table 4.1. Materials shall be sources separated as indicated in Table 4.1

The City of San Diego Environmental Services Department requires projects to estimate tonnage of expected construction waste. As provided by Environmental Services Department and for purposes of this Waste Management Plan, Glen at Scripps utilizes the Environmental Protection Agency (EPA), 3.0 pounds of waste per square foot for waste generation on new construction to calculate expected tonnage:

823,850 sq. ft. x 3.0/2,000lbs = 1,236 tons

The 1,236 tons is an assumption and is used as a place holder until further detail is provided and the hired contractor can accurately assess expected waste. Further, the specific quantity of each material is unknown at this time. As a place holder, the Union Tribune Master Plan contractors shall source separate waste materials according to the material types in Table 4.1.

Table 4.1: Estimated Construction Waste Generated & Percent Diverted

Material Type	Generated (tons)	Handling	Diverted (tons)	Disposed (tons)
Clean Wood (Forming and framing lumber)	247	Inland Pacific or Miramar Greenery	247	0
Metals (Pipes, rebar, flashing, steel, aluminum, copper, brass, stainless steel)	22	Pacific Steel, for example.	22	0
Polystyrene	6	Cactus Recycling	6	0

Blocks, bricks	62	Enniss Incorporated, for example.	62	0
Asphalt, concrete	17	Enniss Incorporated, for example.	17	0
Trash (treated wood)	185	Miramar Landfill	0	185
Roofing	12	LEED Recycling	12	0
Mixed Debris (Insulation, vinyl, doors, floor tile, plastic pipes, film, broken glass, drywall)	583	SANCO/EDCO Recovery & Transfer Facility	513	70
Cardboard	43	Cactus or IMS	43	0
Carpet/Carpet padding	58	DFS Flooring, for example	58	0
TOTAL	1,236	—	980	255

See Appendix 1 for a list of private companies that can handle construction debris and recycling/reuse of various materials.

Based on these estimates, and on providing segregation of these materials, the project would accomplish 79% diversion of construction waste. An estimated 255 tons would end up going to landfill disposal. To ensure this result, contractors will be required to comply with the following methods and procedures below:

1. Construction and Land-Clearing containers will be provided for waste that is to be recycled. Containers shall be clearly labeled, with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor.

2. The collection containers for recyclable Construction and Land-Clearing waste must contain no more than 10% non-recyclable materials, by volume.

3. Use detailed material estimates to reduce risk of unplanned and potentially wasteful material cuts.

4. Conduct daily visual inspections of dumpsters and recycling bins to remove contaminants.

5. Include material purchasing agreements, a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or

recycling, and to take back all unused product. Ensure that subcontractors require the same provisions in their purchase agreements.

6. Removal of construction waste materials from the project site will be performed at least once every week to ensure no over-topping of waste bins. The accumulation and burning of on-site Construction and Land-Clearing waste materials will be prohibited.

7. Post-consumer products will be employed in the design and construction of the new facilities with the goal of achieving 50% of post-consumer content. Examples include reuse of concrete and asphalt generated during demolition and products manufactured with post-consumer content.

Furthermore, The Glen at Scripps Ranch will be required to comply with the following:

1. The City's Construction and Demolition Debris Diversion Deposit Program which requires a refundable deposit based on the tonnage and value of the expected recyclable waste materials as part of the building permit requirements.

2. The City Construction and Demolition Recycling Ordinance which requires identification and sorting of demolition and construction waste materials to be diverted to the appropriate recycling facility.

3. This Waste Management Plan – The Glen at Scripps Ranch will source-separate waste for recycling. The waste contractor will provide monthly reports regarding the amount of waste and recyclable materials to The Glen at Scripps Ranch SWMC who will be responsible for compliance actions with the aforementioned guidelines and make adjustments as needed to maintain conformance. The name and contact information of the waste contractor and SWMC will be provided to ESD at least 10 days prior to the start of any work and updated within 5 days of any changes.

The timeline for demolition and construction phases of The Glen at Scripps Ranch projects is undetermined at this time.

5.0 OCCUPANCY PHASE

The Glen at Scripps Ranch projects will be managed by Continuing Life Communities, LLC (CLC). CLC operates several CCRC establishments. Waste Management collects the refuse and recycled material from the CLC operated sites within San Diego County. Based upon information obtained by Waste Management, it is estimated that at occupancy, The Glen at Scripps Ranch may generate 476 tons of waste per year (Refer to Table 5.1).

Table 5.1: Waste Generation – Occupancy Phase: CCRC

Facility	Waste Generated Per Year*
La Costa Glen	768
The Glen at Scripps Ranch	476

*Source: Waste Management Billing Statements - The Glen at Scripps Ranch is 38% smaller than the La Costa Glen facility. Therefore, 38% of waste has been deducted to estimate The Glen at Scripps Ranch estimated waste per year.

In order to continually reduce waste delivered to the landfill during the Occupancy Phase, recycling bins will be provided throughout the facility. The Glen at Scripps Ranch educates their employees and residents to recycle all paper products, cardboard, glass, aluminum cans, recyclable plastics, and yard waste. These products will be source separated by the appropriate labeling method. Specifically, the CCRC grounds include recycle bins that will be located in dedicated trash enclosures and picked up by a waste management company consistent with the City of San Diego, Land Development Code requirements. The Glen at Scripps Ranch will provide signage that specifies items to be recycled. The Glen at Scripps Ranch will further continue to provide and maintain the comprehensive Waste Management Plan and ensure efforts of recycling and proper disposal of solid waste materials are practiced. Other ways in which The Glen at Scripps Ranch will divert waste from the landfill is to conduct annual employee and occupant recycling education seminars as well as set printers to automatically print double sided.

Furthermore, The Glen at Scripps Ranch will be required to comply with the City of San Diego Municipal Code section 142.0830 Refuse and Recyclable Material Storage Regulations for Nonresidential Development (Table 142-08C). A CCRC is an Institutional use; therefore, the nonresidential category was utilized to determine the minimum storage requirements. A Continuing Care Retirement Community (CCRC) is a unique use in that it is not a typical stand alone retail, commercial, office or residential use. Continuing Life Communities operates several CCRC's throughout California and they are identified as an Institutional use by the State. Storage area calculations are based upon those existing CCRC's. Data shows that the existing operations do not require as much storage space as the typical uses mentioned above. However, The Glen at Scripps Ranch has allocated approximately 3,544 square feet of Refuse and Recyclable Material storage space, in excess of what is required per Municipal Code §142.0830.

Table 5.2: Minimum Exterior Refuse and Recyclable Material Storage Areas for Nonresidential Development

Refuse and Recyclable Material Storage "Nonresidential"				
Type	Square Feet	Refuse Storage Per Development (Sq. Ft.)	Recyclable Material Storage Per Development (Sq. Ft.)	Total Storage Required (Sq Ft.)
Institutional	775,440	1,488	1,488	,2976

6.0 CONCLUSION

Demolition waste consists primarily of landscaped trees and shrubs. CLC will divert the green waste to the local Miramar Greenery for a diversion rate of 100%. Construction waste anticipated for The Glen at Scripps Ranch projects is 1,236 tons and is based on EPA's estimate of waste generated for development. The minimum requirement of The Glen at Scripps Ranch is to meet the 75% diversion rate. This WMP estimates that of the 1,286 tons of construction, approximately 79% will be diverted. These tonnages are only estimates.
To ensure that waste is properly managed, Continuing Life Communities, LLC shall establish waste management contract language ensuring:

- Sufficient number of bins are provided, properly used, and their contents taken to appropriate facilities.
- Daily inspections occur to prevent overflow, assuring correct labeling of dumpsters and that no more than 10% by volume of contamination occurs in each bin.
- Over-purchasing of construction materials is minimized.

Continuing Life Communities, LLC will ensure that the Environmental Services Department is included in the precon prior to demolition activities to verify these project features and contract language.

Continuing Life Communities, LLC is committed to establishing recycling guidelines throughout the Preconstruction, Demolition, Construction, and Occupancy phases. A Waste Management Coordinator will be assigned to The Glen at Scripps Ranch project(s). The Coordinator will ensure compliance with the San Diego Municipal Code, Recycling Ordinance, Refuse, Construction and Demolition Recycling Ordinance, and Recyclable Materials Storage Regulations and aim to exceed the 75% recycled material goal by estimating tonnage to be recycled and tracking where recycled material will be diverted during all phases.

APPENDIX 1

CONSTRUCTION & DEMOLITION RECYCLING

FACILITIES DIRECTORY

THE CITY OF SAN DIEGO

2014 Certified Construction & Demolition Recycling Facility Directory

These facilities are certified by the City of San Diego to accept materials listed in each category. Hazardous materials are not accepted. The diversion rate for these materials shall be considered 100%, except mixed C&D debris which updates quarterly. The City is not responsible for changes in facility information. Please call ahead to confirm details such as accepted materials, days and hours of operation, limitations on vehicle types, and cost. For more information visit: www.recyclingworks.com.

Please note: In order to receive recycling credit, Mixed C&D Facility and transfer station receipts must: *-be coded as construction & demolition (C&D) debris -have project address or permit number on receipt *Make sure to notify weighmaster that your load is subject to the City of San Diego C&D Ordinance.* ***Note about landfills: Miramar Landfill and other landfills do not recycle mixed C&D debris.***	**Mixed C&D Debris**	**Asphalt /Concrete**	**Brick/Block/Rock**	**Building Materials for Reuse**	**Cardboard**	**Carpet**	**Carpet Padding**	**Ceiling Tile**	**Ceramic Tile / Porcelain**	**Clean Fill Dirt**	**Clean Wood / Green Waste**	**Drywall**	**Industrial Plastics**	**Lamps / Light Fixtures**	**Metal**	**Mixed Inerts**	**Styrofoam Blocks**
EDCO Recovery & Transfer 3660 Dalbergia St, San Diego, CA 92113 619-234-7774 | www.edcodisposal.com/public-disposal	66%											●					
EDCO Station Transfer Station & Buy Back Center 8184 Commercial St, La Mesa, CA 91942 619-466-3355 | www.edcodisposal.com/public-disposal	66%				●							●			●		
EDCO CDI Recycling & Buy Back Center 224 S. Las Posas Rd, San Marcos, CA 92078 760-744-2700 | www.edcodisposal.com/public-disposal	88%				●										●		
Escondido Resource Recovery 1044 W. Washington Ave, Escondido 760-745-3203 | www.edcodisposal.com/public-disposal	66%																
Fallbrook Transfer Station & Buy Back Center 550 W. Aviation Rd, Fallbrook, CA 92028 760-728-6114 | www.edcodisposal.com/public-disposal	66%				●										●		
Otay C&D/Inert Debris Processing Facility 1700 Maxwell Rd, Chula Vista, CA 91913 619-421-3773 | www.sd.disposal.com	65%																
Ramona Transfer Station & Buy Back Center 324 Maple St, Ramona, CA 92065 760-789-0516 | www.edcodisposal.com/public-disposal	66%				●										●		
SANCO Resource Recovery & Buy Back Center 6750 Federal Blvd, Lemon Grove, CA 91945 619-287-5696 | www.edcodisposal.com/public-disposal	66%				●										●		
All American Recycling 10805 Kenney St, Santee, CA 92071 619-508-1155 (Must call for appointment)						●											
Allan Company 6733 Consolidated Wy, San Diego, CA 92121 858-578-9300 | www.allancompany.com/facilities.htm					●										●		
Allan Company Miramar Recycling 5165 Convoy St, San Diego, CA 92111 858-268-8971 | www.allancompany.com/facilities.htm					●										●		
Allan Company 8514 Mast Blvd, Santee, CA 92701 619-448-4295 | www.allancompany.com/facilities.htm					●										●		
AMS 4674 Cardin St, San Diego, CA 92111 858-541-1977 | www.a-m-s.com								●									
AMS 1120 West Mission Ave, Escondido, CA 92025 858-541-1977 | www.a-m-s.com								●									
Armstrong World Industries, Inc. 300 S. Myrida St, Pensacola, FL 32505 877-276-7876 (Press 1, Then 8) www.armstrong.com/commceilingsna								●									
Cactus Recycling 8710 Avenida De La Fuente, San Diego, CA 92154 619-661-1283 | www.cactusrecycling.com					●								●		●		●

	Mixed C&D Debris	Asphalt /Concrete	Brick/Block/Rock	Building Materials for Reuse	Cardboard	Carpet	Carpet Padding	Ceiling Tile	Ceramic Tile / Porcelain	Clean Fill Dirt	Clean Wood / Green Waste	Drywall	Industrial Plastics	Lamps / Light Fixtures	Metal	Mixed Inerts	Styrofoam Blocks
DFS Flooring 10178 Willow Creek Road, San Diego, CA 92131 858-630-5200 | www.dfsflooring.com						●	●										
Enniss Incorporated 12421 Vigilante Rd, Lakeside, CA 92040 619-443-9024 | www.enniss.net		●	●						●	●							
Escondido Sand and Gravel 500 N. Tulip St, Escondido, CA 92025 760-432-4690 | www.weirasphalt.com/esg		●															
Habitat for Humanity ReStore 10222 San Diego Mission Rd, San Diego, CA 92108 619-516-5267 | www.sdhfh.org/restore.php				●													
Hanson Aggregates West – Lakeside Plant 12560 Highway 67, Lakeside, CA 92040 858-547-2141		●															
Hanson Aggregates West – Miramar 9229 Harris Plant Rd, San Diego, CA 92126 858-974-3849		●								●							
Hidden Valley Steel & Scrap, Inc. 1342 Simpson Wy, Escondido, CA 92029 760-747-6330															●		
HVAC Exchange 2675 Faivre St, Chula Vista, CA 91911 619-423-1855 | www.thehvacexchange.com															●		
IMS Recycling Services 2740 Boston Ave, San Diego, CA 92113 619-231-2521 | www.imsrecyclingservices.com					●								●				
IMS Recycling Services 2697 Main St, San Diego, CA 92113 619-231-2521 | www.imsrecyclingservices.com													●		●		
Inland Pacific Resource Recovery 12650 Slaughterhouse Canyon Rd, Lakeside, CA 92040 619-390-1418											●						
Lakeside Land Co., Inc. 10101 Riverford Rd, Lakeside, CA 92040 619-449-9083 | www.lakesideland.com		●														●	
Lamp Disposal Solutions 8248 Ronson Ct, San Diego, CA 92111 858-569-1807 | www.lampdisposalsolutions.com														●			
Lights Out Disposal 1097 Palm Ave, Ste 100, El Cajon, CA 92020 619-438-1093 | www.lightsoutdisposal.com														●			
Los Angeles Fiber Company 4920 S. Boyle Ave, Vernon, CA 90058 323-589-5637 | www.lafiber.com						●	●										
Miramar Greenery, City of San Diego 5180 Convoy St, San Diego, CA 92111 858-694-7000 | www.sandiego.gov/environmental-services/miramar/greenery.shtml											●						
Moody's 3210 Oceanside Blvd., Oceanside, CA 92056 760-433-3316		●								●						●	
Otay Valley Rock, LLC 2041 Heritage Rd, Chula Vista, CA 91913 619-591-4717 | www.otayrock.com		●															
Pacific Steel, Inc. 1700 Cleveland Ave, National City, CA 91950 619-474-7081															●		
Reclaimed Aggregates Chula Vista 855 Energy Wy, Chula Vista, CA 91913 619-656-1836		●														●	

	Mixed C&D Debris	Asphalt /Concrete	Brick/Block/Rock	Building Materials for Reuse	Cardboard	Carpet	Carpet Padding	Ceiling Tile	Ceramic Tile / Porcelain	Clean Fill Dirt	Clean Wood / Green Waste	Drywall	Industrial Plastics	Lamps / Light Fixtures	Metal	Mixed Inerts	Styrofoam Blocks
Reconstruction Warehouse 3341 Hancock St., San Diego, CA 92110 619-795-7326 | www.recowarehouse.com				●													
Robertson's Ready Mix 2094 Willow Glen Dr, El Cajon, CA 92019 619-593-1856		●								●						●	
Romero General Construction Corp. 8354 Nelson Wy, Escondido, CA 92026 760-749-9312 | www.romerogc.com/crushing/nelsonway.htm		●															
SA Recycling 3055 Commercial St., San Diego, CA 92113 619-238-6740 | www.sarecycling.com															●		
SA Recycling 1211 S. 32nd St., San Diego, CA 92113 619-234-6691 | www.sarecycling.com															●		
Vulcan Carol Canyon Landfill and Recycle Site 10051 Black Mountain Rd, San Diego, CA 92126 858-530-9465 | www.vulcanmaterials.com/carrollcanyon		●	●							●						●	

APPENDIX 2

LANDSCAPE WASTE CALCULATIONS & PLAN

SCALE 1" = 200'

LEGEND

- Major Scrub
- Moderate Scrub
- Minor Scrub
- Removed Tree
- Grading Extent
- Site Boundary

Waste Management Plan

August 29, 2012

Total Landscape Waste	**517,973 Tons**
Trees Removed	**475,808 Tons**
Scrub removed	**42,165 Tons**

Description	Avg. Volume (Compacted Scrub)		Total Amount on site (sq. ft.)		Waste Total Per Category (cu-ft.)
Major Scrub *(18" and above)*	.2 cu-ft	x	1,222,870 sq. ft.	=	**244,574 cu-ft**
Moderate Scrub *(6" through 18")*	.1 cu-ft	x	243,894 sq. ft.	=	**24,389 cu-ft**
Minor Scrub *(6" and below)*	.033 cu-ft	x	367,859 sq. ft.	=	**12,139 cu-ft**
Trees	7,049 cu-ft	x	450 trees	=	**3,172,050 cu-ft**

Notes: Landscaped material should be sent to Miramar Greenery at 5180 Convoy St. San Diego, CA 92111. Compacted scrub and tree calculations are based off of a 10% compaction rate of pre-removed volume. Based on City of San DIego calculations each cubic yard of landscape waste equals 0.15 tons.