



**Key View 1: Existing view.**



**Key View 1: Proposed view.**

L S A

FIGURE 4.1.2

*South Shores Church Master Plan*  
Key View 1 - View from Camino del Avion

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**Key View 2:** Existing view.



**Key View 2:** Proposed view.

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FIGURE 4.1.3

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**Key View 3:** Existing view.



**Key View 3:** Proposed view.

L S A

FIGURE 4.1.4

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**Key View 4:** Existing view.



**Key View 4:** Proposed view.

L S A

FIGURE 4.1.5

*South Shores Church Master Plan*  
Key View 4 - View from Sea Island Drive

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**Key View 5:** Existing view.



**Key View 5:** Proposed view.

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FIGURE 4.1.6

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**Key View 6:** Existing view.



**Key View 6:** Proposed view.

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FIGURE 4.17

*South Shores Church Master Plan*  
Key View 6 - View from Monarch Beach Golf Links

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**Key View 7:** Existing view.



**Key View 7:** Proposed view.

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FIGURE 4.1.8

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**PLANT LEGEND**

TREES	BOTANICAL NAME	COMMON NAME	SIZE	WULCOL	QUANTITY
	PLATANUS RACEMOSA (DECIDUOUS CANOPY TREE)	CALIFORNIA SYCAMORE	24" BOX	LOW	11
	LAGERSTROEMIA FAURIEI 'MUSKOGEE' (DECIDUOUS FLOWERING ACCENT TREE)	GRAPE MYRTLE	24" BOX	MED	28
	MAGNOLIA GRANDIFLORA 'LITTLE GEM' (EVERGREEN FLOWERING ACCENT TREE)	LITTLE GEM MAGNOLIA	36" BOX	MED	2
	MELALEUCA QUINQUENERVIA (VERTICAL EVERGREEN TREE)	CAJUPUT TREE	24" BOX	LOW	9
	OLEA EUROPAEA 'SWAN HILL' (ACCENT EVERGREEN TREE)	SWAN HILL NON FRUITING OLIVE	48" BOX	LOW	3
	PHOENIX DACTYLIFERA (VERTICAL ACCENT PALM)	DATE PALM	20" B.T.H.	LOW	6
	RHUS LANCEA (EVERGREEN SHADE TREE)	AFRICAN SUMAC	24" BOX	LOW	13
	EXISTING TREE TO REMAIN				
	EXISTING QUEEN PALM TO REMAIN - PROTECT IN PLACE				

SHRUBS	BOTANICAL	COMMON	SIZE	SPACING	WULCOLS
	ARBUTUS UNEDO	STRAWBERRY TREE	15 GAL.	VARIES	LOW
	BUXUS JAPONICA 'GREEN BEAUTY'	JAPANESE BOXWOOD	5 GAL.	30" O.C.	MED
	CALLISTEMON 'LITTLE JOHN'	DWARF BOTTLEBRUSH	5 GAL.	3" O.C.	LOW
	ELEAGNUS PUNGENS	SILVERBERRY	5 GAL.	4" O.C.	LOW
	ISOMERIS ARBorea	BLADDERPOD	5 GAL.	VARIES	LOW
	ESCALLONIA FRADESII	ESCALLONIA	5 GAL.	3" O.C.	MED
	LIQUIDAMBAR JAPONICUM	WAX LEAF PRIVET	5 GAL.	3" O.C.	MED
	NANDINA DOMESTICA SPECIES	HEAVENLY BAMBOO	5 GAL.	3" O.C.	LOW
	PITTOSPORUM TOBIRA WHEELERS DWARF	WHEELERS DWARF	5 GAL.	3" O.C.	MED
	RAPHIOLEPIS INDICA 'CLARA'	INDIAN HAWTHORN	5 GAL.	3" O.C.	MED
	ROSMARINUS OFFICINALIS 'TUSCAN BLUE'	ROSEMARY	5 GAL.	3" O.C.	LOW
	WESTRINGIA FRUTICOSA	COAST ROSEMARY	5 GAL.	4" O.C.	LOW
	XYLOSMA CONGESTUM 'COMPACTUM'	DWARF SHINY XYLOSMA	5 GAL.	VARIES	LOW

ACCENT SHRUBS	BOTANICAL	COMMON	SIZE	SPACING	WULCOLS
	ANIGONANTHOS FLAVIDUS 'GOLD VELVET'	KANGAROO PAW	5 GAL.	3" O.C.	LOW
	PENNISETUM 'FAIRY TAILS'	FAIRY TAILS FOUNTAIN GRASS	1 GAL.	3" O.C.	LOW
	BOUGAINVILLEA SPECTABILIS	BOUGAINVILLEA	5 GAL.	4" O.C.	LOW
	PHILODENDRON SELLOUM	PHILODENDRON	5 GAL.	4" O.C.	MED
	PHOCRUM TENAX 'SUNDOWNER'	NEW ZEALAND FLAX	5 GAL.	4" O.C.	LOW
	ROSA SPECIES	ICEBERG FLORIBUNDA ROSE	5 GAL.	3" O.C.	MED
	STRELITZIA REGINAE	BIRD OF PARADISE	5 GAL.	VARIES	MED

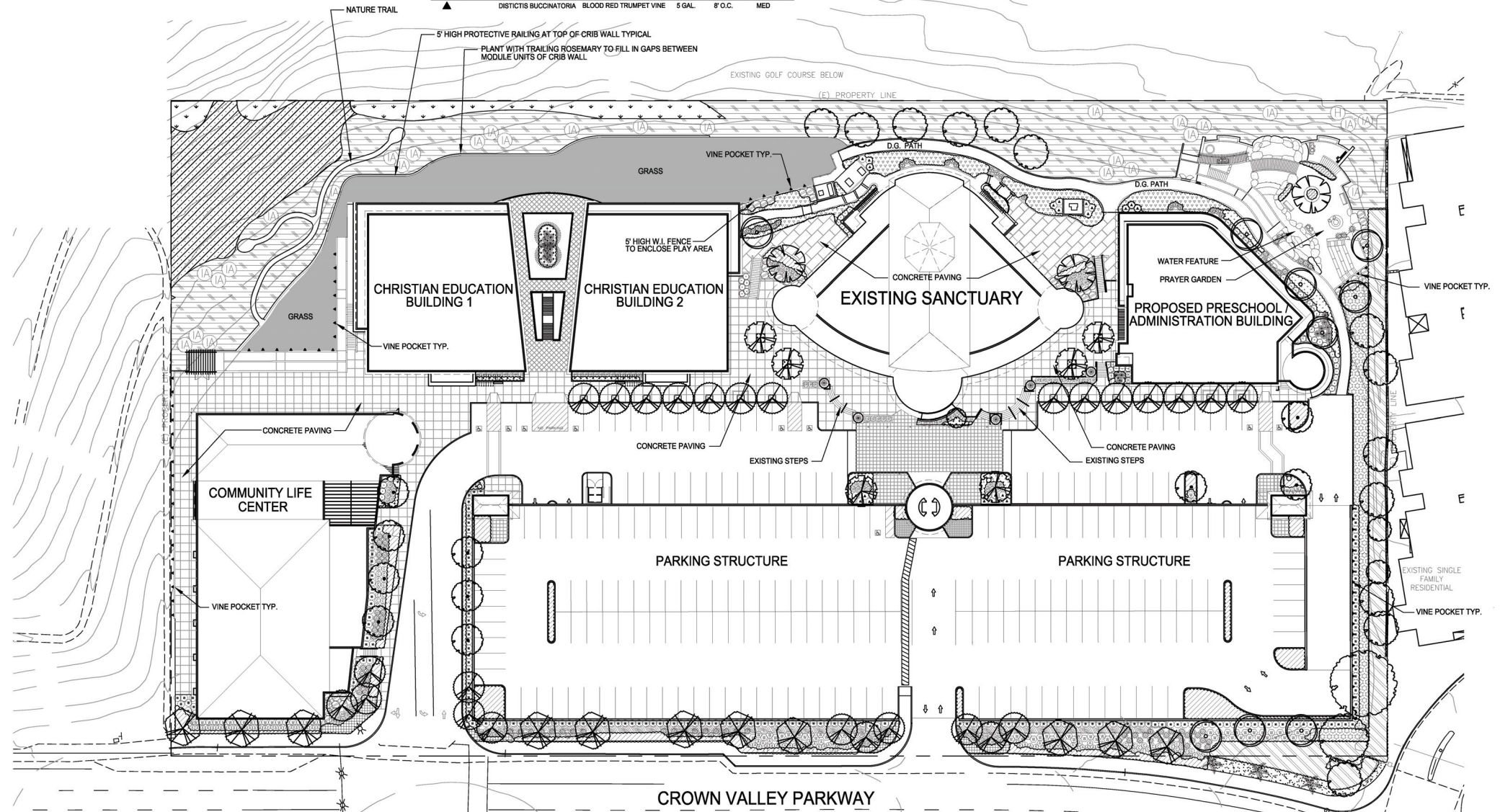
VINE - AT RETAINING & GARAGE WALL ALONG SOUTH	BOTANICAL	COMMON	SIZE	SPACING	WULCOLS
	DISTICTIS BUCCINATORIA	BLOOD RED TRUMPET VINE	5 GAL.	8" O.C.	MED

GROUND COVER PALLETTE	BOTANICAL	COMMON	SIZE	SPACING	WULCOLS
	ACACIA 'DESERT CARPET'	N.C.N.	1 GAL.	TRIANGULAR SPACE 48" O.C.	LOW
	AGAPANTHUS AFRICANUS	LILY OF THE NILE	1 GAL.	TRIANGULAR SPACE 24" O.C.	MED
	CARISSA MACROCARPA 'GREEN CARPET'	GREEN CARPET NATAL PLUM	1 GAL.	TRIANGULAR SPACE 24" O.C.	MED
	HEMEROCALLIS HYBRID	DAYLILY	1 GAL.	TRIANGULAR SPACE 24" O.C.	MED
	LIRIOPE MUSCARI	GIANT LILY TURF	1 GAL.	TRIANGULAR SPACE 24" O.C.	MED
	TRACHELOSPERMIUM JASMINOIDES	STAR JASMINE	1 GAL.	TRIANGULAR SPACE 18" O.C.	MED
	CARISSA MACROCARPA 'GREEN CARPET'	GREEN CARPET NATAL PLUM	1 GAL.	TRIANGULAR SPACE 24" O.C.	MED
	TRACHELOSPERMIUM JASMINOIDES	STAR JASMINE	1 GAL.	TRIANGULAR SPACE 18" O.C.	MED
	LANTANA 'NEW GOLD'	NEW GOLD LANTANA	1 GAL.	TRIANGULAR SPACE 36" O.C.	LOW
	MYOPORUM PARVIFOLIUM 'PUTAH CREEK'	PUTAH CREEK MYOPORUM	1 GAL.	TRIANGULAR SPACE 36" O.C.	LOW
	ROSMARINUS O. 'PROSTRATUS'	ROSEMARY	1 GAL.	TRIANGULAR SPACE 36" O.C.	LOW
	'HUNTINGTON CARPET'				
	ROSA SPECIES 'FLOWER CARPET PINK'	ROSE	2 GAL.	TRIANGULAR SPACE 36" O.C.	MED
	ARCTOSTAPHYLOS 'PACIFIC MIST'	PACIFIC MIST MANZANITA	1 GAL.	TRIANGULAR SPACE 6" O.C.	LOW
	CEANOTHUS GRISEUS HORIZONTALIS	CARMEL CREEPER	1 GAL.	TRIANGULAR SPACE 6" O.C.	LOW
	'YANKEE POINT'				
	GRINDELIA STRICTA	GUM PLANT	1 GAL.	TRIANGULAR SPACE 6" O.C.	LOW
	CAREX TUMULICOLA (BIO SWALE)	BERKLEY SEDGE	2" LINERS	TRIANGULAR SPACE 18" O.C.	MED
	GN-1 HYBRID BERMUDA SOD				

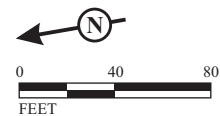
**SHREDDED MULCH NOTE**  
ALL PLANTER AREAS TO RECEIVE A 2" LAYER OF SHREDDED COVER MULCH AVAILABLE FROM EARTHWORKS (909) 270-0088

EXISTING LANDSCAPE	SYMBOL	DESCRIPTION
		EXISTING CHAPARRAL TO REMAIN
		COASTAL SAGE SCRUB / CHAPARRAL TO REMAIN
		EXISTING ORNAMENTAL LANDSCAPE TO REMAIN
		EXISTING FESCUE GRASS TO REMAIN

NOTE: THE LANDSCAPE DESIGN WILL COMPLY WITH CHAPTER 9.55 OF THE ZONING ORDINANCE



LSA



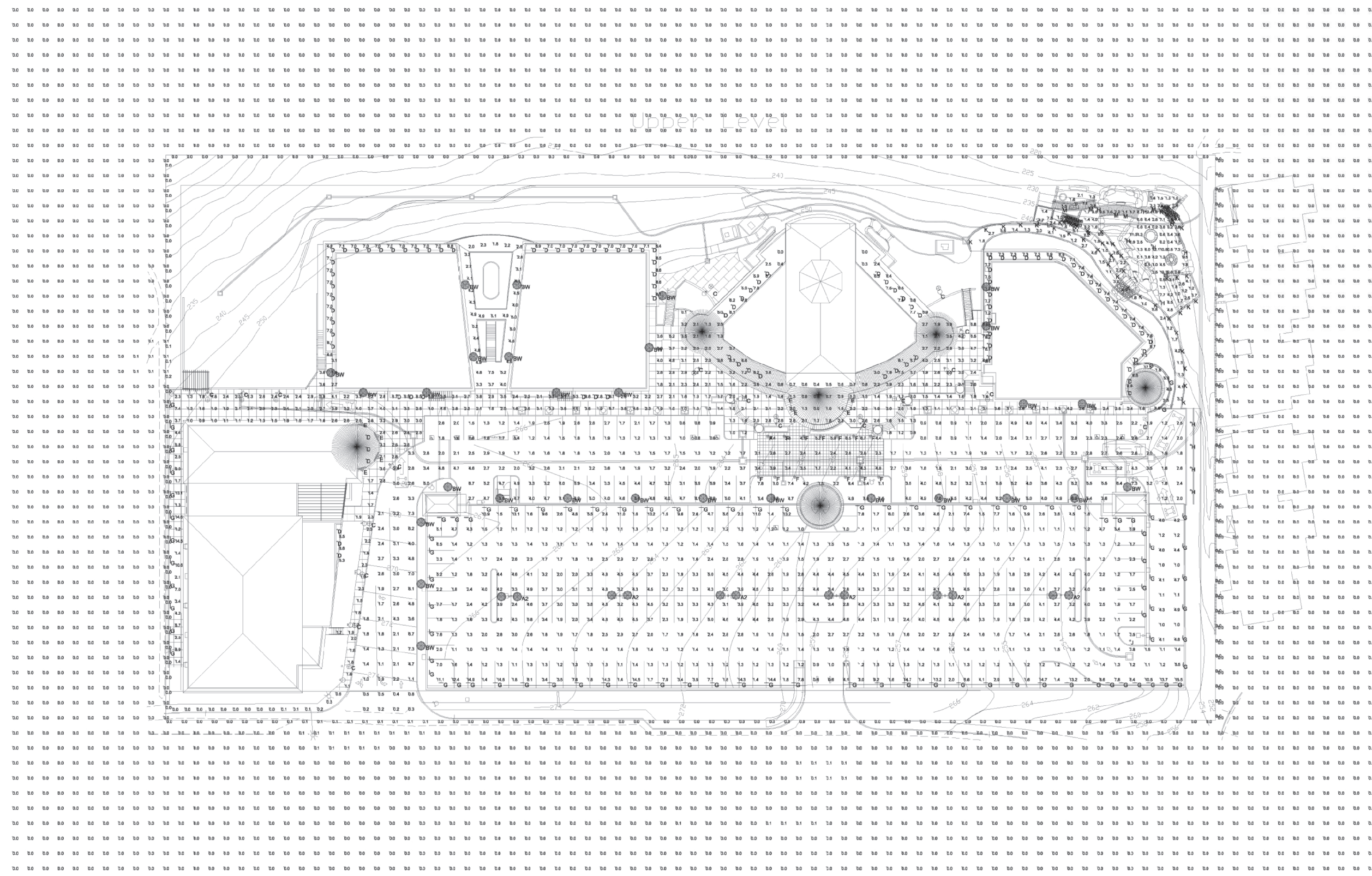
SOURCE: Matlock Associates

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FIGURE 4.1.9

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LSA



FIGURE 4.1.10

South Shores Church Master Plan  
 Conceptual Lighting Plan

SOURCE: Matlock Associates

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## 4.2 AIR QUALITY

### 4.2.1 Introduction

This section provides a discussion of existing air quality, evaluates potential air quality impacts associated with the South Shores Church Master Plan (proposed project), and identifies mitigation measures recommended for potentially significant adverse impacts. This section summarizes information provided in the *Air Quality Analysis for South Shores Church Master Plan* (LSA Associates, Inc. [LSA], August 2014). The *Air Quality Analysis* is included in Appendix B of this Draft Environmental Impact Report (EIR).

### 4.2.2 Methodology

Evaluation of air quality impacts associated with the proposed project included the following:

- Determination of the short-term construction air quality impacts
- Determination of the long-term air quality impacts resulting from emissions from vehicular traffic, and stationary sources on off-site and on-site air quality-sensitive uses
- Determination of mitigation measures required to reduce short- and long-term air quality impacts from all sources

The evaluation was prepared in conformance with appropriate standards, utilizing procedures and methodologies in the *SCAQMD California Environmental Quality Act (CEQA) Air Quality Handbook* (SCAQMD 1993) and associated updates. However, the air quality models identified in the *CEQA Air Quality Handbook* are outdated; therefore, the current model, California Emissions Estimator Model (CalEEMod) Version 2013.2.2, was used to quantify the project-related mobile and stationary source emissions. In addition, air quality data posted on the California Air Resources Board (ARB) and United States Environmental Protection Agency (EPA) websites are included to document the local air quality environment.

### 4.2.3 Existing Environmental Setting

The project site is located in the City of Dana Point (City), which is part of the South Coast Air Basin (Basin) and is under the jurisdiction of the South Coast Air Quality Management District (SCAQMD).

**Climate/Meteorology.** Air quality in the planning area is not only affected by various emission sources (mobile and industry, etc.), but also by atmospheric conditions such as wind speed, wind direction, temperature, and rainfall, etc. The combination of topography, low mixing height, abundant sunshine, and emissions from the second largest urban area in the United States gives the Basin the worst air pollution problem in the nation.

The annual average temperature varies little throughout the Basin, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The

climatological station closest to the project site is the Laguna Beach station, which provides sufficient data for average temperatures in the project area. The Laguna Beach station<sup>1</sup> shows that the monthly average maximum temperature recorded from March 1928 to March 2013 ranged from 65.1°F in January to 78.1°F in August, with an annual average maximum of 71.2°F. The monthly average minimum temperature recorded at this station ranged from 43.0°F in January to 59.6°F in August, with an annual average minimum of 51.0°F. January is typically the coldest month, and August is typically the warmest month in this area of the Basin.

The majority of annual rainfall in the Basin occurs between November and April. Summer rainfall is minimal and is generally limited to scattered thundershowers in coastal regions and slightly heavier showers in the eastern portion of the Basin and along the coastal side of the mountains. The Laguna Beach station monitored precipitation from March 1928 to March 2013. Average monthly rainfall during that period varied from 2.77 inches in February to 0.47 inch or less from May to October, with an annual total of 12.52 inches. Patterns in monthly and yearly rainfall totals are unpredictable due to fluctuations in the weather.

The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them relatively near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by midmorning.

Winds in the vicinity of the project site blow predominantly from the south-southwest, with relatively low velocities. Wind speeds in the vicinity of the project site average about 5 miles per hour (mph). Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly on shore into the counties of Riverside and San Bernardino. In the winter, the greatest pollution problems are carbon monoxide (CO) and nitrogen oxides (NO<sub>x</sub>) because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and NO<sub>x</sub> to form photochemical smog.

**Air Pollution Constituents and Attainment Status.** The ARB coordinates and oversees both State and federal air pollution control programs in California. The ARB oversees activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in

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<sup>1</sup> Western Regional Climate Center. Website: [www.wrcc.dri.edu](http://www.wrcc.dri.edu).

conjunction with the EPA and local air districts. The ARB has divided the State into 15 air basins based on meteorological and topographical factors of air pollution. Data collected at these stations are used by the ARB and EPA to classify air basins as attainment, nonattainment, nonattainment-transitional, or unclassified, based on air quality data for the most recent 3 calendar years compared with the Ambient Air Quality Standards (AAQS). Nonattainment areas are imposed with additional restrictions as required by the EPA. The air quality data are also used to monitor progress in attaining air quality standards.

Table 4.2.A lists the attainment status for the criteria pollutants in the Basin.

**Table 4.2.A: Attainment Status of Criteria Pollutants in the South Coast Air Basin**

Pollutant	State	Federal
O <sub>3</sub> 1-hour	Nonattainment	N/A
O <sub>3</sub> 8-hour	Nonattainment	Extreme Nonattainment
PM <sub>10</sub>	Nonattainment	Attainment/Maintenance
PM <sub>2.5</sub>	Nonattainment	Nonattainment
CO	Attainment	Attainment/Maintenance
NO <sub>2</sub>	Nonattainment	Attainment/Maintenance
SO <sub>2</sub>	Attainment	Attainment
Lead	Attainment <sup>1</sup>	Attainment <sup>1</sup>
All others	Attainment/Unclassified	Attainment/Unclassified

Source: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

<sup>1</sup> Except in Los Angeles County.

CO = carbon monoxide

N/A = not applicable

NO<sub>2</sub> = nitrogen dioxide

O<sub>3</sub> = ozone

PM<sub>10</sub> = particulate matter less than 10 microns in diameter

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter

SO<sub>2</sub> = sulfur dioxide

**Ozone.** O<sub>3</sub> (ozone) is formed by photochemical reactions between oxides of nitrogen and reactive organic gases (ROGs) rather than being directly emitted. Ozone is a pungent, colorless gas typical of Southern California smog. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, the elderly, and young children. Ozone levels peak during summer and early fall. The entire Basin is designated as a nonattainment area for the State 1-hour and 8-hour ozone standards. The EPA has officially designated the status for most of the Basin regarding the 8-hour O<sub>3</sub> standard as “Extreme,” which means the Basin has until 2024 to attain the federal 8-hour O<sub>3</sub> standard.

**Particulate Matter.** Particulate matter (PM) is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles (PM<sub>10</sub>) derive from a variety of sources, including windblown dust and grinding operations. Fuel combustion and resultant exhaust from power plants and diesel buses and trucks are primarily responsible for fine particle (PM<sub>2.5</sub>) levels. Fine particles can also be formed in the atmosphere through chemical reactions. PM<sub>10</sub> can accumulate in the respiratory system and aggravate health problems such as asthma. The EPA’s scientific review concluded that PM<sub>2.5</sub>, which penetrate deeply into the lungs, are more likely than coarse particles to contribute to the health effects listed in a number of recently

published community epidemiological studies at concentrations that extend well below those allowed by the current PM<sub>10</sub> standards. These health effects include premature death and increased hospital admissions and emergency room visits (primarily the elderly and individuals with cardiopulmonary disease); increased respiratory symptoms and disease (children and individuals with cardiopulmonary disease such as asthma); decreased lung functions (particularly in children and individuals with asthma); and alterations in lung tissue and structure and in respiratory tract defense mechanisms. The Basin is designated nonattainment for the federal and State PM<sub>2.5</sub> standards and State PM<sub>10</sub> standard, and attainment/maintenance for the federal PM<sub>10</sub> standard.

**Carbon Monoxide.** CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless odorless gas that can cause dizziness, fatigue, and impairment to central nervous system functions. The entire Basin is in attainment for the State standards for CO. The Basin is designated as an “Attainment/Maintenance” area under the federal CO standards.

**Nitrogen Oxides.** Nitrogen dioxide (NO<sub>2</sub>), a reddish-brown gas, and nitric oxide (NO), a colorless odorless gas, are formed from fuel combustion under high temperature or pressure. These compounds are referred to as nitrogen oxides, or NO<sub>x</sub>. NO<sub>x</sub> is a primary component of the photochemical smog reaction. It also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition (i.e., acid rain). NO<sub>2</sub> decreases lung function and may reduce resistance to infection. The entire Basin is designated as nonattainment for the State NO<sub>2</sub> standard and as an “Attainment/Maintenance” area under the federal NO<sub>2</sub> standard.

**Sulfur Dioxide.** Sulfur dioxide (SO<sub>2</sub>) is a colorless irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO<sub>2</sub> levels. SO<sub>2</sub> irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight. The entire Basin is in attainment for both federal and State SO<sub>2</sub> standards.

**Lead.** Lead is found in old paints and coatings, plumbing, and a variety of other materials. Once in the blood stream, lead can cause damage to the brain, nervous system, and other body systems. Children are highly susceptible to the effects of lead. The Basin is in attainment with both federal and State lead standards, with the exception of the Los Angeles County portion of the Basin, which was re-designated as nonattainment for the State and federal standards for lead in 2010.

**Volatile Organic Compounds.** Volatile organic compounds (VOCs; also known as ROGs and reactive organic compounds [ROCs]) are formed from combustion of fuels and evaporation of organic solvents. VOCs are not defined criteria pollutants, however because, VOCs accumulate in the atmosphere more quickly during the winter when sunlight is limited and photochemical

reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

**Sulfates.** Sulfates occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to SO<sub>2</sub> during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO<sub>2</sub> to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features. The entire Basin is in attainment for the State standard for sulfates.

**Hydrogen Sulfide.** Hydrogen sulfide (H<sub>2</sub>S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas and can be emitted as the result of geothermal energy exploitation. In 1984, an ARB committee concluded that the ambient standard for H<sub>2</sub>S is adequate to protect public health and to significantly reduce odor annoyance. The entire Basin is unclassified for the State standard for H<sub>2</sub>S.

**Visibility-Reducing Particles.** Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt. The statewide standard is intended to limit the frequency and severity of visibility impairment due to regional haze. The entire Basin is unclassified for the State standard for visibility-reducing particles.

**Health Effects.** Table 4.2.B lists the primary health effects and sources of common air pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these health effects will not occur unless the standards are exceeded by a large margin, or for a prolonged period of time. State AAQS are more stringent than federal AAQS. Among the pollutants, ozone and particulate matter (PM<sub>2.5</sub> and PM<sub>10</sub>) are considered regional pollutants, while the other pollutants have more localized effects.

**Regional Air Quality.** Both the State of California and the federal government have established health-based AAQS for the criteria air pollutants, described previously. As previously discussed, areas that meet AAQSs are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

Over the years, the air quality in the Basin has improved significantly due to comprehensive control strategies implemented to reduce pollution from mobile and stationary sources. For example, the total number of days on which the Basin experiences high ozone levels has decreased dramatically over the last two decades. The maximum 8-hour ozone levels measured

**Table 4.2.B: Summary of Health Effects of the Major Criteria Air Pollutants**

<b>Pollutant</b>	<b>Health Effects</b>	<b>Examples of Sources</b>
Particulate matter (PM <sub>10</sub> : less than or equal to 10 microns)	Increased respiratory disease Lung damage Premature death	Cars and trucks, especially diesels Fireplaces, wood stoves Windblown dust from roadways, agriculture, and construction
Ozone (O <sub>3</sub> )	Breathing difficulties Lung damage	Formed by chemical reactions of air pollutants in the presence of sunlight; common sources are motor vehicles, industries, and consumer products
Carbon monoxide (CO)	Chest pain in heart patients Headaches, nausea Reduced mental alertness Death at very high levels	Any source that burns fuel, such as cars, trucks, construction and farming equipment, and residential heaters and stoves
Nitrogen dioxide (NO <sub>2</sub> )	Lung damage	See carbon monoxide sources
Toxic air contaminants	Cancer Chronic eye, lung, or skin irritation Neurological and reproductive disorders	Cars and trucks, especially diesels Industrial sources such as chrome platers Neighborhood businesses such as dry cleaners and service stations Building materials and products

Source: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

in the Basin were well above 200 parts per billion (ppb) in the early 1990s, and now are less than 140 ppb. The number of days in which the Basin exceeds the federal 1-hour ozone standard has continually declined over the years. Both PM<sub>10</sub> and PM<sub>2.5</sub> levels have improved dramatically over the past two decades. Annual average PM<sub>10</sub> concentrations have been cut in half since 1990, and likewise, annual average PM<sub>2.5</sub> concentrations have been cut in half since measurement began in 1999. The Basin has met the PM<sub>10</sub> standards at all stations and a request for re-designation to attainment is pending with EPA. In 2011, both the annual PM<sub>2.5</sub> standard and the 24-hour PM<sub>2.5</sub> standard were exceeded at only one air monitoring station, Mira Loma, in northwestern Riverside County. In 2011, the Basin did not exceed the standards for CO, NO<sub>2</sub>, or SO<sub>2</sub>.<sup>1</sup>

Although exposure to pollution has decreased substantially in the Basin through several decades of implementing pollution controls, increases in the population over that time have made further emissions reductions more difficult. Many sources, such as automobiles and stationary sources have been significantly controlled. However, increase in the number of sources, particularly those growing proportionally to population, can offset the potential air quality benefits of past and existing regulations. The net result is that unless additional steps are taken to further control air pollution, growth itself may begin to reverse the gains of the past decades.

**Local Air Quality.** The SCAQMD, together with the ARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the site is the Mission Viejo station, which monitors most air pollutant data, except NO<sub>2</sub> and SO<sub>2</sub>, which were obtained

<sup>1</sup> South Coast Air Quality Management District, 2012 Air Quality Management Plan, Executive Summary.



from the Costa Mesa station. The air quality trends from these two stations are used to represent the ambient air quality in the vicinity of the project site. The pollutants monitored are CO, O<sub>3</sub>, PM<sub>10</sub>, PM<sub>2.5</sub>, NO<sub>2</sub>, and SO<sub>2</sub>.<sup>1</sup>

The ambient air quality data in Table 4.2.C show that NO<sub>2</sub>, SO<sub>2</sub>, 24-hour PM<sub>10</sub>, and CO levels are below the applicable State and federal standards. The State 1-hour O<sub>3</sub> standard was exceeded 0 to 2 times per year, in the past 3 years. The federal 8-hour O<sub>3</sub> standard was exceeded 1 to 2 days per year in the past 3 years, and the State 8-hour O<sub>3</sub> standard was exceeded 2 to 6 times per year in the past 3 years. The federal 24-hour PM<sub>2.5</sub> standard and the federal and State annual average PM<sub>2.5</sub> standards were not exceeded at this monitoring station in the past 3 years. The State 24-hour and annual average PM<sub>10</sub> standards were also not exceeded at this monitoring station in the past 3 years.

#### **4.2.4 Regulatory Setting**

##### **Federal Policies and Regulations.**

Pursuant to the federal Clean Air Act (CAA) of 1970, the EPA established national ambient air quality standards (NAAQS). The NAAQS were established for six major pollutants, termed “criteria” pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established AAQS, or criteria, for outdoor concentrations in order to protect public health. The NAAQS are shown in Table 4.2.D.

Data collected at permanent monitoring stations are used by the EPA to classify regions as “attainment” or “nonattainment,” depending on whether the regions met the requirements stated in the primary NAAQS. Nonattainment areas are imposed with additional restrictions as required by the EPA.

In an effort to help federal agencies ensure the integrity of their environmental reviews and promote sound governmental decision making, the Council on Environmental Quality (CEQ) issued final guidance on the “Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact” on January 14, 2011. This guidance was developed as part of CEQ’s effort to modernize and reinvigorate federal agency implementation of the National Environmental Policy Act (NEPA).

The EPA has designated the Southern California Association of Governments (SCAG) as the Metropolitan Planning Organization (MPO) responsible for ensuring compliance with the requirements of the CAA for the Basin.

In April 2003, the EPA was cleared by the White House Office of Management and Budget (OMB) to implement the 8-hour ground-level ozone standard. The EPA issued the proposed rule implementing the 8-hour ozone standard in April 2003. The EPA completed final 8-hour nonattainment status on April 15, 2004. The EPA revoked the 1-hour ozone standard on June 15, 2005, and lowered the 8-hour O<sub>3</sub> standard from 0.08 parts per million (ppm) to 0.075 ppm on April 1, 2008.

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<sup>1</sup> Environmental Protection Agency (EPA) and California Air Resources Board (ARB) Websites. Air quality data, 2010–2012.

**Table 4.2.C: Ambient Air Quality Monitored in the Project Vicinity**

Pollutant	Standard	2010	2011	2012
<b>Carbon Monoxide (CO) – 1-hour CO levels taken from EPA Website for Orange County Area</b>				
Maximum 1-hour concentration (ppm)		3.2	3.4	3.1
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		0.90	0.95	0.79
Number of days exceeded:	State: ≥ 9.0 ppm	0	0	0
	Federal: ≥ 9 ppm	0	0	0
<b>Ozone (O<sub>3</sub>) – taken from Mission Viejo Station</b>				
Maximum 1-hour concentration (ppm)		0.117	0.094	0.096
Number of days exceeded:	State: > 0.09 ppm	2	0	2
Maximum 8-hour concentration (ppm)		0.082	0.083	0.078
Number of days exceeded:	State: > 0.07 ppm	2	5	6
	Federal: > 0.075 ppm	2 <sup>1</sup>	2	1
<b>Coarse Particulates (PM<sub>10</sub>) – taken from Mission Viejo Station</b>				
Maximum 24-hour concentration (µg/m <sup>3</sup> )		34.0	48.0	37.0
Number of days exceeded:	State: > 50 µg/m <sup>3</sup>	0	0	0
	Federal: > 150 µg/m <sup>3</sup>	0	0	0
Annual arithmetic average concentration (µg/m <sup>3</sup> )		ND	18.8	17.0
Exceeded for the year:	State: > 20 µg/m <sup>3</sup>	ND	No	No
<b>Fine Particulates (PM<sub>2.5</sub>) – taken from Mission Viejo Station</b>				
Maximum 24-hour concentration (µg/m <sup>3</sup> )		19.9	33.4	27.6
Number of days exceeded:	Federal: > 35 µg/m <sup>3</sup>	0	0	0
Annual arithmetic average concentration (µg/m <sup>3</sup> )		7.9	8.5	7.9
Exceeded for the year:	State: > 12 µg/m <sup>3</sup>	No	No	No
	Federal: > 15 µg/m <sup>3</sup>	No	No	No
<b>Nitrogen Dioxide (NO<sub>2</sub>) – taken from Costa Mesa Station</b>				
Maximum 1-hour concentration (ppm)		0.0700	0.0605	0.0744
Number of days exceeded:	State: > 0.18 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.011	ND	ND
Exceeded for the year:	State: > 0.030 ppm	No	ND	ND
	Federal: > 0.053 ppm	No	ND	ND
<b>Sulfur Dioxide (SO<sub>2</sub>) – taken from Costa Mesa Station</b>				
Maximum 24-hour concentration (ppm)		0.002	ND	ND
Number of days exceeded:	State: > 0.04 ppm	0	ND	ND
	Federal: > 0.14 ppm	0	ND	ND
Annual arithmetic average concentration (ppm)		0	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	0	ND	ND

Sources: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

<sup>1</sup> The exceedances of the federal 8-hour O<sub>3</sub> standard are based on the old 0.08 ppm standard. In April 2008, the EPA revised the standard to 0.075 ppm.

ARB = California Air Resources Board

EPA = United States Environmental Protection Agency

µg/m<sup>3</sup> = micrograms per cubic meter

ND = no data available

PM<sub>10</sub> = particulate matter less than 10 microns in size

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

ppm = parts per million

**Table 4.2.D: Ambient Air Quality Standards**

Pollutant	Averaging Time	California Standards <sup>1</sup>		Federal Standards <sup>2</sup>			
		Concentration <sup>3</sup>	Method <sup>4</sup>	Primary <sup>3,5</sup>	Secondary <sup>3,6</sup>	Method <sup>7</sup>	
Ozone (O <sub>3</sub> )	1-Hour	0.09 ppm (180 µg/m <sup>3</sup> )	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry	
	8-Hour	0.070 ppm (137 µg/m <sup>3</sup> )		0.075 ppm (147 µg/m <sup>3</sup> )			
Respirable Particulate Matter (PM <sub>10</sub> ) <sup>8</sup>	24-Hour	50 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	150 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	20 µg/m <sup>3</sup>		--			
Fine Particulate Matter (PM <sub>2.5</sub> ) <sup>8</sup>	24-Hour	No Separate State Standard		35 µg/m <sup>3</sup>	Same as Primary Standard	Inertial Separation and Gravimetric Analysis	
	Annual Arithmetic Mean	12 µg/m <sup>3</sup>	Gravimetric or Beta Attenuation	12.0 µg/m <sup>3</sup>			15 µg/m <sup>3</sup>
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m <sup>3</sup> )	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m <sup>3</sup> )	None	Non-Dispersive Infrared Photometry (NDIR)	
	1-Hour	20 ppm (23 mg/m <sup>3</sup> )		35 ppm (40 mg/m <sup>3</sup> )			
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m <sup>3</sup> )		—			—
Nitrogen Dioxide (NO <sub>2</sub> ) <sup>9</sup>	Annual Arithmetic Mean	0.030 ppm (57 µg/m <sup>3</sup> )	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m <sup>3</sup> )	Same as Primary Standard	Gas Phase Chemiluminescence	
	1-Hour	0.18 ppm (339 µg/m <sup>3</sup> )		100 ppb (188 µg/m <sup>3</sup> )			—
Sulfur Dioxide (SO <sub>2</sub> ) <sup>10</sup>	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (for certain areas) <sup>9</sup>	—	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)	
	24-Hour	0.04 ppm (105 µg/m <sup>3</sup> )		0.14 ppm (for certain areas) <sup>9</sup>			
	3-Hour	—		—			0.5 ppm (1300 µg/m <sup>3</sup> )
	1-Hour	0.25 ppm (655 µg/m <sup>3</sup> )		75 ppb (196 µg/m <sup>3</sup> )			—
Lead <sup>11,12</sup>	30-Day Average	1.5 µg/m <sup>3</sup>	Atomic Absorption	—	—	High-Volume Sampler and Atomic Absorption	
	Calendar Quarter	—		1.5 µg/m <sup>3</sup>			
	Rolling 3-Month Average <sup>11</sup>	—		0.15 µg/m <sup>3</sup>			
Visibility-Reducing Particles <sup>13</sup>	8-Hour	See footnote 13	Beta Attenuation and Transmittance through Filter Tape	<b>No Federal Standards</b>			
Sulfates	24-Hour	25 µg/m <sup>3</sup>	Ion Chromatography				
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m <sup>3</sup> )	Ultraviolet Fluorescence				
Vinyl Chloride <sup>11</sup>	24-Hour	0.01 ppm (26 µg/m <sup>3</sup> )	Gas Chromatography				

Source: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

Footnotes:

<sup>1</sup> California standards for O<sub>3</sub>; CO (except Lake Tahoe); SO<sub>2</sub> (1- and 24-hour); NO<sub>2</sub>; suspended particulate matter - PM<sub>10</sub>, PM<sub>2.5</sub> 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.

<sup>2</sup> National standards (other than O<sub>3</sub>, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O<sub>3</sub> standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM<sub>10</sub>, 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<sup>3</sup>

is equal to or less than 1. For  $PM_{2.5}$ , the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current Federal policies.

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

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

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

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

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

8 On December 14, 2012, the national annual  $PM_{2.5}$  primary standard was lowered from  $15 \mu g/m^3$  to  $12.0 \mu g/m^3$ . The existing national 24-hour  $PM_{2.5}$  standards (primary and secondary) were retained at  $35 \mu g/m^3$ , as was the annual secondary standard of  $15 \mu g/m^3$ . The existing 24-hour  $PM_{10}$  standards (primary and secondary) of  $150 \mu g/m^3$  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 standard, the 3-year average of the annual 98<sup>th</sup> percentile of the 1-hour daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

10 On June 2, 2010, the 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 99<sup>th</sup> 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 1 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 ( $1.5 \mu g/m^3$  as a quarterly average) remains in effect until 1 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 standards 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 Basins, respectively.

$^{\circ}C$  = degrees Celsius

ARB = California Air Resources Board

EPA = United States Environmental Protection Agency

$\mu g/m^3$  = micrograms per cubic meter

$mg/m^3$  = milligrams per cubic meter

ppm = parts per million

ppb = parts per billion

The EPA issued the final PM<sub>2.5</sub> implementation rule in fall 2004. The EPA lowered the 24-hour PM<sub>2.5</sub> standard from 65 to 35 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) and revoked the annual PM<sub>10</sub> standard on December 17, 2006. The EPA issued final designations for the 2006 24-hour PM<sub>2.5</sub> standard on December 12, 2008.

### **State Regulations and Policies.**

In 1967, the California Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus: the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board, in order to establish ARB. Since its formation, ARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems.

The ARB identified particulate emissions from diesel-fueled engines (diesel particulate matter [DPM]) as toxic air contaminants (TACs) in August 1998. Following the identification process, ARB was required by law to determine whether there is a need for further control. In September 2000, the ARB adopted the Diesel Risk Reduction Plan (Diesel RRP), which recommends many control measures to reduce the risks associated with DPM and to achieve the goals of 75 percent DPM reduction by 2010 and 85 percent by 2020.

**California Green Building Code.** California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2010 and became effective in January 2011. The Cal Green Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. Cal Green Code comprises Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERS I and II).

Mandatory Measures are required to be implemented on all new construction projects and to consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Cal Green Code refers to Title 24, Part 6, compliance with respect to energy efficiency; however, it encourages 15 percent energy use reduction over that required in Part 6. Voluntary Measures are optional, more stringent measures that may be used by jurisdictions that strive to enhance their commitment toward green and sustainable design and achievement of Assembly Bill (AB) 32 goals. Under TIERS I and II, all new construction projects are required to reduce energy consumption by 15 percent and 30 percent, respectively, below the baseline required under the California Energy Commission (CEC), as well as implement more stringent green measures than those required by mandatory code.

### **Local Policies and Regulations.**

There are a number of local regulations and policies related to air quality, as described below.

**Regional Air Quality Planning Framework.** The 1976 Lewis Air Quality Management Act established the SCAQMD and other air districts throughout the State. The federal CAA Amendments of 1977 required that each state adopt an implementation plan outlining pollution control measures to attain the federal standards in nonattainment areas of the State.

The ARB is responsible for incorporating air quality management plans for local air basins into a State Implementation Plan (SIP) for EPA approval. Significant authority for air quality control within the local air basins has been given to local air districts that regulate stationary source emissions and develop local nonattainment plans.

**Regional Air Quality Management Plan.** The SCAQMD and the SCAG are responsible for formulating and implementing the Air Quality Management Plan (AQMP) for the Basin. The 2012 AQMP incorporated the latest scientific and technological information and planning assumptions, including the 2012 Regional Transportation Plan/Sustainable Communities Strategy and updated emission inventory methodologies for various source categories. The 2012 AQMP included the new and changing federal requirements, implementation of new technology measures, and the continued development of economically sound, flexible compliance approaches.

**City of Dana Point General Plan.** The Conservation/Open Space Element (1991) of the City's General Plan includes goals and polices related to air quality. The following goal is applicable to the proposed project:

**Goal 5:** Reduce air pollution through land use, transportation, and energy use planning.

**City of Dana Point Municipal Code.** Chapter 12.10, Mobile Source Air Pollution Reduction Program, of the City's Municipal Code establishes the Air Quality Improvement Trust Fund. The Air Quality Improvement Trust Fund is authorized to receive a portion of funds from motor vehicle registration to be expended on programs and projects aimed at reducing mobile-source emissions. As established in the City's Municipal Code, programs implemented by the City using funds utilized from the Air Quality Improvement Trust Fund shall be consistent with the California Clear Air Act of 1988, or the plan proposed pursuant to Article 5 (commencing with Section 40460) of Chapter 5.5 of Part 3 of the California Health and Safety Code.

#### 4.2.5 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines* and the City's CEQA Thresholds of Significance. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on air quality if it would:

**Threshold 4.2.1:** Conflict with or obstruct implementation of the applicable air quality plan;

**Threshold 4.2.2:** Violate any air quality standard or contribute to an existing or projected air quality violation;

- Threshold 4.2.3:** 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 releasing emissions which exceed quantitative thresholds for ozone precursors);
- Threshold 4.2.4:** Expose sensitive receptors to substantial pollutant concentrations; or
- Threshold 4.2.5:** Create objectionable odors affecting a substantial number of people.

**SCAQMD Criteria.** In addition to the federal and State AAQS, there are daily emissions thresholds for construction and operation of a proposed project in the Basin. The Basin is administered by the SCAQMD, and guidelines and emissions thresholds established by the SCAQMD in its *CEQA Air Quality Handbook*. It should be noted that the emissions thresholds were established based on the attainment status of the air basin in regard to air quality standards for specific criteria pollutants. Because the concentration standards were set at a level that protects public health with an adequate margin of safety (EPA), these emissions thresholds are regarded as conservative and would overstate an individual project's contribution to health risks.

**Regional Thresholds for Construction Emissions.** The following CEQA significance thresholds for construction emissions have been established for the Basin:

- 75 pounds per day (lbs/day) of ROC
- 100 lbs/day of NO<sub>x</sub>
- 550 lbs/day of CO
- 150 lbs/day of PM<sub>10</sub>
- 55 lbs/day of PM<sub>2.5</sub>
- 150 lbs/day of SO<sub>x</sub>

Projects in the Basin with construction-related emissions that exceed any of these emission thresholds are considered to be significant under the SCAQMD guidelines.

**Regional Thresholds for Operational Emissions.** The following CEQA significance thresholds for operational emissions have been established for the Basin:

- 55 lbs/day of ROC
- 55 lbs/day of NO<sub>x</sub>
- 550 lbs/day of CO
- 150 lbs/day of PM<sub>10</sub>
- 55 lbs/day of PM<sub>2.5</sub>
- 150 lbs/day of SO<sub>x</sub>

Projects in the Basin with operational emissions that exceed any of these emission thresholds are considered to be significant under the SCAQMD guidelines.

**Local Microscale Concentration Standards.** The significance of localized project impacts under CEQA depends on whether ambient CO levels in the vicinity of the project are above or below State and federal CO standards. If ambient levels are below the standards, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of these standards. If ambient levels already exceed a State or federal standard, project emissions are considered significant if they increase 1-hour CO concentrations by 1.0 ppm or more or 8-hour CO concentrations by 0.45 ppm or more. The following are applicable local emission concentration standards for CO:

- California State 1-hour CO standard of 20.0 ppm
- California State 8-hour CO standard of 9.0 ppm

**Thresholds for Localized Impacts Analysis.** The SCAQMD published its *Final Localized Significance Threshold Methodology* in June 2003, recommending that all air quality analyses include an assessment of both construction and operational impacts on the air quality of nearby sensitive receptors. Localized Significance Thresholds (LSTs) represent the maximum emissions from a project site that are not expected to result in an exceedance of the national or State AAQS, as previously shown in Table 4.2.D. LSTs are based on the ambient concentrations of that pollutant within the project Source Receptor Area (SRA) and the distance to the nearest sensitive receptor. For the proposed project, the appropriate SRA for the localized impacts analysis is the Capistrano Valley area (SRA 21).

In the case of CO and NO<sub>2</sub>, a project is considered to have a significant impact if project emissions result in an exceedance of one or more of the national or State AAQS. If ambient levels already exceed a State or federal standard, then project emissions are considered significant if they increase ambient concentrations by a measurable amount. This would apply to PM<sub>10</sub> and PM<sub>2.5</sub>, both of which are nonattainment pollutants. For these two, the significance criteria are the pollutant concentration thresholds presented in SCAQMD Rules 403 and 1301. The Rule 403 threshold of 10.4 µg/m<sup>3</sup> applies to construction emissions. The Rule 1301 threshold of 2.5 µg/m<sup>3</sup> applies to operational activities.

To avoid the need for every air quality analysis to perform air dispersion modeling, the SCAQMD performed air dispersion modeling for a range of construction sites less than or equal to 5 acres (ac) in size and created look-up tables that correlate pollutant emissions rates with project size to screen out projects that are unlikely to generate enough emissions to result in a locally significant concentration of any criteria pollutant.

For construction and operational emissions, the localized significance for a project greater than 5 ac can be determined by performing the screening-level analysis using the 5 ac LSTs before using the dispersion modeling because the screening-level analysis is more conservative, and if no exceedance of the screening-level thresholds is identified, then it is deemed that pollutant concentrations exceeding national or State AAQS will not occur. Since the total gross area for



the project site is approximately 6 ac, the LST screening thresholds for 5 ac are used in this analysis for construction emissions for a screening-level analysis first.

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. Existing residences nearest to the project site are the Monarch Bay Villas, which are located adjacent to the project site. Per the SCAQMD LST guidance, a minimum distance of 25 meters (m) (approximately 80 feet [ft] ) from the project boundary is to be used to represent sensitive receptors 25 m and closer. Using the operations LST thresholds for receptors at 25 m from a 5 ac site for this project would result in a conservative analysis. Therefore, the following emissions thresholds apply during project operations:

- Construction Localized Significance Thresholds for a 5 ac site at 80 ft
  - 197 lbs/day of NO<sub>x</sub>
  - 1,804 lbs/day of CO
  - 12 lbs/day of PM<sub>10</sub>
  - 8.0 lbs/day of PM<sub>2.5</sub>
- Operation Localized Significance Thresholds for a 5 ac site at 80 ft
  - 197 lbs/day of NO<sub>x</sub>
  - 1,804 lbs/day of CO
  - 3.0 lbs/day of PM<sub>10</sub>
  - 2.0 lbs/day of PM<sub>2.5</sub>

#### 4.2.6 Project Impacts

##### **Threshold 4.2.1: Conflict with or obstruct implementation of the applicable air quality plan**

**Less than Significant Impact.** An Air Quality Management Plan (AQMP) describes air pollution control strategies to be taken by a city, county, or region classified as a nonattainment area. The main purpose of an AQMP is to bring the area into compliance with federal and State air quality standards. CEQA requires that certain projects be analyzed for consistency with the AQMP. A consistency determination plays an essential role in local agency project review by linking local planning and individual projects to the air quality plans. A consistency determination fulfills the CEQA goal of fully informing local agency decision-makers of the environmental costs of the project under consideration at a stage early enough to ensure that air quality concerns are addressed. Only new or amended General Plan elements, Specific Plans, and significantly unique projects need to undergo a consistency review due to the air quality plan strategy being based on projections from local General Plans.

The proposed project is consistent with the City's General Plan, which is consistent with the SCAG RCP Guidelines and the SCAQMD AQMP. Pursuant to the methodology provided in Chapter 12 of the 1993 SCAQMD *CEQA Air Quality Handbook*, consistency with the Basin 2012 AQMP is affirmed when a project (1) does not increase the frequency or severity of an air quality standards

violation or cause a new violation; and (2) is consistent with the growth assumptions in the AQMP. A consistency review of the proposed project is provided below.

The proposed project would result in short-term construction and long-term pollutant emissions that are less than the CEQA significance emissions thresholds established by the SCAQMD, as demonstrated below; therefore, the proposed project would not result in an increase in the frequency or severity of any air quality standards violation, and would not cause a new air quality standard violation.

The *CEQA Air Quality Handbook* indicates that consistency with AQMP growth assumptions must be analyzed for new or amended General Plan Elements, Specific Plans, and significant projects. Significant projects include airports, electrical generating facilities, petroleum and gas refineries, designation of oil drilling districts, water ports, solid waste disposal sites, and offshore drilling facilities. The proposed project involves the expansion of the existing South Shores Church facilities; therefore, the proposed project would be not defined as a significant project.

Based on the consistency analysis presented above, the proposed project is consistent with the City's General Plan and the regional AQMP, and no mitigation is required.

**Threshold 4.2.2: Violate any air quality standard or contribute to an existing or projected air quality violation**

**Less than Significant Impact.**

**Construction.** Construction activities produce combustion emissions from various sources, such as demolition, grading, site preparation, utility engines, and motor vehicles transporting the construction crew. Exhaust emissions from construction activities envisioned on site would vary daily as construction activity levels change; therefore, this analysis provides the peak-day construction emissions. The use of construction equipment on site would result in localized exhaust emissions. Fugitive dust emissions are generally associated with land clearing and exposure of soils to the air and wind, as well as cut-and-fill grading operations. As shown in Table 4.2.E, construction would be completed in five phases over an estimated 10-year period; however, construction activities would not occur continuously over the 10-year period.

The most recent version of the CalEEMod model (Version 2013.2.2) was used to calculate the construction emissions, as shown in Table 4.2.F, which are a combination of the on-and off-site emissions. The emissions rates shown in Table 4.2.F are from the CalEEMod output tables listed as, "Mitigated Construction," even though the only measures that have been applied to the analysis include the required construction emissions control measures required by Standard Conditions 4.2.1 and 4.2.2 (as listed in Section 4.2.9, Standard Conditions).

**Table 4.2.E: Construction Schedule**

Phase Name	Number of Days	Notes
Phase 1A Construct Preschool/ Administration Building		13 months total
Phase 1A - Site Preparation	22	1 month
Phase 1A - Excavation	44	2 months
Phase 1A - Grading	44	2 months
Phase 1A - Building Construction	173	8 months
Phase 1A - Architectural Coating	107	Coating applied during the building construction phase
Phase 1B - Demolition	66	3 months
Phase 1B-E1 - Earthwork	65	3 months
Phase 1B-E2 - Grading	64	3 months
Phase 1C- Construct Community Life Center		1 year total
Phase 1C - Building Construction	241	12 months
Phase 1C - Architectural Coating	132	Coating applied during the building construction phase
Phase 1C - Paving	20	Paving overlaps construction
Phase 2 – Construct Christian Education Building 1		1 year total
Phase 2 – Building Construction	261	12 months
Phase 2 - Architectural Coating	154	Coating applied during the building construction phase
Phase 3 – Construct Christian Education Building 2		1 year total
Phase 3 - Building Construction	260	1 year
Phase 3 - Architectural Coating	154	Coating applied during the building construction phase
Phase 4 - Construct 1 <sup>st</sup> Half of Parking Structure	150	7 months for Phase 4
Phase 5 – Construct 2 <sup>nd</sup> Half of Parking Structure	131	7 months for Phase 5
Phase 5 - Paving	20	Paving after construction

Source: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

Note: Assumes construction occurs 5 days per week.

**Table 4.2.F: Short-Term Regional Construction Emissions**

Construction Phase	Total Regional Pollutant Emissions (lbs/day)							
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	Fugitive PM <sub>10</sub>	Exhaust PM <sub>10</sub>	Fugitive PM <sub>2.5</sub>	Exhaust PM <sub>2.5</sub>
Phase 1A - Site Preparation	0.89	8.3	7.0	0.012	0.22	0.56	0.078	0.51
Phase 1A - Excavation	0.8	7.0	6.1	0.0089	0.22	0.54	0.059	0.50
Phase 1A - Grading	1.9	18	11	0.015	0.43	1.1	0.082	1.1
Phase 1A - Building Construction	3.4	27	21	0.033	0.47	1.6	0.13	1.5
Phase 1A - Architectural Coating	52	2.4	2.0	0.0032	0.022	0.2	0.0059	0.20
Phase 1B - Demolition	2.7	26	20	0.025	0.33	1.5	0.073	1.4
Phase 1B-E1 - Earthwork	3.8	40	28	0.034	0.17	2.2	0.045	2.0
Phase 1B-E2 - Grading	4.1	45	30	0.043	2.7	2.3	1.4	2.1
Phase 1C - Building Construction	3.1	26	21	0.035	0.57	1.5	0.16	1.4
Phase 1C - Architectural Coating	42	2.2	2.0	0.0032	0.022	0.17	0.0059	0.17
Phase 1C - Paving	1.7	17	15	0.023	0.056	0.94	0.015	0.86
Phase 2 - Building Construction	2.0	17	18	0.033	0.47	0.85	0.13	0.80
Phase 2 - Architectural Coating	36	1.7	1.9	0.0032	0.022	0.11	0.0059	0.11
Phase 3 - Building Construction	1.8	16	17	0.033	0.47	0.73	0.13	0.69
Phase 3 - Architectural Coating	36	1.5	1.9	0.0032	0.022	0.094	0.0059	0.094
Phase 4 - Building Construction	1.8	15	18	0.036	0.48	0.71	0.13	0.67
Phase 5 - Building Construction	1.7	14	18	0.035	0.47	0.62	0.13	0.58
Phase 5 - Paving	1.1	10	14	0.023	0.056	0.5	0.015	0.46
Peak Daily Emissions	55	45	30	0.043	5.0		3.5	
<b>SCAQMD Thresholds</b>	<b>75</b>	<b>100</b>	<b>550</b>	<b>150</b>	<b>150</b>		<b>55</b>	
<b>Significant Emissions?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>		<b>No</b>	

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

Note: Peak daily emissions are based on a worst-case assumption that the Building Construction and Architectural Coating phases would overlap.

CO = carbon monoxide

lbs/day = pounds per day

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

PM<sub>10</sub> = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO<sub>x</sub> = sulfur oxides

VOC = volatile organic compound

NO<sub>x</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> emissions from grading operations during a peak construction day were calculated using CalEEMod (Version 2013.2.2) and are included in the emissions listed in Table 4.2.F. Impacts associated with NO<sub>x</sub> emissions during project construction and operation are evaluated further under Threshold 4.2.3. The total construction emissions listed in Table 4.2.F have incorporated feasible control measures that can be reasonably implemented to significantly reduce PM<sub>10</sub> emissions from construction. As shown in Table 4.2.F, PM<sub>2.5</sub> and PM<sub>10</sub> emissions related to site preparation and grading operations during a peak construction day are not anticipated to exceed the SCAQMD thresholds. Although no mitigation is required for these constituents, the proposed project would comply with SCAQMD standard conditions and Rule 403 (as listed in Section 4.2.9, Standard Conditions) to control fugitive dust.

As shown in Table 4.2.F, since no exceedances of any criteria pollutants are expected, no significant impacts would occur for project construction. Therefore, with implementation of the required construction emissions control measures required in Standard Conditions 4.2.1 and Standard Condition 4.2.2, air quality impacts related to construction emissions would be less than significant, and no mitigation is required.

**Operation.** Long-term air pollutant emission impacts are those associated with stationary sources and mobile sources involving any project-related changes. The proposed project would include the demolition of 23,467 square feet (sf) of existing church buildings (Chapel, Preschool, and Administration and Fellowship hall) and the construction of 70,284 sf of new development (Preschool/Administration hall, Community Life Center, two Christian Education Buildings, and a parking structure). Therefore, the proposed project would include construction of an additional 46,817 sf of new building area. The proposed project would result in net increases in both stationary- and mobile-source emissions. The stationary-source emissions would come from many sources, including the use of consumer products, landscape equipment, general energy, and solid waste. Area sources would include architectural coatings, consumer products, hearths, and landscaping. Energy sources would include natural gas consumption for heating and cooking.

Based on trip generation factors provided in the *Traffic Impact Analysis for South Shores Church Master Plan* (LSA, July 2014) (TIA), and defaults in the CalEEMod model for area and energy sources based on the land use and project location, the project's daily trips were entered in the CalEEMod model. Long-term operational emissions in pounds per day (lbs/day) associated with the proposed project, calculated with the CalEEMod model, are shown in Table 4.2.G and Table 4.2.H.

Table 4.2.G shows that operation of the proposed project would not exceed any corresponding SCAQMD daily operational emission threshold for any criteria pollutant. See Appendix A of the *Air Quality Analysis* (Appendix B of this EIR) for details of the CalEEMod analysis. Therefore, project-related long-term air quality impacts would be less than significant, and no mitigation is required.

Table 4.2.H shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. By design, the localized impacts analysis only includes on-site sources; however, the CalEEMod model outputs do not separate on-site and off-site emissions for mobile sources. For a worst-case scenario assessment, the emissions shown in Table 4.2.H include all on-site project-related stationary sources and 5 percent of the project-related new mobile sources, which is an estimate of the amount of project-related new vehicle traffic that will occur on site. Considering the total trip length included in the CalEEMod model, the 5 percent assumption is conservative.

Table 4.2.H shows that the operational emission rates would not exceed the LST for receptors at 80 ft (25 m). Therefore, the proposed operational activity would not result in a locally significant air quality impact, and no mitigation is required.

**Table 4.2.G: Regional Operational Emissions**

Source	Pollutant Emissions (lbs/day)					
	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Existing Church</b>						
Area Sources	6.4	0.00025	0.028	0	0.0001	0.0001
Energy Sources	0.025	0.23	0.19	0.0014	0.018	0.018
Mobile Sources	4.6	7	38	0.14	9.7	2.7
Total Existing Emissions	11	7.2	38	0.141	9.7	2.7
<b>Proposed Master Plan</b>						
Area Sources	6.7	0.00047	0.051	0	0.00018	0.00018
Energy Sources	0.055	0.5	0.42	0.003	0.038	0.038
Mobile Sources	6.8	10	56	0.21	15	4.1
Total Project Emissions	<b>14</b>	<b>11</b>	<b>56</b>	<b>0.21</b>	<b>15</b>	<b>4.1</b>
Net Change	<b>2.6</b>	<b>3.8</b>	<b>18</b>	<b>0.069</b>	<b>5.3</b>	<b>1.4</b>
<b>SCAQMD Thresholds</b>	<b>55</b>	<b>55</b>	<b>550</b>	<b>150</b>	<b>150</b>	<b>55</b>
<b>Significant?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

CO = carbon monoxide

lbs/day = pounds per day

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

PM<sub>10</sub> = particulate matter less than 10 microns in size

SCAQMD = South Coast Air Quality Management District

SO<sub>x</sub> = sulfur oxides

VOC = volatile organic compounds

**Table 4.2.H: Operational Localized Impacts Analysis**

Emissions Sources	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
On-site Emissions (lbs/day)	0.5	2.9	0.75	0.21
Localized Significance Thresholds	197	1,804	3.0	2.0
Significant Emissions?	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

Note: Source Receptor Area = Capistrano Valley, 5 acre LSTs, 80-foot distance for sensitive receptors, on-site traffic 5 percent of total.

CO = carbon monoxide

lbs/day = pounds per day

LST = localized significance threshold

NO<sub>x</sub> = nitrogen oxides

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

PM<sub>10</sub> = particulate matter less than 10 microns in size

**Threshold 4.2.3: 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 releasing emissions which exceed quantitative thresholds for ozone precursors)**

**Less than Significant Impact.**

**Construction.** As shown above in Table 4.2.F, daily regional construction emissions would not exceed the daily thresholds of any criteria pollutant emission thresholds established by the SCAQMD. Therefore, the proposed project would not result in significant short-term air quality impacts during construction due to exceedances of the daily thresholds of any criteria pollutant emission thresholds.

Architectural coatings contain VOCs that are similar to ROCs and are part of the O<sub>3</sub> precursors. Based on the proposed project's construction schedule, it is estimated that application of the architectural coatings for the proposed peak construction day would result in a combined peak of 55 lbs/day of VOC. Project construction would not exceed the SCAQMD VOC threshold of 75 lbs/day. Therefore, construction of the proposed project would not 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, and no mitigation is required.

**Operation.** As previously stated, long-term operational emissions associated with the proposed project were calculated based on trip generation factors from the TIA (July 2014) and defaults in the CalEEMod model for area and energy sources based on the land use and project location. See Appendix A of the *Air Quality Analysis* (Appendix B of this EIR) for details of the CalEEMod analysis. As shown above in Table 4.2.G, operation of the proposed project would not exceed any corresponding SCAQMD daily operational emission threshold for any criteria pollutant. Consequently, the proposed project has been determined to be consistent with the regional AQMP. Therefore, operation of the proposed project would not 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, and no mitigation is required.

**Threshold 4.2.4: Expose sensitive receptors to substantial pollutant concentrations**

**Less than Significant Impact.**

**Localized Construction Emissions.** Construction activities associated with the proposed project would result in air quality impacts from various sources, such as soil disturbance and equipment exhaust. Table 4.2.I lists the potential construction equipment to be used during project construction.

**Table 4.2.I: Diesel Construction Equipment Utilized by Construction Phase**

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Unit Horse-power	Load Factor
Phase 1A - Site Preparation	Tractors/Loaders/Backhoes	2	8	97	0.37
Phase 1A - Excavation	Tractors/Loaders/Backhoes	2	8	97	0.37
Phase 1A - Grading	Graders	1	8	174	0.41
	Tractors/Loaders/Backhoes	2	8	97	0.37
Phase 1A - Building Construction	Cranes	1	7	226	0.29
	Forklifts	1	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45
Phase 1A - Architectural Coating	Air Compressors	1	6	78	0.48
Phase 1B - Demolition	Concrete/Industrial Saws	1	8	81	0.73
	Tractors/Loaders/Backhoes	2	8	162	0.38
	Rubber-Tired Dozers	1	8	255	0.4
Phase 1B.E1 – Earthwork	Excavators	2	8	162	0.38
	Graders	1	8	174	0.41
	Rubber-Tired Dozers	1	8	255	0.4
	Tractors/Loaders/Backhoes	2	8	97	0.37
Phase 1B.E2 - Grading	Excavators	2	8	162	0.38
	Graders	1	8	174	0.41
	Rubber Tired Dozers	1	8	255	0.4
	Tractors/Loaders/Backhoes	2	8	97	0.37
	Bore/Drill Rigs	1	8	205	0.5
Phase 1C - Building Construction	Cranes	1	7	226	0.29
	Forklifts	2	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45
Phase 1C - Architectural Coating	Air Compressors	1	6	78	0.48
Phase 1C - Paving	Pavers	2	8	125	0.42
	Paving Equipment	2	8	130	0.36
	Rollers	2	8	80	0.38
Phase 2 - Building Construction	Cranes	1	7	226	0.29
	Forklifts	1	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45
Phase 2 - Architectural Coating	Air Compressors	1	6	78	0.48
Phase 3 - Building Construction	Cranes	1	7	226	0.29
	Forklifts	1	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45
Phase 3 - Architectural Coating	Air Compressors	1	6	78	0.48
Phase 4 - Parking Structure Construction	Cranes	1	7	226	0.29
	Forklifts	2	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45



**Table 4.2.I: Diesel Construction Equipment Utilized by Construction Phase**

Construction Phase	Off-Road Equipment Type	Off-Road Equipment Unit Amount	Hours Used per Day	Unit Horse-power	Load Factor
Phase 5 - Parking Structure Construction	Cranes	1	7	226	0.29
	Forklifts	2	8	89	0.2
	Generator Sets	1	8	84	0.74
	Tractors/Loaders/Backhoes	2	7	97	0.37
	Welders	1	8	46	0.45
Phase 5 - Paving	Pavers	2	8	125	0.42
	Paving Equipment	2	8	130	0.36
	Rollers	2	8	80	0.38

Source: *Air Quality Analysis*, LSA, Associates, Inc. (August 2014).

Sensitive receptors include residences, schools, hospitals, and similar uses that are sensitive to adverse air quality. Existing residences nearest to the project site are the Monarch Bay Villas, which are located adjacent to the project site. Per the SCAQMD LST guidance, the minimum distance to be used in an LST analysis is 25 m (approximately 80 ft). Table 4.2.J shows that the emissions of the pollutants on the peak day of construction would result in concentrations of pollutants at these nearest residences that are all below the SCAQMD thresholds of significance.

**Table 4.2.J: Construction Localized Impacts Analysis**

Emissions Sources	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
On-site Emissions	45	29	4.9	3.4
Localized Significance Thresholds	197	1,804	12	8.0
Significant Emissions?	No	No	No	No

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

Note: Source Receptor Area = Capistrano Valley, 5 acre LSTs, 80-foot distance for sensitive receptors.

CO = carbon monoxide

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

LST = localized significance threshold

PM<sub>10</sub> = particulate matter less than 10 microns in size

NO<sub>x</sub> = nitrogen oxides

Fugitive dust emissions would occur during construction of the proposed project as a result of demolition, grading, and the exposure of soils to air and wind. The SCAQMD has established a fugitive dust emissions threshold of 100 lbs/day. To mitigate fugitive dust emissions, the project would be required to comply with SCAQMD standard conditions and Rule 403, as specified in Standard Conditions 4.2.1 and 4.2.2. As shown in Table 4.2.J, fugitive dust emissions would be 4.9 lbs/day for PM<sub>10</sub> and 3.4 lbs/day for PM<sub>2.5</sub>, and would be below the SCAQMD thresholds. Therefore, with implementation of Standard Conditions 4.2.1 and 4.2.2, no significant impacts to sensitive receptors related to fugitive dust during project construction would occur.

As previously stated, CalEEMod (Version 2013.2.2) was also used to calculate construction emissions for CO and NO<sub>x</sub>. As shown in Table 4.2.J, CO and NO<sub>x</sub> emissions during construction would not exceed SCAQMD thresholds. Furthermore, these levels of CO and NO<sub>x</sub> at sensitive receptors in the vicinity of the proposed project would be equivalent to the ambient

levels of the region. Therefore, the project construction would result in less than significant air quality impacts related to CO and NO<sub>x</sub> emissions, and no mitigation is required.

**Localized Operational Emissions.** Long-term operational criteria pollutant emission impacts are those associated with stationary and mobile sources. Table 4.2.K shows the calculated emissions for the proposed operational activities compared with the appropriate LSTs. The emissions shown include all stationary sources and 5 percent of the mobile sources, which is an estimate of the amount of project-related vehicle traffic that would occur on site.

**Table 4.2.K: Operational Localized Impacts Analysis**

Emissions Sources	NO <sub>x</sub>	CO	PM <sub>10</sub>	PM <sub>2.5</sub>
On-site Emissions (lbs/day)	0.5	2.9	0.75	0.21
Localized Significance Thresholds	197	1,804	3.0	2.0
Significant Emissions?	No	No	No	No

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

Note: Source Receptor Area = Capistrano Valley, 5 acre LSTs, 80-foot distance for sensitive receptors, on-site traffic 5 percent of total.

CO = carbon monoxide

NO<sub>x</sub> = nitrogen oxides

lbs/day = pounds per day

PM<sub>2.5</sub> = particulate matter less than 2.5 microns in size

LST = localized significance threshold

PM<sub>10</sub> = particulate matter less than 10 microns in size

Table 4.2.K shows that the maximum emissions from project operation would not cause, or contribute to, an exceedance of the most stringent applicable federal or State AAQS. Therefore, operation of the proposed project would not result in a significant impact on local air quality related to CO, NO<sub>x</sub>, or other criteria pollutants and would not expose sensitive receptors to substantial pollutant concentrations, and no mitigation would be required.

**Long-Term Microscale (CO Hot-Spot Analysis).** Vehicular trips associated with the proposed project would contribute to congestion at intersections and along roadway segments in the project vicinity. Localized air quality impacts would occur when emissions from vehicular traffic increase as a result of the proposed project. The primary mobile-source pollutant of local concern is CO, which is a direct function of vehicle idling time and, thus, of traffic flow conditions. CO transport is extremely limited; under normal meteorological conditions, it disperses rapidly with distance from the source. However, under certain extreme meteorological conditions, CO concentrations near a congested roadway or intersection may reach unhealthful levels, affecting local sensitive receptors (residents, schoolchildren, the elderly, hospital patients, etc.).

Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service or with extremely high traffic volumes. In areas with high ambient background CO concentrations, modeling is recommended, to determine a project's effect on local CO levels.

An assessment of project-related impacts on localized ambient air quality requires that future ambient air quality levels be projected. Existing CO concentrations in the immediate project vicinity are not available. Ambient CO levels monitored at the Mission Viejo station, the closest station with complete monitored CO data, showed a highest recorded 1-hour concentration of 3.4 ppm (State standard is 20 ppm) and a highest 8-hour concentration of 0.95 ppm (State standard is 9 ppm) during the past 3 years.

The highest CO concentrations would normally occur during peak traffic hours; therefore, CO impacts calculated under peak traffic conditions represent a worst-case analysis. Given the extremely low level of CO concentrations in the vicinity of the project site, project-related vehicles would not be expected to result in the CO concentrations exceeding the State or federal CO standards. Because no CO hot spot would occur, there would be no project-related impacts on CO concentrations, and no mitigation is required.

**Threshold 4.2.5: Create objectionable odors affecting a substantial number of people**

**Less than Significant Impact.**

**Construction.** It is anticipated that heavy-duty equipment utilized in the vicinity of the project site during construction would periodically emit odors, primarily from the equipment exhaust. However, because construction activity would cease to occur after individual construction is completed, odors associated with heavy-duty equipment would be intermittent and would also cease to occur after construction is completed. Furthermore, no other sources of objectionable odors have been identified for the proposed project. Impacts related to objectionable odors affecting a substantial number of people are considered temporary and less than significant, and no mitigation is required.

**Operation.** The proposed project would include the demolition of 23,467 sf of existing church buildings (Chapel, Preschool, and Administration and Fellowship Hall) and the construction of 70,284 sf of new development (Preschool/Administration Hall, Community Life Center, two Christian Education buildings, and a parking structure). Therefore, the proposed project would include construction of an additional 46,817 sf of new building area. The proposed uses are not anticipated to emit any objectionable odors. Therefore, objectionable odors posing a health risk to potential on-site and existing off-site uses would not occur as a result of the proposed project. Impacts related to objectionable odors affecting a substantial number of people are considered less than significant, and no mitigation is required.

**4.2.7 Mitigation Measures**

The proposed project would not result in any significant adverse impacts related to air quality, and no mitigation is required.

#### 4.2.8 Cumulative Impacts

**Less than Significant Impact.** As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for air quality. The cumulative study area for air quality analysis is the Basin, and air quality conformance is overseen by the SCAQMD. Each project in the Basin is required to comply with SCAQMD rules and regulations and is subject to independent review by the City.

Construction of the proposed project has the potential to contribute to short-term air quality impacts. However, criteria pollutant emissions during construction of the proposed project would not exceed the SCAQMD emission thresholds for any criteria pollutants. With implementation of Standard Conditions 4.2.1 and 4.2.2, short-term air quality impacts would be reduced to a less than significant level, and no mitigation is required. Therefore, the proposed project would not result in a significant short-term cumulative impact.

Operation of the proposed project would not exceed SCAQMD's thresholds and would not contribute to long-term air quality impacts. Therefore, the proposed project's impacts related to air quality emissions, when considered in combination with the cumulative projects in the project vicinity (refer to Section 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures) would not be cumulatively significant; air quality emissions associated with the project would be incremental and would not result in cumulatively considerable impacts. In addition, the proposed project and each cumulative project would be required to comply with the SCAQMD's standard construction measures.

#### 4.2.9 Level of Significance Prior to Mitigation

The proposed project would not result in significant adverse impacts to air quality. No mitigation measures are required.

#### 4.2.10 Standard Conditions

**Standard Condition 4.2.1: South Coast Air Quality Management District (SCAQMD) Rule 403 Measures.** The proposed project would be required to implement the following SCAQMD measures:

- Apply nontoxic chemical soil stabilizers shall be applied to all inactive construction areas (previously graded areas inactive for 10 days or more) according to manufacturers' specifications.
- Active sites shall be watered at least twice daily (locations where grading is to occur will be thoroughly watered prior to earthmoving).
- All trucks hauling dirt, sand, soil, or other loose materials are to be covered or should maintain at least 2 feet of freeboard in accordance with the requirements of California Vehicle Code

(CVC) Section 23114 (freeboard means vertical space between the top of the load and the top of the trailer).

- Construction access roads shall be paved at least 30 meters (m) (100 ft) onto the site from the main road.
- Traffic speeds on all unpaved roads shall be reduced to 15 miles per hour (mph) or less.
- Recycle/reuse at least 50 percent of the construction material (including, but not limited to, soil, mulch, vegetation, concrete, lumber, metal, and cardboard).
- Use “green building materials” such as those materials that are rapidly renewable or resource-efficient, and recycled and manufactured in an environmentally friendly way, for at least 10 percent of the project, as defined on the California Department of Resources Recycling and Recovery (CalRecycle) website.

**Standard Condition 4.2.2**

**Title 24.** The proposed project would be required to comply with Title 24 of the California Code of Regulations (CCR) established by the California Energy Commission (CEC) regarding energy conservation and green building standards, including, but not limited to, green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources

**4.2.11 Level of Significance After Mitigation**

The proposed project would not result in significant adverse impacts to air quality. No mitigation measures are required.

**4.2.12 Significant Unavoidable Adverse Impacts**

Implementation of Standard Conditions 4.2.1 and 4.2.2 would reduce the proposed project’s impacts to air quality to below a level of significance. Therefore, the proposed project would not result in any significant and unavoidable adverse impacts related to air quality.

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## 4.3 BIOLOGICAL RESOURCES

### 4.3.1 Introduction

This section provides a discussion of the existing biological resources within the boundaries of the project site and provides an analysis of potential impacts related to biological resources as a result of project implementation. Where impacts are identified, mitigation measures pursuant to the California Environmental Quality Act (CEQA), the California Endangered Species Act (CESA), the Federal Endangered Species Act (FESA), and other pertinent regulations are recommended. This section is based on information and findings of the *Updated General Biological Assessment* letter report (LSA Associates, Inc. [LSA], August 2014), Coastal California Gnatcatcher Survey Results letter (LSA, July 2010), and Trapping for Pacific Pocket Mouse letter report (LSA, August 2010), which are included in Appendix C.

### 4.3.2 Methodology

**Literature Review and Records Search.** As part of the *Updated General Biological Assessment*, the California Department of Fish and Wildlife (CDFW) Rarefind 3 and the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California were utilized to assist in determining the existing or potential occurrence of any special-status plant and animal species in or immediately adjacent to the project site.

#### Biological Field Surveys

**Updated General Biological Assessment (LSA, August 2014).** LSA biologists conducted botanical surveys of the proposed project site on May 20 and 26, 2010. These surveys were conducted on foot and included a floristic inventory and habitat mapping of the project site. A recent aerial photograph of the project site was used in the field for both orientation and mapping. During the survey, the entire study area was covered on foot, and the existing biological resources were thoroughly assessed. This included noting general site conditions, identifying and classifying plant communities present on site, compiling an inventory of the animal and vascular plant species present, and searching for any existing special-status species present or potentially occurring on site. This study was reviewed and updated by LSA in August 2014.

**Coastal California Gnatcatcher Survey.** LSA biologists conducted coastal California gnatcatcher surveys on foot by walking slowly throughout the survey area and listening and watching. A taped recording was played during the first survey but not thereafter. Three surveys were conducted between June 23 and July 7, 2010. Surveys were conducted according to protocol techniques. The presence of coastal California gnatcatchers in the vicinity was already known; therefore, surveys were conducted to generate information about their utilization of the project area.

**Trapping for Pacific Pocket Mouse.** LSA biologists conducted small mammal trapping on site from June 28 through July 4, 2010. This trapping was specifically conducted in habitat on site that could potentially support the Pacific pocket mouse (*Perognathus longimembris pacificus*), and the trapping

was conducted in accordance with the survey guidelines established by the United States Fish and Wildlife Service (USFWS).

### 4.3.3 Existing Environmental Setting

**Plant Communities.** The approximate 6-acre (ac) project site supports eight habitat classifications (see Figure 4.3.1). The majority of the project site (5.1 ac) is developed and includes ornamental landscaping. Dominant among the ornamental plants are a number of large eucalyptus trees on the north and east sides of the project site. Other ornamental trees include pine and ficus. A limited amount of natural vegetation is present on the east side of the project site.

The project site's 0.4 ac of natural vegetation consists of a mix of chaparral and coastal sage scrub, much of it disturbed due to ongoing fuel modification activities. Chaparral areas are dominated by shrub species such as laurel sumac (*Malosma laurina*), lemonade berry (*Rhus integrifolia*), and toyon (*Heteromeles arbutifolia*). These species also occur in the coastal sage scrub, but are codominant with California sagebrush (*Artemisia californica*) and California buckwheat (*Erigonum fasciculatum*). Other common scrub species include black sage (*Salvia mellifera*) and coyote bush (*Baccharis pilularis*).

**Wildlife.** As described above, the vegetation present on the project site is dominated by exotic ornamental species. This vegetation is typical of much of the City of Dana Point (City) and supports a wide range of generalist wildlife species. Many of the species observed fit into the generalist category, while other species associated with natural scrub habitats were also observed. These include the greater roadrunner (*Geococcyx californianus*), Bewick's wren (*Thryomanes bewickii*), wrentit (*Chamaea fasciata*), and California thrasher (*Toxostoma redivivum*). A number of migrant landbirds representing several species were observed. Most numerous among these was the California yellow warbler (*Dendroica petechia brewsteri*). Based on field observations and the location of the project site (which is bordered on three sides by existing urban development), there are no indications that the project site functions as a wildlife movement corridor.

**Special-Status Species/Communities.** Special-status species are those plants or animals that are federally and/or State listed, that are proposed for listing,<sup>1</sup> or that have some other special designation from a resources agency or a recognized conservation organization (e.g., CNPS). No special-status plant species were observed in the study area or immediately adjacent to the study area during the survey. Moreover, no special-status plant species is judged to have a moderate chance of occurring on site. Two special-status animal species were observed on the project site, Allen's hummingbird (*Selasphorus sasin*) and Nuttall's woodpecker (*Picoides nuttalii*). Another species, the California yellow warbler, was seen but not in the manner in which it is given special status (i.e., nesting).

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<sup>1</sup> Includes species already listed or proposed for listing by the federal government as "Threatened" or "Endangered." In addition to the Threatened and Endangered designations, the State of California also has a third listing designation of "Rare," but only with regard to specific plant species.














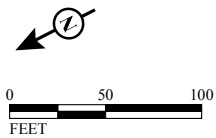
Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

LSA

FIGURE 4.3.1

LEGEND

-  Property Line (6.0 ac)
- Plant Communities**
-  Chaparral (C) (0.05 ac)
-  Disturbed Coastal Sage Scrub (DCSS) (0.18 ac)
-  Coastal Sage Scrub/ Chaparral (CSS/C) (0.12 ac)
-  Disturbed (D) (0.49 ac)
-  Eucalyptus Woodland (EW) (0.26 ac)
-  Developed with Ornamental Landscape (D/O) (3.86 ac)
-  Ornamental (O) (1.003 ac)
-  Ruderal (R) (0.001 ac)



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Several other species are believed to have a moderate chance of occurring on site under conditions in which they are considered “special”: the San Bernardino ringneck snake (*Diadophis punctatus modestus*), Cooper’s hawk (*Accipiter cooperi*), merlin (*Falco columbarius*), coastal California gnatcatcher (*Poliophtila californica californica*), and western mastiff bat (*Eumops perotis californicus*). With the exception of the gnatcatcher, discussed in the following paragraph, these species are relatively widespread and, therefore, require no additional consideration under CEQA.

**Coastal California Gnatcatcher.** The coastal California gnatcatcher is known to utilize the open space located directly adjacent to and east of the project site. Therefore, focused surveys were conducted on the project site to determine whether the coastal California gnatcatcher utilizes the coastal sage scrub in the lower northeastern corner of the project site. The results of the *Coastal California Gnatcatcher Survey* letter (LSA, July 2010), reported that the species was observed utilizing the 0.12 ac of undisturbed coastal sage scrub and chaparral in the northeastern corner of the project site. However, no young or evidence of nesting was detected on the project site.

**Wetlands and Potential Jurisdictional Drainages.** The project site is located on an upland area and is dominated by the existing church development. Based on field observation, LSA determined that there are no jurisdictional drainages or associated riparian habitat or adjacent wetlands within the study area, which consists entirely of upland vegetation.

#### 4.3.4 Regulatory Setting

##### Federal Regulations and Policies.

**United States Fish and Wildlife Service.** The USFWS, pursuant to FESA, protects endangered and threatened species (listed species). An endangered species is defined as a species “in danger of extinction throughout all or a significant portion of its range;” a threatened species is one that is likely to become endangered in the foreseeable future.

The USFWS also identifies species that are proposed for listing as endangered or threatened. Other than for federal actions, there is no formal protection for these species under FESA. However, consultation with the USFWS regarding proposed species can prevent project delays that could occur if a species is listed prior to project completion.

“Take” of a listed species is prohibited under Section 9 of FESA. To “take” is to harass, harm, pursue, hunt, shoot, wound, trap, capture, or collect or attempt to engage in any such conduct. Harm is further defined as significant habitat alteration that results in death or injury to listed species by significantly impairing behavior patterns such as breeding, feeding, or sheltering. The “take” of a listed species incidental to otherwise lawful activities can be authorized by the USFWS. The take of federally listed species can be authorized under Section 10(a) of FESA, with development of a Habitat Conservation Plan (HCP) or as part of a Section 7 Consultation between the USFWS and another federal agency if the project is subject to federal action (e.g., a Section 404 Permit). In certain instances, such as for the coastal California gnatcatcher, take of a threatened species can be authorized by a special rule (i.e., 4[d]). In the case of the coastal California gnatcatcher, the 4(d) rule applies in jurisdictions that are participating in the interim

planning stages of the State's Natural Communities Conservation Plan (NCCP) dealing with coastal sage scrub plant communities. The project area is within a completed NCCP planning area; therefore, the 4(d) rule has effectively been displaced by the Section 10(a) permits issued in association with the completed NCCP/HCP.

**Migratory Bird Treaty Act (MBTA).** The MBTA provides protection of birds migrating among the United States, Canada, Mexico, Japan, and Russia. The MBTA has made it illegal for people to "take" migratory birds, their eggs, feathers or nests. A "take" is defined in the MBTA to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing or transporting any migratory bird, nest, egg, or part thereof.

### **State Regulations and Policies.**

**California Endangered Species Act.** The California Department of Fish and Wildlife (CDFW), via policies formulated by the California Fish and Game Commission (Commission), regulates species of plants and animals that are in danger of, or threatened with, extinction. The Commission has established a list of endangered, threatened, and candidate species that are regulated by the CDFW. Endangered species are native species or subspecies of plants and animals that are in serious danger of becoming extinct throughout all or a significant portion of their range. Threatened species are those species that, although not presently threatened with extinction, are likely to become endangered species in the foreseeable future in the absence of special protection and management efforts. Candidate species are those species the Commission has formally noticed as being under review for addition to either the list of endangered or threatened species or a species proposed for listing.

### **Local Regulations and Policies.**

**Natural Communities Conservation Plan.** In an effort to respond to growing concern over the conservation of coastal sage scrub and other biological communities, federal, State, and local agencies have developed a multispecies approach to habitat conservation planning known as the NCCP process. The goal of this NCCP program is to identify significantly important coastal sage scrub habitat and to develop ways and means to preserve and/or restore the ecological value of this and associated plant communities and their attendant sensitive species in a rapidly urbanizing setting. This was made possible by legislation (Assembly Bill [AB] 2172) that authorized CDFW to enter into agreements for the preparation and implementation of NCCPs. The USFWS joined in this effort, utilizing both the Section 4(d) Special Rule and the HCP processes.

In Orange County, the development of two subregional NCCP/HCPs for coastal sage scrub and other covered habitats was undertaken jointly by the County of Orange, the Transportation Corridor Agencies (TCA), USFWS, and CDFW, in cooperation with several large private landowners including the Irvine Company, with the County of Orange as the Lead Agency and other cities as participating agencies. The NCCP/HCP for the Central/Coastal Subregion, which was approved by the participating agencies in July 1996, addresses a range of species issues and, in particular, subregional habitat needs of the coastal California gnatcatcher.

The project site is located within the jurisdiction of the Central and Coastal Orange County NCCP/HCP. The project site is owned by a nonparticipating landowner but is within the City of Dana Point, which became an NCCP/HCP signatory agency in 2004. Signatory agencies are responsible for ensuring that the provisions of the NCCP/HCP are implemented with respect to activities that are under their jurisdiction. The proposed project site is located within the boundaries of the Orange County Central and Coastal NCCP/HCP planning area; however, it is an area identified as urbanized and is located well outside the habitat reserve. Because the project site contains 0.12 ac of undisturbed coastal sage scrub and chaparral and 0.18 ac of disturbed coastal sage scrub and chaparral, which are each covered as sensitive habitat in the NCCP/HCP, is within the NCCP/HCP planning area, and within a jurisdiction that is a signatory agency under Section 10(a), the project site is subject to the NCCP/HCP in-lieu fee provision for mitigation. Impacts to coastal sage scrub, including coastal sage scrub utilized by coastal California gnatcatcher, can be mitigated through the payment of in-lieu fees (currently \$65,000 per acre) to the Nature Reserve of Orange County (NROC). In-lieu fees would be used by the NROC to fund activities aimed at restoring, establishing, enhancing, and/or preserving covered coastal sage scrub species in the NCCP/HCP planning area, including weed control, soil preparation, planting native species, and supplemental irrigation as well as land acquisition and ongoing monitoring and maintenance efforts.

**City of Dana Point General Plan.** Conservation goals and policies are included in the Conservation/Open Space Element of the City of Dana Point General Plan (1997). The following goals and policies are applicable to the proposed project.

**Policy 1.5:** Retain, maintain, protect, and enhance existing riparian habitat adjacent to drainage courses, channels, and creeks through methods such as, but not limited to, the establishment of buffer areas adjacent to such habitats. (Coastal Act/30331)

**Goal 3:** Conserve significant natural plant and animal communities.

**Policy 3.1:** Environmentally sensitive habitat areas, including important plant communities, wildlife habitats, marine refuge areas, riparian areas, wildlife movement corridors, wetlands, and significant tree stands, such as those generally depicted on Figure COS-1 [in the Conservation/Open Space Element of the City's General Plan], shall be preserved. Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade those areas through such methods as, the practice of creative site planning, revegetation, and open space easement dedications, and shall be compatible with the continuance of those habitat areas. A definitive determination of the existence of environmentally sensitive habitat areas on a specific site shall be made through the coastal development permitting process. (Coastal Act/30230, 30240)

**Policy 3.2:** Require development proposals in areas expected to contain important plant and animal communities and environmentally sensitive habitat areas, such as but not limited to marine refuge areas, riparian areas, wildlife movement corridors, wetlands, and significant tree stands, to include biological assessments and identify affected habitats.

**Policy 3.3:** Encourage retention of natural vegetation and require revegetation of graded areas.

**City of Dana Point Municipal Code.** The project site is located within the City's Coastal Overlay District and, according to the development standards within a Coastal Overlay District, Section 9.27.030(h), fuel modification within environmentally sensitive habitat areas shall be minimized to the extent feasible. Fuel modification plans shall, where feasible, employ selective thinning by hand rather than mass clear-cutting within environmentally sensitive habitat areas.

#### 4.3.5 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines* and the City's CEQA Thresholds of Significance. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on biological resources if it would:

- Threshold 4.3.1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service;
- Threshold 4.3.2:** Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service;
- Threshold 4.3.3:** Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- Threshold 4.3.4:** Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Threshold 4.3.5:** Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Threshold 4.3.6:** Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

### 4.3.6 Project Impacts

**Threshold 4.3.1:** Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service

#### **Less than Significant Impact with Mitigation.**

**NCCP/HCP.** The coastal California gnatcatcher surveys detected the coastal California gnatcatcher utilizing the coastal sage scrub in the northeastern portion of the project site. This area will be preserved in its current condition as part of the project. The project site's natural vegetation consists of a mix of chaparral and coastal sage scrub, much of it disturbed. The proposed project would result in the preservation of 0.12 ac of undisturbed coastal sage scrub and chaparral and the removal of approximately 0.18 ac of disturbed coastal sage scrub and chaparral (see Figure 4.3.1), which are each sensitive habitat types covered under the Orange County Central and Coastal NCCP/HCP. According to the Orange County Central and Coastal NCCP/HCP Implementation Agreement, nonparticipating landowners who select the in-lieu mitigation fees to address impacts to coastal sage scrub species, "will be covered under the terms of the NCCP/HCP Section 10(a) Permit and [CDFW] Management Authorization granted to the Local Government with jurisdiction over the proposed activity with regard to all coastal sage scrub Species, and no additional approvals pursuant to FESA, CESA, and the NCCP Act will be required by USFWS and [CDFW]." Therefore, impacts to the approximately 0.18 ac of sensitive habitat can be mitigated through the NCCP/HCP in-lieu fee program, which provides funding for land acquisition, weed control, soil preparation, planting native species, supplemental irrigation, and other activities aimed at restoring, establishing, enhancing, and/or preserving covered coastal sage scrub species in the NCCP/HCP area. As outlined in Mitigation Measure 4.3.1, in-lieu fees, currently \$65,000 per impacted acre, shall be paid by the applicant to the NROC prior to any impact to the coastal sage scrub or other identified habitat or species. This payment of in-lieu fees would reduce any impact to the Orange County Central and Coastal NCCP/HCP and coastal sage scrub habitat to less than significant levels.

Additionally, the intrusion of invasive exotic plant species from the proposed project landscaping may result in significant adverse effects on native vegetation adjacent to the project site. However, implementation of Mitigation Measure 4.3.2, which requires the use of native plants in the project landscaping plan, would reduce any impacts related to invasive exotic plant species on surrounding native vegetation to less than significant levels.

**Coastal California Gnatcatcher.** The threatened coastal California gnatcatcher was given additional consideration as the coastal California gnatcatcher is known to occur in coastal sage scrub east of the project site and to potentially visit the project site. Focused surveys were conducted to determine the coastal California gnatcatcher's utilization of the habitat in the vicinity of the project site, and those surveys determined that the coastal California gnatcatcher at least occasionally utilizes the undisturbed coastal sage scrub in the lower northeastern corner of the project site. While no gnatcatchers were observed using the disturbed coastal sage scrub further up the slope on the project site, it is possible that gnatcatchers use this area as well (although it would be on the extreme edge of any gnatcatcher territories). However, per the

Orange County Central and Coastal NCCP/HCP in-lieu fee program, potential impacts to the coastal California gnatcatcher would be mitigated through implementation of Mitigation Measure 4.3.1, which requires applicants to pay an in-lieu fee to the NROC prior to impacting any coastal sage scrub or other identified habitat species. The payment of in-lieu fees, which would provide funding for land acquisition, weed control, soil preparation, planting native species, supplemental irrigation, and other activities aimed at restoring, establishing, enhancing, and/or preserving covered coastal sage scrub species in the NCCP/HCP area, would reduce any impact to the coastal California gnatcatcher to less than significant levels.

**Pacific Pocket Mouse.** The endangered Pacific pocket mouse was given additional consideration as the Pacific pocket mouse has been found in the project region on the Dana Point Headlands, approximately 1.9 miles (mi) from the project site. Protocol surveys were conducted to determine the presence of the Pacific pocket mouse; however, no Pacific pocket mouse were found on the project site. Therefore, implementation of the proposed project would not impact the Pacific pocket mouse, and no mitigation is required.

**Other Special-Status Species/Communities.** As stated previously, no special-status plant species were observed on the project site or immediately adjacent to the project site. Additionally, no other sensitive natural communities (e.g., southern maritime chaparral) are present on the project site. Moreover, it is unlikely that any special-status plant species would have a moderate chance of occurring on the project site. Therefore, implementation of the proposed project would not impact special-status plant species, and no mitigation is required.

**Threshold 4.3.2: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or United States Fish and Wildlife Service**

**Less than Significant Impact with Mitigation.** As described above, implementation of the proposed project would result in the preservation of 0.12 ac of undisturbed coastal sage scrub and chaparral and the loss of 0.18 ac of disturbed coastal sage scrub. Other natural vegetation identified on site (i.e., chaparral) is not considered sensitive. The Orange County Central and Coastal NCCP/HCP, approved in July 1996, establishes a 37,380 ac reserve system in a 208,000 ac planning area. The plan protects significant areas of 12 major habitat types and covers 39 sensitive plant and animal species. Reserve lands are managed by participating landowners or their designated Reserve Managers in coordination with the NROC.

The Orange County Central and Coastal NCCP/HCP provides for the protection of a number of plant and animal species, referred to as Target Species and Identified Species. As stated previously, the proposed project would result in the direct loss of approximately 0.18 ac of disturbed coastal sage scrub and coastal sage scrub/chaparral, each of which is a sensitive habitat type, on the project site. As part of Mitigation Measure 4.3.1, in-lieu fees, which are currently \$65,000 per impacted acre, shall be paid by the applicant to the NROC prior to any impact to the coastal sage scrub or other identified habitat or species. This payment of in-lieu fees would reduce any impact to any sensitive natural communities identified in the NCCP/HCP to less than significant levels. Chaparral is considered a



covered habitat in the Coastal Subarea of the Orange County Central and Coastal NCCP/HCP; however, because it is not a sensitive habitat, no further mitigation is required.

**Threshold 4.3.3: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means**

**No Impact.** Based on field observations and reported in the *Updated General Biological Assessment* (LSA 2014), the vegetation within the project site consists of upland vegetation, and there are no jurisdictional drainages or associated riparian habitat or adjacent wetlands within the project site. Therefore, implementation of the proposed project would not impact any federally protected wetlands as defined by Section 404 of the Clean Water Act, and no mitigation is required.

**Threshold 4.3.4: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites**

**Less than Significant Impact with Mitigation.**

**Wildlife.** As stated previously, the on-site vegetation is dominated by exotic ornamental species that support a wide range of generalist wildlife species. However, based on field observations and reported in the *Updated General Biological Assessment* (LSA 2014), there are no indications that the project site functions as a wildlife movement corridor. Additionally, the vegetation within the study area consists of upland vegetation, and there are no jurisdictional drainages or associated riparian habitat or adjacent wetlands within the study area. Therefore, implementation of the proposed project would not impact the movement of any native resident, migratory fish, wildlife species, species with established native resident, any migratory wildlife corridors, or impede the use of native wildlife nursery sites, and no mitigation is necessary.

Wildlife may be subject to the adverse effects of noise from construction activities. These effects would be temporary and, with the possible exception of nesting birds (including birds that nest in scrub habitat), would not constitute a significant adverse impact to wildlife on site or in the adjacent areas. Construction noise could potentially disrupt normal nesting behavior in birds on site and/or immediately adjacent to the study area. Also, removing or trimming trees or shrubs on site in association with proposed construction activities could potentially result in significant adverse impacts to nesting birds, which are protected under the MBTA. Implementation of Mitigation Measure 4.3.3, which requires that nesting bird surveys be conducted if construction activities occur during the active breeding for season birds, would ensure that nesting birds would be protected during construction activity and reduce potential adverse effects to nesting birds to a less than significant level.

**Threshold 4.3.5: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance**

**Less than Significant Impact with Mitigation.** The project site is zoned as Community Facilities on both the City's Land Use Map and Zoning Map. The proposed project is consistent with the following Open Space/Conservation Element goals and policies:

**Policy 1.5:** Retain, maintain, protect, and enhance existing riparian habitat adjacent to drainage courses, channels, and creeks through methods such as, but not limited to, the establishment of buffer areas adjacent to such habitats.

*Consistency:* The project site is not located directly adjacent to an existing riparian habitat, drainage course, channel, or creek. Development of the project site would maintain the existing hillside buffer area between the project site and riparian habitat associated with nearby Salt Creek. Therefore, the proposed project would be consistent with the City's policy aimed at protecting existing riparian habitat.

**Goal 3:** Conserve significant natural plant and animal communities.

**Policy 3.1:** Environmentally sensitive habitat areas, including important plant communities, wildlife habitats, marine refuge areas, riparian areas, wildlife movement corridors, wetlands, and significant tree stands, such as those generally depicted on Figure COS-1 [in the Conservation/Open Space Element of the City's General Plan], shall be preserved. Development in areas adjacent to environmentally sensitive habitat areas shall be sited and designed to prevent impacts which would significantly degrade those areas through such methods as, the practice of creative site planning, revegetation, and open space easement dedications, and shall be compatible with the continuance of those habitat areas. A definitive determination of the existence of environmentally sensitive habitat areas on a specific site shall be made through the coastal development permitting process. (Coastal Act/30230, 30240)

*Consistency:* The project site is located within the jurisdiction of the Orange County Central and Coastal NCCP/HCP, and a Section 10(a) permit has been issued for the City of Dana Point as a signatory agency. As stated previously, according to the Implementation Agreement for the NCCP/HCP, applicants with projects under the jurisdiction of a signatory agency may pay in-lieu fees to the NROC as mitigation for any impacts to coastal sage scrub. Payment of such in-lieu fees are considered fulfillment of the City's obligations under the NCCP/HCP Implementation Agreement and are required under Mitigation Measure 4.3.1. In addition, as described above, the proposed project would preserve 0.12 ac of undisturbed coastal sage scrub and chaparral on the northeastern portion of the project site. Therefore, the proposed project would be consistent with the City's policy aimed at protecting environmentally sensitive habitat areas.

**Policy 3.2:** Require development proposals in areas expected to contain important plant and animal communities and environmentally sensitive habitat areas, such as, but not limited to, marine refuge areas, riparian areas, wildlife movement corridors, wetlands, and significant tree stands, to include biological assessments and identify affected habitats.

**Consistency:** The project site is located in an area known to contain sensitive habitat types. As such, the *Updated General Biological Assessment* letter report (LSA 2014), *Coastal California Gnatcatcher (CAGN) Survey Results* letter (LSA, July 2010), and the *Trapping for Pacific Pocket Mouse* letter report (LSA, August 2010) (all provided in Appendix C) were prepared for the proposed project. The results of and recommendations made within each of these reports are included within this Draft Environmental Impact Report (EIR). Therefore, the proposed project would be consistent with the City's policy of requiring development proposals to include a biological assessment prepared for areas anticipated to contain important plant and animal communities.

**Policy 3.3:** Encourage retention of natural vegetation and require revegetation of graded areas.

**Consistency:** As stated previously, the proposed project would preserve all of the undisturbed coastal sage scrub and chaparral (0.12 ac) on the northeastern portion of the project site, but would also result in the removal of 0.18 ac of disturbed coastal sage scrub. As shown in Figure 4.1.9, Preliminary Landscape Plan (provided in Section 4.1 of this Draft EIR), revegetation of the project site will be landscaped utilizing natural native vegetation. In addition, Mitigation Measure 4.3.2 is proposed, which requires the use of native plants in the project landscaping plan. No graded areas of the project site would be left unlandscaped once construction is completed. Although the proposed project would result in the removal of existing coastal sage scrub on the project site, the proposed project would be required to pay in-lieu fees into the NCCP/HCP fee program in accordance with Mitigation Measure 4.3.1. Payment of these fees would reduce the project's impacts to coastal sage scrub habitat to a less than significant level; therefore, the proposed project would be consistent with the City's policy aimed at encouraging retention of natural vegetation and requiring revegetation of graded areas.

Additionally, according to the development standards within a Coastal Overlay District, Section 9.27.030(h) of the City's Municipal Code, fuel modification within environmentally sensitive habitat areas shall be minimized to the extent feasible. Fuel modification plans shall, where feasible, employ selective thinning by hand rather than mass clear-cutting within environmentally sensitive habitat areas.

**Consistency:** As specified in the project's Fuel Modification Plan approved by the Orange County Fire Authority (available upon request at the City), landscaping surrounding the project development on the project site will include native vegetation appropriate to fuel management. Additionally, fuel modification during operation of the proposed project would be consistent with the City's Municipal Code Section 9.27.030(h) by employing selective thinning by hand rather than mass clear-cutting.

In summary, the goals and policies that apply to the proposed project from the Conservation/Open Space Element of the City of Dana Point's General Plan and the Municipal Code address the protection of sensitive habitat. As discussed under Thresholds 4.3.1 through 4.3.4 and Threshold 4.3.6, implementation of the proposed project would comply with the Orange County Central and Coastal NCCP/HCP by contribution of in-lieu fees for mitigation. Furthermore, prescribed mitigation

measures would require the implementation of a landscape plan which does not include any invasive nonnative plant species pursuant to the California Invasive Plant Council Invasive Plant Inventory and would require a nesting bird survey if project construction were to occur within the active breeding season (i.e., February 15 through August 15). Therefore, with implementation of Mitigation Measures 4.3.1 through 4.3.3, the proposed project would not conflict with any local policies or ordinances protecting biological resources.

**Threshold 4.3.6: Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan**

**Less than Significant Impact with Mitigation.** As stated above, payment of in-lieu fees to the NROC in compliance with the terms and conditions of the Orange County Central and Coastal NCCP/HCP Implementation Agreement serves as suitable mitigation for project-specific and cumulative impacts to native habitat and associated wildlife on the project site (see Mitigation Measure 4.3.1). Implementation of Mitigation Measure 4.3.1 would ensure that the proposed project would not conflict with the existing NCCP/HCP. No additional mitigation is required.

#### **4.3.7 Mitigation Measures**

**Mitigation Measure 4.3.1: Orange County Central and Coastal Subregion NCCP/HCP.** Prior to issuance of any demolition and/or grading permits, the project Applicant shall provide evidence to the City of Dana Point (City) Community Development Director, or designee, of in-lieu fees paid to the Nature Reserve of Orange County (NROC). The exact acreage of impact shall be determined during final site plan review and in-lieu fees shall be based on \$65,000 per impacted acre or the most current in-lieu fee amounts. These fees are considered mitigation within signatory agencies of the Natural Communities Conservation Plan (NCCP)/Habitat Conservation Plan (HCP) per the City's Section 10(a) permit. In addition, the NCCP/HCP requires implementation of the following construction minimization measures during the authorized removal of coastal sage scrub habitat. The project Applicant shall retain a qualified biological monitor to assist with the implementation of these measures as approved by the City Community Development Director, or designee, prior to issuance of any demolition or grading permit, or any impacts on the on-site sensitive habitat.

- All natural vegetation shall only be removed outside the coastal California gnatcatcher breeding season (February 15 through July 15).
- Prior to the commencement of grading operations or other activities involving significant soil disturbance, all areas of coastal sage scrub habitat to be avoided under the provisions of the NCCP/HCP shall be identified with temporary fencing or

other markers clearly visible to construction personnel. Additionally, prior to the commencement of grading operations or other activities involving disturbance of coastal sage scrub, a survey shall be conducted to locate coastal California gnatcatchers and cactus wrens within 100 feet (ft) of the outer extent of projected soil disturbance activities, and the locations of any such species shall be clearly marked and identified on the construction/grading plans.

- A monitoring biologist, acceptable to USFWS/CDFW, shall be on site during any clearing of coastal sage scrub. The project Applicant or relevant public agency/utility shall advise USFWS/CDFW at least seven (7) calendar days (and preferably fourteen [14] calendar days) prior to the clearing of any habitat occupied by Identified Species to allow USFWS/CDFW to work with the monitoring biologist in connection with bird flushing/capture activities. The monitoring biologist shall flush Identified Species (avian or other mobile Identified Species) from occupied habitat areas immediately prior to brush-clearing and earth-moving activities. If birds cannot be flushed, they shall be captured in mist nets, if feasible, and relocated to areas of the site to be protected or to the NCCP/HCP Reserve System. It shall be the responsibility of the monitoring biologist to assure that identified bird species shall not be directly impacted by brush-clearing and earth-moving equipment in a manner that also allows for construction activities on a timely basis.
- Following the completion of initial grading/earth movement activities, all areas of coastal sage scrub habitat to be avoided by construction equipment and personnel shall be marked with temporary fencing or other appropriate markers clearly visible to construction personnel. No construction access, parking, or storage of equipment or materials shall be permitted within such marked areas.
- Coastal sage scrub identified in the NCCP/HCP for protection and located within the likely dust drift radius of construction areas shall be periodically sprayed with water to reduce accumulated dust on the leaves as recommended by the monitoring biologist.

**Mitigation Measure 4.3.2:**

**Avoidance of Invasive Nonnative Plant Species.** Prior to issuance of any grading or construction permits, the project Applicant shall provide a final landscape plan for review and approval by the City Community Development Director, or designee, and the City Public Works Director. The final landscape plan shall not include any invasive nonnative plant species on site in association with landscaping and/or redevelopment of the site. For the purposes of this mitigation, invasive nonnative plants are considered those plant

species rated as “High” or “Moderate” in the California Invasive Plant Council (CAL-IPC) Invasive Plant Inventory.

**Mitigation Measure 4.3.3: Migratory Bird Treaty Act (MBTA).** In the event that project construction or grading activities occur within the active breeding season for birds (i.e., February 15 through August 15), a nesting bird survey shall be conducted by a qualified biologist prior to commencement of construction activities. If active nesting of birds is observed within 100 ft of the designated construction area prior to construction, the construction crew shall establish an appropriate buffer around the active nest. A qualified biologist shall determine the buffer distance based on the specific nesting bird species and circumstances involved. Once the designated project biologist verifies that the birds have fledged from the nest, the buffer may be removed. Prior to issuance of any grading or building permits, the City Community Development Director, or designee, shall verify that all project grading and construction plans include specific documentation regarding the requirements of the MBTA, that preconstruction surveys have been completed and the results reviewed by staff, and that the appropriate buffers (if needed) are noted on the plans and established in the field with orange snow fencing.

#### 4.3.8 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for biological resources. The cumulative study area for biological resources includes the 208,000 ac planning area established by the Orange County Central and Coastal NCCP/HCP. As described above, the project site is located within the boundaries of the Orange County Central and Coastal NCCP/HCP planning area. The purpose of the NCCP/HCP is to take a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity, which is the most appropriate way to assess and address the potential cumulative impacts stemming from multiple projects in the same geographic area. The NCCP/HCP program focuses on the long-term stability of wildlife and plant communities and includes key interests in the process. An NCCP/HCP identifies and provides for the regional or areawide protection of plants, animals, and their habitats while allowing compatible and appropriate economic activity. Potential impacts to native habitats and associated wildlife have been addressed in a regional context through the NCCP/HCP. Large tracts of coastal lands supporting native habitat have already been set aside for permanent preservation. These lands include the Seal Beach National Wildlife Refuge, the Bolsa Chica Ecological Reserve, as well as lands in the NROC, including the Upper Newport Bay Ecological Reserve. When viewed in the context regarding how much native habitat has already been conserved in Orange County, the quantity of native habitat on site that would be lost is not cumulatively considerable. Therefore, implementation of the proposed project would not result in potentially significant adverse cumulative impacts to native habitats and associated wildlife. Further, payment of NCCP/HCP in-lieu fees as required in Mitigation Measure 4.3.1 has been deemed acceptable mitigation for the cumulative loss of habitat within the NCCP/HCP planning areas.

#### **4.3.9 Level of Significance Prior to Mitigation**

Potential significant adverse impacts to native plant communities, wildlife and wildlife habitat, and nesting birds would be significant prior to implementation of the proposed mitigation measures.

#### **4.3.10 Level of Significance After Mitigation**

Potential impacts to biological resources from the proposed project would be mitigated to levels that are less than significant with implementation of Mitigation Measures 4.3.1 through 4.3.3. Therefore, the proposed project would not result in any significant unavoidable adverse impacts related to biological resources.

#### **4.3.11 Significant Unavoidable Adverse Impacts**

The proposed project would not result in any significant unavoidable adverse impacts related to biological resources.

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## 4.4 CULTURAL AND PALEONTOLOGICAL RESOURCES

### 4.4.1 Introduction

This section evaluates the cultural and paleontological resources on the project site and evaluates the potential impacts of the proposed project on cultural and paleontological resources. Cultural resources are sites, buildings, structures, objects, and districts over 50 years old that may have traditional or cultural value for the historical significance they possess. Paleontological resources include fossil plants and animals and evidence of past life such as trace fossils and tracks. The information and analysis presented in this section are based on the City of Dana Point (City) General Plan Conservation/Open Space Element (July 9, 1991), the *Cultural Resources Assessment* (LSA Associates, Inc. [LSA], August 2013), the *Paleontological Resources Assessment* (LSA, August 2013), and historical photos and building plans of the project site as provided by the Applicant. The City's General Plan Conservation/Open Space Element is available for review at the City of Dana Point. The *Cultural Resources Assessment* and *Paleontological Resources Assessment* are provided in Appendix D of this Environmental Impact Report (EIR).

### 4.4.2 Methodology

The methods to determine the presence of cultural and paleontological resources on or in the vicinity of the project site are described in the following sections.

**Cultural Resources.** The existing conditions for cultural resources on the project site were determined through background research and field surveys. Background research was conducted to: (1) identify previously recorded or otherwise known cultural resources and cultural resource studies in or adjacent to the project site; and (2) obtain information about the archaeology, ethnography, and history of the project site.

**Archival Research.** On August 19, 2013, an archaeological and historical resource record search was completed at the South Central Coastal Information Center (SCCIC), located at California State University, Fullerton. It included a review of all recorded historic and prehistoric archaeological sites within 0.25 mile (mi) of the project site, as well as a review of known cultural resource survey and excavation reports. In addition, the California State Historic Resources Inventory (HRI), which includes the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), California Historical Landmarks (SHL), California Points of Historical Interest (SPHI), and various local historical registers were examined.

**Field Survey.** A surface archaeological reconnaissance and cultural resources field survey was conducted on site to identify unrecorded cultural resources and assess the potential for subsurface cultural resources. LSA's methodology was based on the survey requirements and the nature of expected resources and archaeological characteristics. The survey scope required LSA to locate all resources greater than 45 years in age within the survey area. The survey unit boundary is defined horizontally as being approximately six surface acres. Since subsurface excavations were not proposed as part of this study, observation of the subsurface was limited to graded cuts,

erosional cuts and gullies, as well as rodent burrows. On March 17, 2010, LSA Principal Steven W. Conkling and Architectural Historian Casey Tibbet conducted a pedestrian survey of the project site. The project site was intensively examined by walking the area at approximately 10-meter wide intervals.

**Paleontological Resources.** The existing conditions for paleontological resources on the project site were determined through a literature review, a locality search, and a field survey. A literature review was conducted to: (1) identify previously recorded or otherwise known fossil localities in or adjacent to the project site; and (2) obtain information about the geological setting of the project site and the potential for geological formations underlying the project site for containing fossils.

**Archival Research.** Background research consisted of a fossil locality search through copies of the Orange County paleontological localities maintained by LSA and a review of geological and paleontological literature of the project site and vicinity. A surface paleontological resources field survey was conducted of the project site to identify fossils and fossiliferous geological formations and sediments.

**Field Survey.** On March 17, 2010, LSA Principal Steven W. Conkling and Architectural Historian Casey Tibbet conducted a pedestrian survey of the project site. The purpose of the surveys was to confirm the accuracy of the archival records searches and geologic mapping and to identify whether any archaeological and/or paleontological resources might be exposed on the surface. Since subsurface excavations were not proposed as part of this study, observation of the subsurface was limited to graded cuts, erosional cuts and gullies, and rodent burrows on the project site and nearby road cuts. The project site was intensively examined by walking the area at approximately 10-meter wide intervals.

#### 4.4.3 Existing Environmental Setting

Cultural Resources Existing Environmental Setting. This section describes the baseline conditions and cultural setting for the project site, based on a records search at the SCCIC, a literature review, and a field survey. The project site currently consists of relatively level developed area with parking lots and various church buildings. A portion of the existing Administration and Fellowship Hall building was originally constructed as a single-family residence in the 1950s. Around 1962, South Shores Church began worshipping in the single-family residence. As the church's membership expanded in subsequent years, the residence was remodeled and expanded over various stages to accommodate offices and administrative needs. Due to the extensive structural modifications that have been completed over the past several decades, the existing Administration and Fellowship Hall building does not retain any of the historical or architectural character of the original structure. The area north of the project site is steeply sloped down to parking areas associated with the Monarch Coast Apartments, while the area south of the project site has been developed into condominiums. The project site is bounded on the west by Crown Valley Parkway and on the east by an undeveloped hillside and the Monarch Beach Golf Links. Existing buildings, landscaping, and walkways cover much of the project site.

Results of the record and literature search indicated that the project site along Crown Valley Parkway had not been previously surveyed. The record search also showed that no cultural resource sites had been recorded within the project site.

Record search information showed that five cultural resource studies had been conducted within 0.25 mi of the project site. Detailed information regarding these studies is included in the *Cultural Resources Assessment* (see Appendix D).

Three archaeological sites are recorded within 0.25 mi of the project site. The closest of these sites is located over 500 feet (ft) south of the project site. A second site, located atop a knoll approximately 700 ft south of the project site, was one of the first prehistoric sites recorded in Orange County (County). This site was located in an accessible, highly visible location along the inland side of Pacific Coast Highway (PCH) and contained quantities of marine shell. A third site is located on the east side of Crown Valley Parkway approximately 0.25 mi north of the project site. Prehistoric sites in this area are commonly found to contain quantities of marine shell collected from the local rocky intertidal areas, as well as flaked and ground stone tools used to hunt and process plant food.

Record search results identified no above-ground historical resources within the project site or within 0.25 mi of the project site. Additionally, the California State HRI, the SPHI, the SHL, the National Register, and the California Register do not list any properties within 0.25 mi of the project site.

The United States Geological Survey (USGS) 1941 *San Juan Capistrano, California* 15-minute topographic quadrangle depicts no development within the project site. Online USGS maps dating from 1902 to 1964 also show no development within the project site or adjacent areas. The first building on the project site, the church at the north end of the parcel, appears on a 1970 map.

Online aerial photographs reflect results of the historic maps. No development was present on the project site or nearby area on 1938, 1946, or 1952 aerials. In 1982, however, the area west of the project site is heavily developed. In 1980, the northern portion of the project site contains buildings and a parking lot, while the southern half of the project site remains undeveloped. The 2003, 2004, and 2005 aerial photos show a building in the central-eastern portion of the project site and show the remainder of the project site to be developed with a parking lot.

No cultural resources were identified during the field survey. Most of the project site consists of either moderate to steep slopes, or areas that are developed for the church's use. Overall ground visibility was approximately 10 percent with the remainder of the project site covered by existing development or landscaping.

## **Prehistory.**

**Early Period (10,000 to 5,500 BC).** Artifacts and cultural activities from the Early Period are representative of a predominately hunting culture. Cultural resource sites from this period are rare; however, typical sites from this period are generally located along shorelines of ancient lakes, marshes, channels, or estuaries. Two sites within Orange County contain Early Period components, including shellfish from Newport Bay.

**Milling Stone Period (Post to 5,500 BC).** During the Milling Stone Period, stone artifacts were more common than in Early Period cultures. Several Milling Stone Period sites have been identified in Orange County; these cultural resource sites indicate that early Milling Stone Period sites were occupied by mobile hunters and gatherers who utilized coastal resources during the winter and inland resources throughout the remainder of the year. By the late portion of the Milling Stone Period, faunal remains suggest relatively permanent settlements in the Newport Bay area. Subsistence strategies included intensive hunting of small and large land mammals, sea mammals, and birds, as well as near shore fishing and shellfish collecting. Elsewhere, small mammals were hunted and seeds were collected, as documented by the many milling stones found at Milling Stone Period sites throughout the Orange County area.

**Intermediate Period (5,550 BC to 500 AD).** Orange County researchers have had difficulty in identifying the Intermediate Period because artifacts are commonly found in both earlier and later periods. As such, few sites in Orange County have been placed in this period; however, Intermediate Period sites in the County have been identified near Newport Bay.

**Late Prehistoric Period (500 AD to time of European Contact).** During the Late Prehistoric Period, several artifact changes and new cultural practices occur. For example, during this period, smaller projectile points, such as the bow and arrow appear more commonly. This period is also marked by effigies and by cremation as an interment practice. These artifacts and practices have been linked to a proposed Shoshonean immigration from the Great Basin that ended at the coast. By AD 1000, smoking pipes and ceramic pottery occur, although ceramic smoking pipes may occur somewhat earlier, within the later portion of the Intermediate Period. Sites within the Orange County region occasionally contain the vitreous (glassy) lithic called Grimes Canyon fused shale, which originates from Ventura County.

**Ethnographic Setting.** The project site is within territory ethnographically occupied by the Juaneño, with the Gabrielino located to the north, and the Luiseño to the south. The Juaneño are considered to be a linguistically related subgroup of the Luiseño that occupied the area near San Juan Capistrano. What is known about the Juaneño was recorded principally during the initial European land expeditions through the Southern California area. The reason for this is that the swift decline in native populations made it difficult even for early European explorers and inhabitants to observe endemic Southern California peoples in a natural state. This decline in native population was brought about by the inability of Native Americans to resist European diseases introduced through initial contact and the establishment of the mission system. The Gabrielino, Juaneño, and Luiseño spoke related languages and shared fairly similar cultures.

The Gabrielino, Luiseño, and Juaneño were hunters and gatherers who used both inland and coastal food resources. They hunted and collected seasonally available food resources and led a semisedentary lifestyle, often living in permanent communities along watercourses and near coastal estuaries. Commonly chosen habitation sites included rivers, streams, sheltered coastal bays and estuaries, and the transition zone marking the interface between prairies and foothills.

The presence of water, a stable food supply, and some measure of protection from flooding were the most important factors relating to the location of habitation sites. Gabrielino and Luiseño communities located in the interior regions maintained permanent geographical territories or use areas that averaged 30 square miles, although it is likely that coastal settlements, where food resources may have been more plentiful and more easily available throughout the entire year, occupied less acreage.

In addition to permanent settlements, native groups occupied temporary campsites used seasonally for hunting, fishing, and gathering plant foods and shellfish. Rabbit and deer were the most commonly hunted animals, while acorns, buckwheat, chía, berries, and fruits were some of the more commonly collected plant foods. Acorns were the staple food of most indigenous Californians and were the most characteristic feature of the domestic economy of native California. The economy of coastal groups is thought to have focused on marine rather than land resources. Inland villages were seasonal, while coastal villages may have been occupied permanently as their food sources were more dependable.

Native culture in coastal Southern California was characterized by an active and elaborate system of rituals and ceremonies. Rituals included individual rites of passage, village rites, seasonal ceremonies, and participation in the widespread Chinigchinich cult.

### **Historic Setting.**

**Spanish Mission Period (1769–1821).** The Historic Period in Southern California is generally accepted to commence with the establishment of Mission San Diego De Alcalá, first and southernmost of the Alta California Missions, on July 16, 1769. The seventh mission founded in Alta California was Mission San Juan Capistrano, established on November 1, 1776, in Juaneño territory. In 1778, Mission San Juan Capistrano was moved to its present location in order to take advantage of a more dependable water supply.

Mission San Juan Capistrano's land holdings were extensive in order to support itself and its Indian converts. The Franciscans' goal was to convert the Native Americans to Christianity and incorporate them into Spanish society. The local natives could learn smithing, plant and animal domestication, and European building construction methods. Europeans learned how and where indigenous people lived and gathered information about native life as well as ceremonial and ritual practices.

**Mexican Rancho Period (1821–1848).** In 1821, Mexico gained independence from Spain, and in 1848, the United States formally obtained California. The period from 1821 to 1848 is here referred to as the Mexican Rancho Period. During this period, there was a change from the subsistence agriculture of the Spanish Mission Period to livestock husbandry of the large ranches, or ranchos, acquired by Mexican citizens through grants or by purchase from mission administrators. This change was even more distinct after 1833–1834, when mission secularization occurred.

In 1833, 12 years after gaining independence from Spain, the Mexican government's Secularization Act changed missions into civil parishes, and those natives who had inhabited areas adjacent to a Spanish Period mission were to obtain half of all mission possessions including land. However, this did not occur in most instances, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals rather than to local natives. Economic activities centered around cattle ranching on the numerous expansive "ranchos" that had been created out of the mission lands.

It was during the Mexican Rancho Period that American Richard Henry Dana first visited the area that was eventually named after him. During the 1830s through the 1850s, the sale of tallow (soap and candles) and cattle hides (for leather) became a booming business following the decline in the sale of Mission-harvested grain. In 1835, Richard Henry Dana described tossing the dried hides off the cliffs to the beach below in the cove that now bears his name, Dana Cove.

The 1840s saw increased tension between the United States and Mexico. Finally, in 1846, war was declared between these two countries. By 1847, the United States had established control of California. The Treaty of Guadalupe Hidalgo in 1848 formally ended hostilities.

**American Period (1848–Present).** Following the end of hostilities between Mexico and the United States, the United States officially obtained California in the Treaty of Guadalupe Hidalgo on February 2, 1848. In 1850, California was accepted into the Union of the United States, mainly due to the population increase created by the Gold Rush of 1849. In the years immediately following the United States' acquisition of California, the cattle industry reached its greatest prosperity due to the massive influx of immigrants during the Gold Rush. Mexican Period land grants had created large pastoral estates in California, and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849 to 1855. In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri Valleys, and the development of stock breeding farms. When the beef market collapsed, California ranchers were unprepared. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes. Nature also conspired to force economic change. During the winter of 1861–1862, a disastrous series of floods occurred in California, followed by 2 years of drought.

**City of Dana Point.** Dana Point was the first coastal community in the region to adopt a Spanish theme for its architecture. Anna Walters Walker of Laguna Beach led a number of other real estate investors in forming the San Juan Point Corporation. They conceived the town as an exclusive residential and rest resort, and planned for numerous recreational amenities. Residential streets were laid out and named for variously colored ships' lanterns. However, the first Dana Point development had a short life; fewer than 3 months after the grand opening, and with only a few buildings having been constructed, the development fell into foreclosure due to lackluster sales from the poor highway access and limited water supply.

In 1926, the Dana Point development was reopened by Sidney H. Woodruff, successful founder of *Hollywoodland* (aka Hollywood), who acquired 1,400 acres (ac) of the settlement. Promoting Dana Point as “the only romantic spot on the coast,” Woodruff hired architects to develop the town in the Spanish or Mediterranean Revival architectural styles. However, little development had occurred in the town before the Stock Market Crash of 1929 halted all development.

At the beginning of the 19<sup>th</sup> century, Dana Point was the only major mainland port between Santa Barbara and San Diego. Supplanted by later-developed ports, it remained a small coastal village into the 1970s. The community was rapidly transformed by master-planned improvements that included a six-lane highway that passed through the community to the Dana Point Harbor (1966) and connected it with Interstate 5 (I-5) and PCH.

Community leaders sought incorporation five separate times in order to maintain local control, but each time the County vetoed the plan. In 1989, once the area had been essentially built out, incorporation was allowed. Parts of several well-established communities, including Laguna Niguel, Monarch Beach, Monarch Bay, and Capistrano Beach, became part of the City of Dana Point.

**Project Site.** The South Shores Church’s 6 ac site lies along the southern boundary of the historic Rancho Niguel, one of the Spanish land grants. Juan Avila was the owner of Rancho Niguel before it was transferred to John Forster and later (among others) Marco Forster and Judge Richard Egan. Marcos Forster and Judge Egan sold it to Lewis F. Moulton in 1895, who then partnered with Pierre Daguerre to operate the Moulton-Daguerre Ranch (other times referred to as the Moulton Ranch). In 1951, the heirs of Lewis Moulton and Pierre Daguerre partitioned the ownership into a Moulton section and a Daguerre section. The Daguerre portion consisted of approximately 7,200 ac and included the Church’s 6 ac (and most of what is now Laguna Niguel). No structures were present on the Church’s 6 ac, and it appears to have been used as sheep and/or cattle grazing land only.

The Daguerre heirs (daughters of Pierre) sold their 7,200 ac to Eugene Shumaker, his second wife Florence Shumaker, and his adult children from his first marriage, Lawrence Shumaker and Jean Williams. The “Shumaker group” acquired the Daguerre portion in 1954 and sold the vast majority of it to the Laguna Niguel Corporation in 1959. The Laguna Niguel Corporation was set up by Paine Webber (in collaboration with the Boston development firm Cabot, Cabot and Forbes) to develop a new master-planned community that they called “Laguna Niguel.” The South Shores Church parcel was not part of the acreage sold to the Laguna Niguel Corporation; instead it was retained by Eugene and Florence Shumaker.

The original home was built on the property by the Shumakers sometime after 1954 and before the Church’s acquisition of the property in 1962.

After the Church acquired the parcel in 1962, it used the existing residence for all church functions. The square footage of the home was approximately 2,493 square feet (sf). In 1964, the garage/carport/maid quarters of the residence were converted into a nursery and Sunday school building (approximately 1,249 sf). This building was later demolished for construction of the new parking lot and Crown Valley Parkway access when the Sanctuary was built.

When the Chapel was built in 1968, the Church also changed the orientation of the front entrance to the original residence. Whereas the house originally had a front entrance facing Crown Valley Parkway that was accessed via a circular driveway, the Chapel construction included creation of a new main entrance facing south and facing the Chapel doors (a covered path was also created connecting the two buildings). Further modifications and additions to the main residence occurred in 1973 in the form of a new Pastor's study, a secretary's office and improvements to the bathroom and kitchen facilities.

Construction of the Fellowship Hall in 1981 involved further substantial alterations to the original residence. The Fellowship Hall involved expanding the original residence from just under 2,500 sf to well over 10,000 sf. The original front door entrance was eliminated, and the entire northern half of the home was essentially replaced with a new, much larger structure.

On September 24, 1995, a large fire swept through the original residence and the Fellowship Hall. The original living room, which had a fireplace and became known as the Fireside Room, was completely consumed, and the Fellowship Hall and the remaining portions of the original residence sustained major damage. Reconstruction included further substantial modifications, including elimination of the living room fireplace, revised fenestration, and a revised roofline.

In summary, the original residence has been so substantially altered over the period in which the Church has owned the property that it has little resemblance to the original structure.

**Paleontological Resources Existing Environmental Setting.** This section describes the baseline conditions and paleontological setting for the project site, based on fossil locality search records maintained by LSA and a field survey described in the *Paleontological Resources Assessment* prepared for the proposed project (Appendix D). The project site's geomorphology is predominantly within the Coastal Plains Region of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges Geomorphic Province is a 900 mi province that extends from the tip of Baja California to the Transverse Ranges in Los Angeles County. The Coastal Plains region is located between the Pacific Ocean to the west and the foothills of the Peninsular Ranges to the east. Geologic formations that are present, or may be present within the project site, are described in more detail below.

**San Onofre Breccia Deposits (Tso).** The San Onofre Breccia (Tso) is an early to middle Miocene deposit consisting of marine to locally non-marine. It is a red-brown, yellow-brown, gray breccia supported in a matrix that can range from clay to coarse sand. It also contains interbeds of conglomerate, sandstone, siltstone, mudstone, shale, and tuff. Clasts are mostly angular to subangular, with occasional subangular to subrounded cobbles and pebbles, and boulders as large as 12 ft in maximum dimension. Sand grains are angular to subrounded. These rock types are unusual, most requiring high pressure and relatively low temperature to form. The sediment source for the San Onofre Breccia is believed to be a western basement complex of rocks – the Catalina Schist. The clasts are similar to the basement rocks exposed on Santa Catalina Island, which is located approximately 58 kilometers (37 mi) to the southwest. Maximum thickness of the San Onofre Breccia is 795 meters (2,610 ft) in South Laguna and rapidly thins as the formation moves inland/eastward. It unconformably overlies the Topanga, Sespe, and Vaqueros Formations. It is unconformably overlain, but locally gradational and interfingering with the



Monterey Formation and Los Trancos and Paularino Members of the Topanga Formation. In Orange County, it is exposed from Dana Point to Newport Bay and is generally located within 6 mi of the coast. There are also extensive exposures in San Diego County from just south of the Orange/San Diego County line to south of Oceanside. Locally it contains fossils of gastropods, bivalves, and shark teeth. This unit has produced only rare and highly fragmented vertebrate fossils and, therefore, has a low sensitivity for containing important paleontological resources.

#### 4.4.4 Regulatory Setting

**Federal Regulations and Policies.** There are no federal regulations that are applicable to cultural or paleontological resources relevant to the proposed project.

#### State Regulations and Policies.

**California Environmental Quality Act Requirements.** The California Environmental Quality Act (CEQA) defines a “historical resource” as a resource that meets one or more of the following criteria: (1) listed in, or determined eligible for listing in, the California Register; (2) listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k); (3) identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or (4) determined to be a historical resource by a project’s Lead Agency (PRC Section 21084.1 and *State CEQA Guidelines* Section 15064.5(a)). In accordance with *State CEQA Guidelines* Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment.

CEQA also requires a Lead Agency to determine whether an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (*State CEQA Guidelines* Section 15064.5(c)). If the archaeological cultural resource meets the definition of a historical resource, it is treated like any other type of historical resource in accordance with *State CEQA Guidelines* Section 15126.4. Should the archaeological cultural resource meet the definition of a unique archaeological resource, it must be treated in accordance with *State CEQA Guidelines* Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, the effects to the resource are not considered significant effects on the environment (*State CEQA Guidelines* Section 15064.5(c)(4)).

CEQA also requires that a determination be made as to whether a project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature (*State CEQA Guidelines* Appendix G(v)(c)). If an impact is significant, CEQA requires feasible measures to minimize the impact (California Code of Regulations [CCR] Title 14(3) Section 15126.4 (a)(1)). California PRC Section 5097.5 also applies to paleontological resources (see below).

**PRC Section 5097.5.** PRC Section 5097.5 provides for the protection of cultural and paleontological resources and prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any lands under the jurisdiction of State or local authorities.

**California Health and Safety Code Section 7050.5.** California Health and Safety Code (HSC) Section 7050.5 states that in the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Native American Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

**California Register of Historical Resources (PRC Section 5020 et seq.)** State law also protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources in CEQA documents. A cultural resource is an important historical resource if it meets any of the criteria found in Section 15064.5(a) of the *State CEQA Guidelines*. These criteria are nearly identical to those for the National Register.

The State Historic Preservation Officer (SHPO) maintains the California Register. Properties listed, or formally designated eligible for listing, on the National Register are nominated to the California Register and then selected to be listed on the California Register, as are State Landmarks and Points of Interest.

### **Local Regulations and Policies.**

**City of Dana Point General Plan.** The City's Conservation/Open Space Element (July 9, 1991) addresses the preservation of the City's natural resources and open space areas. Goals and policies presented within the Conservation/Open Space Element are intended to encourage the provision of open space, cultural, and recreational opportunities for visitors to the City. Specifically, the following policies presented in the City's Conservation/Open Space Element are applicable to the proposed project:

**Policy 8.1:** Require reasonable mitigation measures where development may affect historical, archaeological or paleontological resources (Coastal Act/30244, 30250).

**Policy 8.2:** Retain and protect resources of significant historical, archaeological, or paleontological value for education, visitor-serving, and scientific purposes (Coastal Act/30244, 30250, 30253).

**City of Dana Point Municipal Code.** Section 9.07.250, Historic Resources, of the City's Zoning Code, establishes the City of Dana Point Historic Architectural Resources Inventory, which allows for the listing of historic resources in the City, and establishes the Historic Preservation Commission, which serves to maintain the Historic Architectural Resources Inventory. This section of the Zoning Code also requires City approval for any construction or alteration of designated historic structures.

Section 9.05.160 (Ordinance 93-16, November 23, 1993), of the City's Zoning Code requires the preparation of archaeological, paleontological, and historic resources studies for development projects in the City that may impact significant historic and natural resources. Furthermore, because the proposed project is within the Coastal Zone, it must also comply with Section 9.69.050, which requires that a project within the Coastal Zone obtain a Coastal Development Permit. This section also states that, "for sites adjacent to, containing or potentially containing cultural resources, an archaeological and/or paleontological survey prepared by a licensed archaeologist/paleontologist shall be required" (Part (b)(7)(B)) (added by Ordinance 93-16, November 23, 1993; amended by Ordinance 97-05, November 9, 1997).

#### 4.4.5 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on cultural and paleontological resources if it would:

- Threshold 4.4.1:** Cause a substantial adverse change in the significance of a historical resource pursuant to *State CEQA Guidelines* Section 15064.5;
- Threshold 4.4.2:** Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5;
- Threshold 4.4.3:** Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Threshold 4.4.4:** Disturb any human remains, including those interred outside of formal cemeteries.

#### 4.4.6 Project Impacts

- Threshold 4.4.1:** **Cause a substantial adverse change in the significance of a historical resource pursuant to *State CEQA Guidelines* Section 15064.5**

**Less than Significant Impact.** The project site is developed with an existing church and parking area. The site is also in close proximity to additional urbanized uses including residential uses, an adjacent arterial highway, and a nearby golf course/hotel. The project site was previously graded in conjunction with the existing church. As described above, a portion of the existing Administration and Fellowship Hall building was originally constructed as a single-family residence in the 1950s; however, due to the extensive structural modifications that have been completed over the past several decades and a large fire in 1995, the existing Administration and Fellowship Hall building does not retain any of the historical or architectural character of the original structure. Therefore, the site does not contain any historic-age structures that could be considered historical resources.. A subsequent *Cultural Resources Assessment* (Appendix D) prepared for the proposed project did not identify historical resources on site, and the property does not contain any local, State or federally listed historical resources, nor any resources eligible for listing. The proposed project will have a less than significant impact on historical resources, and no mitigation is required.

**Threshold 4.4.2: Cause a substantial adverse change in the significance of an archaeological resource pursuant to *State CEQA Guidelines* Section 15064.5**

**Less than Significant Impact with Mitigation Incorporated.** Archaeological deposits are uncommon on steep slopes, thus none are anticipated to be present on the slopes along the eastern project boundary. Soil on site developed as a result of weathering of the underlying bedrock and was in place prior to human occupation of the area. As such, any cultural material would have been on or near the ground surface and any subsurface material, if present, would have been due to bioturbation or other disturbance. Further, since no archaeological remains were observed, the likelihood of encountering previously unidentified intact subsurface cultural deposits within the project site is very low. The City's General Plan identifies the project site and immediate area (including the area where the site is located) as a "Culturally Sensitive Area." Based on the General Plan, grading and development in culturally sensitive areas have the potential to impact significant known and unknown archaeological resources. However, because the site has been substantially altered by past development, resources are uncommon on steep slopes, and no cultural resources were observed, it is not anticipated that any cultural resources would be encountered during construction activities. However, to ensure that no significant impacts occur in the event that unknown resources are discovered, Mitigation Measure 4.4.1 will be implemented to reduce potential impacts to a less than significant level. Mitigation Measure 4.4.1 requires the City to retain a qualified archaeologist to establish, in cooperation with the project developer and the City, procedures for temporarily halting or redirecting work to facilitate evaluation of cultural resources that may be discovered during construction activities.

At the completion of project construction, the proposed project would not result in further disturbance of native soils on the project site and, therefore, operation of the proposed project would not result in a substantial adverse change in the significance of an archeological resource as defined in Section 15064.5 of the *State CEQA Guidelines*.

**Threshold 4.4.3: Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature**

**Less than Significant Impact with Mitigation Incorporated.** Results of the literature review and locality search indicated that no paleontological resources have been recorded on the project site. A locality search of published localities from the project vicinity was conducted through copies of the Orange County paleontological localities maintained by LSA. The nearest fossil localities to the project site are from Salt Creek and also from exposures of the Monterey Formation nearer the coast. The project site is wholly underlain by the San Onofre Breccia, a middle Miocene marine and non-marine deposit with a low paleontological sensitivity. During a field survey of the project site, the presence of the San Onofre Breccia was confirmed; however, no fossil localities or suitable rock units were identified that would indicate there are significant fossil deposits within the project site. A single Miocene clam shell fossil was identified during the survey, but this appears to have been possibly transported onto the site from the Monterey Formation within Artificial Fill placed during the development of the property. However, mitigation will be required to reduce potential adverse impacts to unknown (buried) paleontological resources.

Mitigation Measure 4.4.2 requires the City to retain a qualified paleontologist to prepare a standard Paleontological Resources Impact Mitigation Program (PRIMP). This program would include excavation monitoring and specimen recovery, including screen washing, preparation, identification, and curation of collected specimens into a museum repository. A final report would provide details of monitoring and curation methods, fossil identification, and discussion, cataloging, and repository arrangements. Implementation of Mitigation Measure 4.4.2 would reduce potential impacts to unknown paleontological resources to less than significant.

**Threshold 4.4.4: Disturb any human remains, including those interred outside of formal cemeteries**

**Less than Significant Impact with Mitigation Incorporated.** Although no human remains are known to be on site or are anticipated to be discovered during project construction, precautionary mitigation is required to ensure that the proposed project does not impact or disturb any human remains during construction activities.

Mitigation Measure 4.4.3 requires compliance with HSC 7050.5 in the unlikely event that human remains are encountered during project grading. Upon discovery of the remains, the County Coroner would be notified immediately, and no further disturbance would occur until the County Coroner makes a determination of origin and disposition pursuant to PRC Section 5097.98. If the remains are determined to be Native American, the County Coroner would notify the NAHC, which would then determine and notify the MLD. With permission from the City, the MLD would complete inspection within 48 hours of notification by the NAHC. Implementation of Mitigation Measure 4.4.3 would reduce potential impacts related to the discovery of human remains on the project site to a less than significant level, and no additional mitigation is required.

#### **4.4.7 Cumulative Impacts**

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area. The cumulative study area for cultural and paleontological resources is the geographical area of the City of Dana Point, which is the geographical area covered by the City's General Plan, including all goals and policies therein. Future development in the City could include excavation and grading that could potentially impact archaeological and paleontological resources and human remains. The cumulative effect of the proposed project would be the incremental loss of these resources. The proposed project, in conjunction with other development in the City, has the potential to cumulatively impact archaeological and paleontological resources; however, it should be noted that each development proposal received by the City undergoes environmental review pursuant to CEQA. If there is a potential for significant impacts to archaeological or paleontological resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures. If subsurface cultural resources are assessed and/or protected as they are discovered, impacts to these resources would be less than significant. In addition, applicable City ordinances and General Plan policies would be implemented as appropriate to reduce the effects of additional development within the City.

Mitigation Measures 4.4.1 through 4.4.3 would be implemented during construction of the proposed project to reduce potential project impacts by ensuring avoidance, evaluation, and, as applicable, scientific recovery and study of any resources encountered. Therefore, with implementation of mitigation measures, the contribution of the proposed project to the cumulative loss of known and unknown cultural resources throughout the City would be reduced to a less than significant level.

#### **4.4.8 Level of Significance Prior to Mitigation**

Prior to implementation of mitigation measures, excavation and construction of the project would result in potentially significant impacts to unknown and unrecorded archaeological resources, paleontological resources, and human remains.

#### **4.4.9 Mitigation Measures**

**Mitigation Measure 4.4.1: Archaeological Monitors.** Prior to issuance of grading permits, and in adherence to the recommendations of the cultural resources survey, the project Applicant shall retain a qualified archaeological monitor, subject to review and approval by the City of Dana Point (City) Community Development Director, or designee. This monitor shall be present at the pregrade conference in order to explain the cultural mitigation measures associated with the proposed project. The monitor, in conjunction with the City and the project Applicant will prepare a plan that includes: (1) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a “significant” archaeological site); (2) a description of procedures for halting work on site and notification procedures; and (3) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, or human remains are found during monitoring, work shall stop within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist and any other appropriate individuals. Project personnel shall not collect or move any archaeological materials or human remains and associated materials. To the extent feasible, project activities shall avoid these deposits. Where avoidance is not feasible, the archaeological deposits shall be evaluated for their eligibility for listing in the California Register of Historic Places. If the deposits are not eligible, avoidance is not necessary. If the deposits are eligible, adverse effects on the deposits must be avoided, or such effects must be mitigated. Mitigation can include, but is not necessarily limited to, the following: excavation of the deposit in accordance with a data recovery plan (see California Code of Regulations Title 4(3) Section 5126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; production of a report detailing the methods, findings, and significance of the archaeological site and associated

materials; curation of archaeological materials at an appropriate facility for future research and/or display; an interpretive display of recovered archaeological materials at a local school, museum, or library; and public lectures at local schools and/or historical societies on the findings and significance of the site and recovered archaeological materials.

**Mitigation Measure 4.4.2: Paleontological Resources Impact Mitigation Program.** The Applicant shall retain a qualified paleontologist, subject to the review and approval of the City of Dana Point's (City) Community Development Director, or designee, to prepare a Paleontological Resources Impact Mitigation Program (PRIMP) for the proposed project prior to issuance of any grading permits. The PRIMP shall be consistent with the guidelines of the Society of Vertebrate Paleontology (SVP) and shall include, but not be limited to, the following:

- The paleontologist, or his/her representative, shall attend a preconstruction meeting.
- A qualified paleontological monitor working under the direction of an Orange County certified paleontologist shall "spot check" grading within the project site. Initially, spot checks are recommended for 2 to 3 hours twice per week during grading. If fossil resources are noted during the spot check, the monitoring level shall be increased to full time for the remaining duration of the grading.
- In the event that paleontological resources are encountered when a paleontological monitor is not present, work in the immediate area of the find shall be redirected and the paleontologist contacted to assess the find for scientific significance. The paleontologist shall make recommendations as to whether monitoring shall be required in these sediments on a full-time basis.
- Collected resources shall be prepared to the point of identification and permanent preservation in accordance with the recommendations of the *Paleontological Resources Assessment* (Appendix D). This includes washing and picking of mass samples to recover small vertebrate and invertebrate fossils and removal of surplus sediment around larger specimens to reduce the storage volume for the repository and the storage cost for the developer.
- Any collected resources shall be cataloged and curated into the permanent collections of an accredited scientific institution in accordance with the recommendations of the *Paleontological Resources Assessment* (Appendix D).
- At the conclusion of the monitoring program, a report of findings with an appended inventory of specimens shall be prepared. When

submitted to the City, the report and inventory shall signify completion of the program to mitigate impacts to paleontological resources in accordance with the recommendations of the *Paleontological Resources Assessment* (Appendix D).

**Mitigation Measure 4.4.3: Human Remains.** Consistent with the requirements of the California Code of Regulations (CCR) Section 15064.5(e), if human remains are encountered during site disturbance, grading, or other construction activities on the project site, work within 25 feet of the discovery shall be redirected and the County of Orange (County) Coroner notified immediately. No further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. If the remains are determined to be Native American, the County Coroner shall notify the Native American Heritage Commission (NAHC), which will determine and notify a most likely descendant (MLD). With the permission of the City of Dana Point (City), the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC. The MLD may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. Consistent with CCR Section 15064.5(d), if the remains are determined to be Native American and an MLD is notified, the City shall consult with the MLD as identified by the NAHC to develop an agreement for the treatment and disposition of the remains.

Upon completion of the assessment, the consulting archaeologist shall prepare a report documenting the methods and results and provide recommendations regarding the treatment of the human remains and any associated cultural materials, as appropriate, and in coordination with the recommendations of the MLD. The report shall be submitted to the City Community Development Director, or designee, and the South Central Coastal Information Center. The City's Community Development Director, or designee, shall be responsible for reviewing any reports produced by the archaeologist to determine the appropriateness and adequacy of findings and recommendations.

#### **4.4.10 Level of Significance after Mitigation**

Mitigation Measures 4.4.1 through 4.4.3 would reduce potential impacts to unknown or unrecorded archaeological resources, paleontological resources, and human remains to a less than significant level. With implementation of these measures, no significant unavoidable project or cumulative impacts to cultural or paleontological resources would occur.



#### **4.4.11 Significant Unavoidable Adverse Impacts**

There will be no significant unavoidable adverse impacts related to cultural resources.

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## 4.5 GEOLOGY AND SOILS

### 4.5.1 Introduction

This section provides a discussion of the existing geologic and soils environment and an analysis of potential impacts from implementation of the proposed project. This section also addresses the potential for structural damage due to the local geology underlying the project site, as well as slope stability, ground settlement, soil conditions, grading, and regional seismic conditions. This section summarizes information provided in the *Geotechnical Evaluation and Slope Stabilization Design for Environmental Impact Report Purposes, for Proposed Structures at the South Shores Church, City of Dana Point, California (Geotechnical Evaluation)* (LGC Geotechnical Inc. [LGC], May 20, 2013). In addition, a *Supplemental Geotechnical Evaluation and Slope Stabilization Design for Proposed Master Plan Alternative, for Environmental Impact Report Purposes, South Shores Church, City of Dana Point, California (Supplemental Geotechnical Evaluation)* (LGC, December 5, 2013) was prepared to address a project alternative design that is the focus in Section 5.0, Alternatives. These reports are included as Appendix E to this Draft EIR.

As described in Chapter 3.0, Project Description, the solution for the geotechnical issues at the slope on the northeast portion of the project site has been refined, based on church and community input during the public hearing process in the summer of 2009 and additional input from the Environmental Impact Report (EIR) Scoping Meeting in March 2010. Previous design iterations, including the design evaluated in the Initial Study/Mitigated Negative Declaration (IS/MND), addressed geotechnical issues through construction of a replacement fill buttress with substantial earthwork grading and construction phasing, and the installation of a mechanical stabilization system at the completion of earthwork grading. A revised plan was developed to reduce the complexity of construction and the potential impacts on surrounding neighborhoods. The project, as currently proposed, includes a redesigned geotechnical solution that would reduce earthwork and grading needs by employing mechanical and structural techniques (a caisson and tieback system) and would scale back the size of the retaining walls.

### 4.5.2 Methodology

To assess the impacts of the proposed project with respect to geologic and soil conditions, LGC reviewed previous geotechnical reports prepared by others for the project site, and drilled two more borings to gain additional information and create a baseline of comparison with previous geotechnical work. Off-site borings, geological maps, and aerial photographs by others were also analyzed during the geotechnical evaluation.

Soils, geologic, and seismic hazards were assessed with respect to significance within the context of Appendix G of the Guidelines for the California Environmental Quality Act (*State CEQA Guidelines*).

### 4.5.3 Existing Environmental Setting

**Project Site Description and Topography.** The existing South Shores Church site is a hilltop property located east of Crown Valley Parkway, approximately 0.25 mile (mi) from its intersection with Pacific Coast Highway (PCH). The site is bounded by Crown Valley Parkway to the west;

residential uses to the south; a descending graded cut slope, open space, and residential uses to the north; and to the east by a primarily natural slope that descends to a golf course, a bike path near the toe-of-slope, with a golf course beyond.

The topography of the project site ranges in elevation from approximately 205 feet (ft) above mean sea level (amsl) to 275 ft amsl, sloping from west to east with an elevation differential of approximately 70 ft. The project site is currently developed with existing South Shores Church facilities (i.e. Sanctuary, Chapel, Administration/Fellowship Hall, Preschool, and a surface parking lot) and contains ornamental landscaping primarily along the northern and eastern boundaries of the site.

**Regional Geologic Setting.** The project site is located within the Peninsular Ranges Geomorphic Province, more specifically within the San Joaquin Hills along the southern boundary of the broad Los Angeles Sedimentary Basin. The San Joaquin Hills is an area characterized by coastal uplift and thought to be the result of a blind thrust fault at depth.<sup>1</sup> The project site is located on a hilltop that is underlain by materials from the Tertiary-age San Onofre Formation, landslide materials derived from the San Onofre Formation, and Artificial Fill.

**Subsurface Conditions.** The majority of the project site is underlain by the San Onofre Breccia bedrock formation. This marine sedimentary formation is comprised of cobble conglomerate zones, cemented zones, and a few zones of well-bedded fine-grained material. The zones of fine-grained material, consisting of siltstone and claystone, form the weaker layers of the bedrock formation. The Tertiary Monterey Formation was also identified off-site near the bottom of the large slope on the east side of the project site. This formation is primarily siltstone and is known for its landslide potential.

A landslide that follows one of the fine-grained weak layers of the San Onofre Breccia bedrock formation is present in the northeastern portion of the project site. A second weak layer, referred to as the Silty Clay Bed, was identified at depth below the landslide. The material between the landslide and the Silty Clay Bed is generally described as tectonically fractured bedrock and queried landslide. The material below the Silty Clay Bed is bedrock.

According to the City of Dana Point (City) 2014–2021 Housing Element, a landslide occurred in 1992 at the Monarch Coast Apartments, located adjacent to and northeast of the project site. This landslide required demolition of 32 apartment units.<sup>2</sup>

In addition, the following materials were encountered during recent and previous subsurface investigations on the project site.

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<sup>1</sup> A Blind Thrust Fault is defined as a fault that does not rupture all the way up to the surface so that there is no evidence of the fault on the ground.

<sup>2</sup> City of Dana Point General Plan 2014-2021 Housing Element. Adopted December 3, 2013.

**Artificial Fill Soils.** Artificial Fill soils are present across the project site with the exception of the central areas of the existing surface parking lot. These soils are found at a maximum depth of 25 ft in the southeast portion of the site. Where encountered, this fill was reddish-brown to dark brown clayey sand with gravel, moist, and dense.

**Quaternary Landslide.** A boring taken through the upper portion of the landslide at the northeastern portion of the site indicated that at depth, the basal rupture surface of the landslide is estimated to follow one of the weak beds of the San Onofre Breccia and/or the Monterey Formation near the toe of slope. Where encountered, the landslide material was highly to moderately weathered cobble breccia and clayey sandstone, moist, and dense.

**Tertiary San Onofre Breccia.** The San Onofre Breccia Formation is the primary bedrock formation underlying the project site. Variable brecciated<sup>1</sup> cobbles and gravels of a metamorphic origin are weak- to well-cemented within clayey sandstone, brown to gray, moist, and very dense. Few thin beds of claystone and siltstone materials were encountered during subsurface exploration. Zones of nested cobbles and boulders were also encountered typically at the base of the stratigraphic sequence. The upper, weathered portion of the San Onofre Formation was observed to be more oxidized, slightly less dense, and weakly cemented when compared to the same material at depth. Below the Silty Clay Bed feature, the bedrock was observed to be fresh, unoxidized, consistently grey, very dense, and weak- to well-cemented.

**Groundwater Conditions.** Minor groundwater seepage was encountered sporadically during the geologic evaluation conducted by LGC, as well as during past geological surveys on the project site, at various depths within deep borings. A static water table was encountered at approximately 90 ft in depth during the geological survey conducted by LGC.

**Seismicity and Faulting.** The project site is not located within an active fault zone,<sup>2</sup> but may still be impacted by ground shaking. Some of the active faults that may impact the project site include the San Andreas fault (55 mi northeast of the project site), the Newport-Inglewood fault (3 mi west of the project site), and the Whittier Elsinore fault (22 mi northeast of the project site). The closest significant fault to the project site is the active off-shore portion of the Newport-Inglewood fault zone. As stated previously, the project site is located within the San Joaquin Hills, which have been uplifted along a blind thrust fault at depth. The project site is not located within an Alquist/Priolo Earthquake Fault Zone, and there are no known active or potentially active faults on site.

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<sup>1</sup> Brecciated is defined as rock that has been broken into fragments.

<sup>2</sup> An active fault is a fault that is likely to have another earthquake sometime in the future. Faults are commonly considered to be active if there has been movement observed or evidence of seismic activity during the last 11,000 years.

Although there are no active faults on-site, a normal fault<sup>1</sup> was observed on-site in a geotechnical boring at a depth of 18 ft. This fault is oriented into-slope and within the bedrock of the site. A similarly oriented shear was also reported in a boring for the northerly adjacent Monarch Coast Apartments.

### **Nonseismic Geologic Constraints.**

**Expansive Soils.** Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. The expansion potential of the near-surface soils underlying the project site have been identified as low to moderate based on visual observation. Soil testing indicated that on-site soils have a “moderate” expansion potential.

**Corrosive Soils.** Corrosive soils contain chemical constituents that cause damage to construction materials such as concrete and ferrous metals. One such constituent is water-soluble sulfate, which, if high enough in concentration, can react with and damage concrete. Electrical resistivity, chloride content, and percentage of hydrogen (pH) levels are indicators of the soil’s tendency to corrode ferrous metals. Corrosion potential of the near surface soils have been evaluated in a previous geotechnical report for the site. Information in this report indicates that the level of sulfate exposure for concrete is classified as “not applicable.” However, the same report indicated that on-site soils are actually very highly corrosive to buried metals. Therefore, additional testing will be necessary with appropriate mitigation, if any.

### **Seismically Induced Hazards.**

**Ground Shaking and Surface Fault Rupture.** The primary seismic effects associated with earthquakes are ground shaking and surface fault rupture.

Ground shaking due to seismic events (earthquakes) would typically be considered to be the greatest source of potential damage to structures. Seismic shaking is characterized by the physical movement of the land surface during and subsequent to an earthquake. Seismic shaking has the potential to cause destruction and damage to buildings and property, including damage or destruction of gas or electrical utility lines, blockage of surface seepage and groundwater flow, changes in groundwater flow, dislocation of street alignments, displacement of drainage channels and drains, and possible loss of life. In addition, groundshaking can induce several kinds of

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<sup>1</sup> Normal faults occur where two blocks of rock are pulled apart. In a normal fault, the fault is at an angle, so one block of rock lies above the fault while the other lies below it. The rock above it is the hanging wall and the rock below it is the footwall. In a normal fault, the hanging wall moves downwards relative to the footwall.

secondary seismic effects, including liquefaction, differential settlement, and landslides, all of which are described below.

The intensity of seismic shaking during an earthquake depends largely on geologic formation conditions of the materials comprising the upper several hundred feet of the earth's surface. The greatest amplitudes and longest durations of ground shaking occur on thick, water-saturated, unconsolidated alluvial sediments. Ground shaking can also cause ground failure or deformation due to lurching and liquefaction.

Peak ground acceleration (PGA) is a measurement of earthquake-induced acceleration in a particular area and is an important factor for structural engineering against earthquake damage for buildings. It can be thought of as the maximum acceleration the ground may experience during an earthquake. Ground may shake in a given geographic area based on several factors such as the distance from an active fault, the Maximum Credible Earthquake event expected from that fault, and the underlying geologic units. The PGA at the project site for the MCE event is estimated to be 0.43 g.<sup>1</sup>

Surface rupture is the displacement and cracking of the ground surface that occurs along a fault trace. Unlike seismically induced ground shaking, which can affect a wide geographic area, surface rupture is confined to the area very near the fault. As previously stated, the project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, so the possibility for surface fault rupture is considered to be low. The primary seismic hazard for the proposed project site is ground shaking due to the proximity of major active faults. Known active faults capable of producing strong ground shaking at the site include the San Andreas fault, the Newport-Inglewood fault, the San Joaquin Hills Blind Thrust fault, and the Whittier Elsinore fault.

**Liquefaction, Lateral Spreading, Subsidence, and Soil Collapse.** Liquefaction is caused by sudden temporary increases in pore water pressure due to seismic densification or other displacement of submerged granular soils. Intervals of loose sand may, therefore, be subject to liquefaction if these materials are or were to become submerged and are also exposed to strong seismic ground shaking. Seismic ground shaking of relatively loose granular soils that are saturated or submerged can cause the soils to liquefy and temporarily behave as a dense fluid. This loss of support can produce local ground failure such as settlement or lateral spreading that may damage overlying improvements.

Lateral spreading typically occurs as a form of horizontal displacement of relatively flat-lying alluvial material toward an open or "unconfined" face such as an open body of water, channel, or excavation. In soils, this movement is due to liquefaction.

Subsidence is the sinking, settlement, or collapse of the ground surface relative to the surrounding area, with little or no horizontal movement.

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<sup>1</sup> "g" is a common value of acceleration equal to 32 feet/second<sup>2</sup> (ft/sec<sup>2</sup>).

According to the project *Geotechnical Evaluation*, the project site is not located within an area of potential liquefaction, and is not considered to have a potential risk for lateral spreading, subsidence, or soil collapse based on the soil types underlying the project site.

**Seismically Induced Ground Settlement.** This type of secondary seismic effect can result in damage to property when an area settles to different degrees over a relatively short distance. The sinking or settlement of a structure, area of fill, or other imposed load is usually the result of densification of the underlying soil. Soils susceptible to seismically induced settlement typically include loose granular materials. Based on the material types underlying the project site, the potential for seismically induced settlement is low.

**Slope Instability and Seismically Induced Landslides.** The downslope movement of loose rock or soil is also a potential secondary seismic effect that can occur during strong ground shaking. The project site is located in an area with potential for earthquake-induced landslide. As discussed above, a landslide that follows one of the weak layers of the San Onofre Breccia bedrock formation is present in the northeastern portion of the project site. In addition, a second weak layer was identified at depth below the landslide.

The area of the project site where the existing Sanctuary is located is reportedly underlain by a variable thickness of fill and ultimately bedrock of the San Onofre Formation. The Sanctuary is located in an area reported to possess an engineered factor of safety greater than 1.5.

#### 4.5.4 Regulatory Setting

##### Federal Policies and Regulations.

**National Pollution Discharge Elimination System.** Direct discharges of pollutants into waters of the United States are not allowed, except in accordance with the National Pollutant Discharge Elimination System (NPDES) program established in Section 402 of the Clean Water Act (CWA). A Storm Water Pollution Prevention Plan (SWPPP) prepared in compliance with an NPDES Permit describes erosion and sediment controls, runoff water quality monitoring, means of waste disposal, implementation of approved local plans, control of postconstruction sediment and erosion control measures and maintenance responsibilities, and nonstorm water management controls. Dischargers are also required to inspect construction sites before and after storms to identify storm water discharge from construction activity and to identify and implement controls where necessary.

##### State Policies and Regulations.

**Alquist-Priolo Earthquake Fault Zoning Act (1972).** The Alquist-Priolo Earthquake Fault Zoning Act (Public Resource Code [PRC] Section 2621 et seq.) is the principal California State guidance to prevent the construction of habitable structures on the surface trace of active earthquake faults. If an active fault is found, a structure for human occupancy must be set back from the fault (generally 50 ft). The Alquist-Priolo Earthquake Fault Zoning Act only addresses



the hazard of surface fault rupture and does not consider other earthquake hazards. There are no Alquist-Priolo Earthquake Fault Zones established at or in the near vicinity of the project site, and procedures and regulations as recommended by the California Geological Survey (CGS) for investigations conducted in such zones do not specifically apply.

**Seismic Hazard Mapping Act (1990).** The Seismic Hazard Mapping Act (SHMA) was adopted by the State in 1990 for the purpose of protecting public safety from the effects of (nonsurface fault rupture) earthquake hazards. The CGS prepares and provides local governments with seismic hazard zones maps that identify areas susceptible to amplified shaking, liquefaction, earthquake-induced landslides, and other ground failures. The seismic hazards zones are referred to as “zones of required investigation” because site-specific geological investigations are required for construction projects located within these areas. Before a project can be permitted, a geologic investigation, evaluation, and written report must be prepared by a licensed geologist to demonstrate that the potential hazards can be successfully mitigated. In addition, sellers (and their agents) of real property within a mapped Seismic Hazard Zone must disclose that the property lies within such a zone at the time of sale.

**California Building Code (2013).** The California Code of Regulations (CCR), Title 24, Part 2, the California Building Code (CBC), provides minimum standards for building design in the State. Local codes are permitted to be more restrictive than Title 24, but not less restrictive. The procedures and limitations for the designs of structures are based on site characteristics, occupancy type, configuration, structural system height, and seismic design category. Construction activities are subject to occupational safety standards for excavation, shoring, and trenching as specified in California Occupational Safety and Health Administration (Cal/OSHA) regulations (CCR, Title 8).

**California Health and Safety Code.** Sections 17922 and 17951–17958.7 of the California Health and Safety Code require cities and counties to adopt and enforce the current edition of the CBC, including a grading section. The City enforces these provisions (Title 8, Chapter 8.02, Section 8.02.001 of the City’s Municipal Code). Sections of Volume 2 of the CBC specifically apply to select geologic hazards. Chapter 16 of the 2013 CBC addresses requirements for seismic safety. Chapter 18 regulates excavation, foundations, and retaining walls. Chapter 33 contains specific requirements pertaining to site demolition, excavation, and construction.

## **Local Policies and Regulations.**

**Local Implementation Plan.** Per the requirements in the Drainage Area Management Plan (DAMP) and the Municipal Separate Storm Sewer System (MS4) Permit, the City has adopted a Local Implementation Plan (LIP) implementing the DAMP and MS4 Permit in its jurisdiction. Using the LIP as a guide, the City will approve Water Quality Management Plans (WQMPs) for new development and redevelopment projects within its jurisdiction as part of the development plan and entitlement approval process. WQMPs for new development and significant redevelopment projects that fall under specific priority project categories must include Site

Design, Routine Structural and Nonstructural, and Treatment Control Best Management Practices (BMP); include an Operations and Maintenance Plan; and address Low Impact Development (LID) Retention/Biofiltration and hydromodification criteria. The priority project categories are those determined by the Regional Water Quality Control Board (RWQCB) to have the greatest potential to impact receiving waters with polluted runoff. The proposed project is considered a “priority” project because it would add or replace at least 5,000 square feet (sf) or more of impervious surface.

**Model Water Quality Management Plan.** Pursuant to Order No. R9-2009-0002, the County of Orange (County) prepared a Model Water Quality Management Plan (Model WQMP) (December 20, 2013) to assist with project development in south Orange County. To assist with compliance with the MS4 permit requirements and to explain aspects of the Model WQMP, the County also prepared a Technical Guidance Document (TGD) (December 20, 2013).

**Chapter 8.01 of the City of Dana Point Municipal Code.** Chapter 8.01 of the City Municipal Code regulates grading and excavation activities. This chapter of the Municipal Code requires erosion control plans, prepared in accordance with Subarticle 13 of the Grading Manual, to be submitted to the City for approval by September 1<sup>st</sup> each year for all projects under grading permits.

**Chapter 8.02 of the City of Dana Point Municipal Code.** Chapter 8.02, of the City Municipal Code enforces Part 2 of Title 24 of the CBC. The purpose of this chapter is to establish regulations for the erection, construction, enlargement, alteration, repair, improvement, removal, conversion, demolition, occupancy, equipment, use, height, area, and maintenance of all buildings and structures within the City.

**Chapter 15.10 of the City of Dana Point Municipal Code.** Chapter 15.10 of the City Municipal Code regulates storm water and surface runoff water quality. The Municipal Code requires developers of a priority development project to submit a WQMP to the City for approval. The Municipal Code specifies that all WQMPs must be consistent with the City’s Model WQMP, including demonstrating compliance with all applicable WQMP requirements and LID Retention/Biofiltration and hydromodification requirements provided for in the City’s LIP. Each Applicant must submit details to the City regarding the mechanism to be utilized to ensure ongoing long-term maintenance of all structural postconstruction BMPs. In addition, the developer must provide the City with evidence of coverage under the Construction General Permit (CGP), the General Development Permit (GDP), or any other applicable General Permit.

**City of Dana Point General Plan Public Safety Element.** The primary goal of the City’s General Plan Public Safety Element is to identify features which exist in the City that represent a potential danger to the safety of the citizens, sites and structures, public facilities, and infrastructure. The element also establishes goals and policies to minimize danger to residents.

Another key component of the element is the manner in which emergency response agencies cooperate with one another and with jurisdictions during emergency situations.

The following policy in the General Plan Public Safety Element applies to the proposed project:

**Goal 1:** Reduce the risk to the community from geologic hazards including bluff instability, seismic hazards, and coastal erosion.

**Policy 1.1:** Require review of soil and geologic conditions by a State-Licensed Engineering Geologist under contract to the City, to determine the stability prior to the approval of development where appropriate. (Coastal Act/30250, 30253)

**Policy 1.12:** Specifically review and limit development on lands with seismic, slide, liquefaction, fire, or topographic constraints.

Preparation of this Draft EIR, specifically this section, analyzes potential geological impacts as a result of project implementation and prescribes mitigation measures where potential impacts are identified. Therefore, the proposed project would be consistent with the geology-related goals and policies outlined in the City's General Plan Public Safety Element.

#### 4.5.5 Thresholds of Significance

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines* and the City's CEQA Thresholds of Significance. Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to geology and soils if it would:

- Threshold 4.5.1:** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
- i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault,
  - ii) Strong seismic ground shaking,
  - iii) Seismic-related ground failure, including liquefaction,
  - iv) Landslides;
- Threshold 4.5.2:** Result in soil erosion or the loss of topsoil;
- Threshold 4.5.3:** Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Threshold 4.5.4:** Be located on expansive soil, as defined in Section 1803.5.3 of the 2010 California Building Code, creating substantial risk to life or property; or

**Threshold 4.5.5:** Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.

The project does not include the use of septic tanks or alternative waste water disposal systems. As a result, there would be no impact related to the capability of on-site soils to adequately support septic tanks. Therefore, Threshold 4.5.5 is not discussed further.

#### 4.5.6 Project Impacts

**Threshold 4.5.1:** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- i) **Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault**

**Less than Significant Impact.** There are no known active or potentially active faults crossing the project site. As stated above, the project site is not located within a currently designated Alquist-Priolo Earthquake Fault Zone, so the possibility for surface fault rupture is low. The closest active fault is the Newport-Inglewood fault, located approximately 3 mi from the project site. As the project site is not located in an Alquist-Priolo Earthquake Fault Zone and there is no evidence of active faulting on or around the immediate project site, the potential for ground rupture to affect the proposed project site is considered to be less than significant, and no mitigation is required.

**Threshold 4.5.1:** Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

- ii) **Strong seismic ground shaking**

**Less than Significant Impact with Mitigation.** As with all of Southern California, the project site is subject to strong ground motion resulting from earthquakes on nearby faults. There are several faults in the vicinity of the project site that are capable of producing strong ground motion, including the San Andreas fault, the Newport-Inglewood fault, the San Joaquin Hills Blind Thrust fault, and the Whittier Elsinore fault. During an earthquake along any of these faults or other faults in the region, seismically induced ground shaking would be expected to occur. The severity of the shaking would be influenced by the magnitude of earthquake, the distance of the project site to the seismic source, the soil conditions, and the depth to groundwater.

PGA is a measure of earthquake acceleration on the ground and an important input parameter for earthquake engineering. Based on the project *Geotechnical Evaluation*, a PGA of 0.43 g provided for the project site. This acceleration is consistent with other areas in this region of California that are underlain by similar geologic materials and indicates that strong seismic ground shaking generated by seismic activity is considered a potentially significant impact that may affect the proposed project. Mitigation Measure 4.5.1 requires the Applicant to comply with the recommendations of the project *Geotechnical Evaluation* and the most current CBC, which stipulates appropriate seismic design provisions that would be implemented with project design and construction. With implementation of

Mitigation Measure 4.5.1, potential project impacts related to seismic ground shaking would be reduced to a less than significant level.

**Threshold 4.5.1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**iii) Seismic-related ground failure, including liquefaction**

**Less than Significant Impact.** Liquefaction commonly occurs when three conditions are present simultaneously: (1) high groundwater; (2) relatively loose, cohesionless (sandy) soil; and (3) earthquake-generated seismic waves. The presence of these conditions may cause a loss of shear strength and, in many cases, ground settlement. As stated previously, the project site is not located within an area of potential liquefaction, and is not considered to have a potential risk for lateral spreading, subsidence, or soil collapse. Therefore, potential impacts associated with seismically induced ground failure and liquefaction would be very low and are considered to be a less than significant impact. No mitigation is required.

**Threshold 4.5.1: Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

**iv) Landslides**

**Less than Significant Impact with Mitigation.** Landslides and other forms of mass wasting, including mud flows, debris flows, and soil slips occur as soil moves downslope under the influence of gravity. Landslides are frequently triggered by the introduction of significant water or seismic shaking. As described above, landslides have been documented within and adjacent to the project site. Therefore, the potential for additional landslides to occur is considered a potentially significant impact. Potential landslide impacts are addressed through proper site preparation and design, including on-site geotechnical investigations and implementation of site-specific grading recommendations and structural engineering design criteria. The proposed new structures to the north of the existing Sanctuary would be protected with retaining walls and a caisson/tieback array, as recommended in the *Geotechnical Evaluation*. However, all unimproved slope areas, including those located below the retaining walls and caisson/tieback along the northeast portion of the project site, would remain at risk for failure. No structures or permanent uses are planned on these unimproved slopes. Practices such as establishing plants, avoiding concentration of water to the subsurface, discouraging rodent activity, and repairing erosion rills would help limit the potential for the failure of unimproved slopes. Mitigation Measure 4.5.1 incorporates the recommendations required to address potential impacts from landslides from the *Geotechnical Evaluation*. Mitigation Measure 4.5.2 requires ongoing slope maintenance procedures to be conducted on the unimproved slopes during project duration in order to reduce potential failure of these slopes. With implementation of Mitigation Measures 4.5.1 and 4.5.2, project impacts relating to landslides would be less than significant.

**Threshold 4.5.2: Result in soil erosion or the loss of topsoil**

**Less than Significant Impact with Mitigation.** As discussed in Section 4.8, Hydrology and Water Quality, during construction activities, soil would be exposed, and there would be an increased

potential for soil erosion compared to existing conditions due to soil disturbance and the exposure of soil to weather conditions (e.g., wind and rain). During a storm event, soil erosion and loss of topsoil could occur at an accelerated rate. As specified in Mitigation Measure 4.8.1, Hydrology and Water Quality section, the project would comply with the requirements of the CGP. Under the CGP, the project would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities to minimize erosion. Construction BMPs would include, but not be limited to, Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site. In addition, as specified in Mitigation Measure 4.8.2, Hydrology and Water Quality section, erosion control plans would be prepared annually during construction and submitted to the City Department of Public Works. The erosion control plans shall detail the BMPs implemented during construction. With implementation of Mitigation Measures 4.8.1 and 4.8.2, construction impacts related to erosion would be less than significant.

The proposed project would result in a net increase in storm water runoff; however, the proposed project also incorporates an on-site detention system consisting of an underground detention system to reduce peak flows during storm events to below that of existing conditions. Therefore, operation of the proposed project would not result in substantial erosion, and no further mitigation is required.

**Threshold 4.5.3: Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse**

**Less than Significant Impact with Mitigation.** As described above, landslides have been documented within and adjacent to the project site. Therefore, the potential for additional landslides to occur is considered a potentially significant impact. Potential landslide impacts are addressed through proper site preparation and design, including on-site geotechnical investigations and implementation of site-specific grading recommendations and structural engineering design criteria. The proposed new structures to the north of the existing Sanctuary would be protected with retaining walls and a caisson/tieback array, as recommended in the *Geotechnical Evaluation* and as described previously. However, as discussed above, all unimproved slope areas, including those located below the retaining walls and caisson/tieback array along the northeast portion of the project site, would remain at risk for failure. No structures or uses are planned on these unimproved slopes. Practices such as establishing plants, avoiding concentration of water to the subsurface, discouraging rodent activity, and repairing erosion rills would help limit the potential for the failure of unimproved slopes. Mitigation Measure 4.5.1 incorporates the recommendations required to address potential impacts from landslides as included in the *Geotechnical Evaluation*. Mitigation Measure 4.5.2 requires ongoing slope maintenance procedures to be conducted on the unimproved slopes during project operation in order to reduce potential failure of these slopes. With implementation of Mitigation Measures 4.5.1 and 4.5.2, project impacts relating to landslides would be less than significant.

Corrosive soils contain chemical constituents that cause damage to construction materials such as concrete and ferrous metals. As discussed previously, on-site soils are very highly corrosive to buried metals. Corrosive soils could potentially create a significant hazard to the project by weakening the structural integrity of the metal used to construct the building and could potentially lead to structural instability and are considered a potentially significant impact. Therefore, additional soil testing and analysis will be required as part of the final geotechnical design report. Mitigation Measure 4.5.3

requires that such testing and analysis be conducted to address the potential impacts of corrosive soils on the construction of the project. Should such measures be necessary, they will be conditioned with the project. Therefore, adherence to Mitigation Measure 4.5.3 would reduce project impacts related to corrosive soils to a less than significant level.

The project site is not located within an area of potential liquefaction, and is not considered to have a potential risk for lateral spreading, subsidence, or soil collapse based on the soil types underlying the project site. Therefore, no impact related to lateral spreading, subsidence, liquefaction, or collapse would occur, and no mitigation is required.

**Threshold 4.5.4: Be located on expansive soil, as defined in Section 1803.5.3 of the 2013 California Building Code, creating substantial risk to life or property**

**Less than Significant Impact with Mitigation.** Expansive soils contain types of clay minerals that occupy considerably more volume when they are wet or hydrated than when they are dry or dehydrated. Volume changes associated with changes in the moisture content of near-surface expansive soils can cause uplift or heave of the ground when they become wet or, less commonly, cause settlement when they dry out. Based on the geotechnical engineer's visual observation and testing of the near surface soils on the project site, expansive soil potential at the project site is anticipated to range from low to moderate. Therefore, the potential for expansive soils in areas proposed for construction would be considered a potentially significant impact. Construction techniques that are employed to address potential adverse effects of expansive soils may include, but are not limited to, deepened foundations, post-tension foundations, and moisture conditioning. The *Geotechnical Evaluation* contains specific construction recommendations to reduce project impacts associated with expansive soils to a less than significant level. Mitigation Measure 4.5.1 incorporates the recommendations related to expansive soils from the *Geotechnical Evaluation*. Therefore, adherence to Mitigation Measure 4.5.1 would reduce project impacts related to expansive soils to a less than significant level.

#### **4.5.7 Level of Significance Prior to Mitigation**

The potential for surface fault rupture, soil erosion during operation, and ground failure due to lateral spreading, subsidence, liquefaction, or collapse is less than significant, and no mitigation is required. The potential impacts related to soil erosion during construction, seismic shaking, landslides, corrosive soils, and expansive soils would be potentially significant prior to mitigation.

#### **4.5.8 Mitigation Measures**

**Mitigation Measure 4.5.1 Incorporation of and compliance with the recommendations in the *Geotechnical Evaluation*.** All grading operations and construction shall be conducted in conformance with the recommendations included in the geotechnical evaluation on the proposed project site that has been prepared by LGC Geotechnical, Inc., titled *Geotechnical Evaluation and Slope Stabilization Design for Environmental Impact Report Purposes, for Proposed Structures at the South Shores Church, City of Dana Point, California* (May 20,

2013) and *Supplemental Geotechnical Slope Stabilization Design* by LGC (December 5, 2013) as applicable, or any subsequent geotechnical evaluation prepared for the project. When finalized plans for the proposed development are approved the geotechnical consultant shall perform a review of the plans and any additional work in order to provide a construction level geotechnical report addressing full ground stabilization, foundation, and grading recommendations. Design, grading, and construction shall be performed in accordance with the requirements of the City of Dana Point (City) Municipal Code and the California Building Code (CBC) applicable at the time of grading, appropriate local grading regulations, and the recommendations of the project geotechnical consultant as summarized in a final written report, subject to review and approval by the Director of Public Works, or designee, prior to issuance grading permits.

Specific recommendations in the geotechnical evaluations address the following and shall be incorporated into the final project plans and construction level geotechnical report:

1. Mechanical slope stabilization
2. Tieback access excavation
3. Retaining walls for the Community Life Center and Christian Education building
4. Retaining walls for the Pre-School/Administration building and Meditation Garden
5. Existing crib wall
6. Parking structure
7. Deepened foundations for top-of-slope structures
8. Site earthwork
9. Geotechnical consultant role during construction
10. Temporary stability
11. Subsurface drainage
12. Grading plan review

Grading plan review shall also be conducted by the Director of Public Works, or designee, prior to the start of grading to verify that the requirements developed during the geotechnical evaluation have been appropriately incorporated into the project plans. Design, grading, and construction shall be conducted in accordance with the specifications of the project geotechnical consultant as summarized in a final report based on the CBC applicable at the time of grading



and building and the City Municipal Code. On-site inspection during grading shall be conducted by the project geotechnical consultant and the Director of Public Works, or designee, to ensure compliance with geotechnical specifications as incorporated into project plans.

#### **Mitigation Measure 4.5.2**

**Maintenance of Unimproved Slopes.** Prior to issuance of grading permits, the Applicant shall submit for review and approval by the City Director of Community Development and Director of Public Works a grading plan review report that includes a long-term slope maintenance program for the unimproved slopes, such as establishing plants, avoiding concentration of water to the subsurface, discouraging rodent activity, and repairing erosion rills. The Applicant shall demonstrate to the City Director of Community Development and Director of Public Works that he/she is prepared to implement all slope maintenance procedures described in the grading plan review report. All future transfers of the property shall have conditions requiring the recipient to assume responsibility for implementation of the slope maintenance program.

#### **Mitigation Measure 4.5.3**

**Additional Testing and Analysis for Corrosive Soils.** A final geotechnical design report, including the structural foundation designs, shall be prepared by the project Applicant and submitted for review and approval by the City Community Development Director and the Building Official prior to issuance of any construction permits. The final geotechnical design report shall include the results of additional soil testing and analysis to determine the corrosivity of the soils. The project engineer shall design the structural foundations in accordance with the results of the soil testing.

### **4.5.9 Cumulative Impacts**

**Less than Significant Impact.** As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for geology and soils. For geology and soils, the study area considered for the cumulative impact of other projects consisted of (1) the area that could be affected by proposed project activities, and (2) the areas affected by other projects whose activities could directly or indirectly affect the geology and soils of the proposed project site. In general, only projects occurring adjacent to or very close to the project site were considered. None of the six cumulative projects as identified in Table 4.A (Section 4.0) are located adjacent to or in the immediate vicinity of the proposed project, and therefore would not contribute to cumulative geology and soils impacts.

In addition, the proposed project, as well as foreseeable projects, would be required to comply with the applicable State and local requirements, including, but not limited to, the City's Municipal Code and the California Building Code. Therefore, the project-specific geology and soils impacts, as well as the impacts associated with other projects, would be reduced to a less than significant level. Seismic impacts are a regional issue and are also addressed through compliance with applicable codes

and design standards. For these reasons, the project's contribution to cumulative geotechnical and soil impacts is less than cumulatively significant.

#### **4.5.10 Level of Significance After Mitigation**

With implementation of Mitigation Measures 4.5.1, 4.5.2, 4.5.3, 4.8.1 and 4.8.2, all identified potentially significant impacts related to seismic shaking, landslides, corrosive soils, soil erosion, expansive soils, and mudflow would be reduced to less than significant levels.

#### **4.5.11 Significant Unavoidable Adverse Impacts**

No significant unavoidable adverse impacts related to geology and soils were identified.

## 4.6 GREENHOUSE GAS EMISSIONS

### 4.6.1 Introduction

This section provides a discussion of global climate change (GCC), existing regulations pertaining to GCC, and an analysis of greenhouse gas (GHG) emissions associated with the South Shores Church Master Plan (proposed project) located in the City of Dana Point (City), Orange County (County). This analysis is based on the *Air Quality Analysis for the South Shores Church Master Plan* (LSA Associates, Inc. [LSA], August 2014) prepared for the proposed project and included in Appendix B of this Draft Environmental Impact Report (EIR).

### 4.6.2 Methodology

The recommended approach for GHG analysis included in the State of California Governor's Office of Planning and Research's (OPR) June 2008 Technical Advisory is to: (1) identify and quantify GHG emissions, (2) assess the significance of the impact on GCC, and (3) if significant, identify alternatives and/or mitigation measures to reduce the impact to below a level of significance.<sup>1</sup> The June 2008 Technical Advisory provides some additional direction regarding planning documents, as follows: "CEQA can be a more effective tool for GHG emissions analysis and mitigation if it is supported and supplemented by sound development policies and practices that will reduce GHG emissions on a broad planning scale and that can provide the basis for a programmatic approach to project-specific CEQA analysis and mitigation. For local government lead agencies, adoption of general plan policies and certification of general plan EIRs that analyze broad jurisdiction-wide impacts of GHG emissions can be part of an effective strategy for addressing cumulative impacts and for streamlining later project-specific CEQA reviews" (June 2008 Technical Advisory, pages 7–8).

Preliminary guidance from OPR<sup>2</sup> and recent letters from the Attorney General<sup>3</sup> critical of California Environmental Quality Act (CEQA) documents that have taken different approaches indicate that lead agencies should calculate, or estimate, emissions from vehicular traffic, energy consumption, water conveyance and treatment, waste generation, and construction activities.

The South Coast Air Quality Management District (SCAQMD) has also issued recommendations regarding the methodology to be used to analyze GHG impacts in environmental documents prepared pursuant to CEQA. In October 2008, SCAQMD released a *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* that suggested a tiered approach to project analysis. Figure 4.6.1, Tiered Decision Approach to GHG Methodology and Significance Thresholds (provided at the end of this section), illustrates the tiered approach based on the SCAQMD's and California Air Resources Board's (ARB) suggested screening thresholds used for this analysis.

According to the tiered approach, if a project is exempt from CEQA, Tier 1 would be the most appropriate tier and the project effects related to GHG emissions/GCC would be less than significant

<sup>1</sup> State of California Governor's Office of Planning and Research (OPR). Technical Advisory, *California Environmental Quality Act (CEQA) and Climate Change: Addressing Climate Change through California Environmental Quality Act Review*, June 19, 2008.

<sup>2</sup> OPR, *Technical Advisory on CEQA and Climate Change*, June 19, 2008.

<sup>3</sup> State of California Department of Justice. Website, <http://oag.ca.gov/environment/ceqa/letters> (accessed February 5, 2013).

and the analysis is complete. If the project is not exempt and there is a local GHG reduction plan in place, then Tier 2 would be the most appropriate tier. If the project is consistent with that plan, then the project effects related to GHG emissions/GCC would be less than significant and the analysis is complete. If the project is not consistent with the plan, then the project would have a significant impact related to GHG emissions/GCC and the analysis would be complete. If there is no local GHG reduction plan, Tier 3 is used to screen smaller projects. If the project emissions are less than the applicable numerical threshold (refer to Figure 4.6.1), then the project effects related to GHG emissions/GCC would be less than significant and the analysis is complete. If the project exceeds the numerical threshold, then the project should be analyzed using Tier 4.

If the project emissions would meet the applicable Tier 4 numerical energy efficiency targets for projects that have incorporated design features to reduce GHG emissions (refer to Figure 4.6.1), then the project would have less than significant impacts related to GHG emissions/GCC and the analysis is complete. If the project exceeds both the Tier 3 and Tier 4 thresholds, then the project would have a significant impact related to GHG emissions/GCC and the analysis is complete.

Tier 5 is not a threshold but rather specifies that a project include all feasible on- and off-site measures to reduce GHG emissions as well as financially supporting independent projects that have a net reduction in GHG emissions.

Therefore, because (1) the proposed project is not exempt from CEQA, and (2) there is no applicable local GHG reduction plan, this section assesses whether the proposed project would exceed the screening threshold for mixed-use projects (the closest land use category to the proposed church use) of 3,000 tons per year (tpy) carbon dioxide equivalent (CO<sub>2</sub>e) (a Tier 3 analysis).

### 4.6.3 Existing Environmental Setting

GCC is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time. The term "global climate change" is often used interchangeably with the term "global warming," but GCC is preferred to global warming because it helps to convey that there are other changes in addition to rising temperatures.

GCC refers to any change in measures of weather (such as temperature, precipitation, or wind) lasting for an extended period of time (decades or longer). GCC may result from natural factors (e.g., changes in the sun's intensity), natural processes within the climate system (e.g., changes in ocean circulation), or human activities (e.g., the burning of fossil fuels, land clearing, or agriculture). The primary observed effect of GCC has been a rise in the average global tropospheric<sup>1</sup> temperature of 0.36 degree Fahrenheit (°F) per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling shows that further warming could occur, which would induce additional changes in the global climate system during the current century. Changes to the global climate system, ecosystems, and the environment of California could include higher sea levels, drier or wetter weather, changes in ocean salinity, and changes in wind patterns or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme

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<sup>1</sup> The troposphere is the zone of the atmosphere characterized by water vapor, weather, winds, and decreasing temperature with increasing altitude.

cold, and increased intensity of tropical cyclones. Specific effects in California might include a decline in the Sierra Nevada snowpack, erosion of California's coastline, and seawater intrusion in the Sacramento Delta.

Global surface temperatures have risen by  $1.33^{\circ}\text{F} \pm 0.32^{\circ}\text{F}$  over the last 100 years (1906–2005). The rate of warming over the last 50 years is almost double that over the last 100 years.<sup>1</sup> The latest projections, based on state-of-the-art climate models, indicate that temperatures in California are expected to rise 3–10.5°F by the end of the century.<sup>2</sup> The prevailing scientific opinion on GCC is that “most of the warming observed over the last 50 years is attributable to human activities.”<sup>3</sup> Increased amounts of carbon dioxide (CO<sub>2</sub>) and other GHGs are the primary causes of the human-induced component of warming. The observed warming effect associated with the presence of GHGs in the atmosphere (from either natural or human sources) is often referred to as the greenhouse effect.<sup>4</sup>

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced GCC are:<sup>5</sup>

- CO<sub>2</sub>
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF<sub>6</sub>)

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, which is believed to be causing global warming. While GHGs produced by human activities include naturally occurring GHGs such as CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O, some gases, such as HFCs, PFCs, and SF<sub>6</sub>, are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere as compared to the GHGs that remain in the atmosphere for significant periods of time, thereby contributing to GCC in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

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<sup>1</sup> Intergovernmental Panel on Climate Change (IPCC), 2013. *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC.*

<sup>2</sup> California Climate Change Center, 2006. *Our Changing Climate. Assessing the Risks to California.* July.

<sup>3</sup> IPCC, 2013. *Fifth Assessment Report.*

<sup>4</sup> The temperature on Earth is regulated by a system commonly known as the “greenhouse effect.” Just as the glass in a greenhouse allows heat from sunlight in and reduces the amount of heat that escapes, GHGs like CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of GHGs results in global warming, the *naturally occurring* greenhouse effect is necessary to keep our planet at a comfortable temperature.

<sup>5</sup> The GHGs listed are consistent with the definition in Assembly Bill 32 (Government Code 38505), as discussed later in this section.

For the purposes of this analysis, the term “GHGs” will refer collectively to the six gases identified in the bulleted list provided above.

These gases vary considerably in terms of global warming potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. GWP is based on several factors, including the relative effectiveness of a gas in absorbing infrared radiation and the length of time that the gas remains in the atmosphere (“atmospheric lifetime”). The GWP of each gas is measured relative to CO<sub>2</sub>, the most abundant GHG. The definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO<sub>2</sub> over a specified time period. GHG emissions are typically measured in terms of pounds or metric tons (MT)<sup>1</sup> of “CO<sub>2</sub> equivalents” (CO<sub>2</sub>e). Table 4.6.A shows the GWP for each type of GHG. For example, SF<sub>6</sub> is 22,800 times more potent at contributing to global warming than CO<sub>2</sub>.

**Table 4.6.A: Global Warming Potential of Greenhouse Gases**

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO <sub>2</sub> )	50–200	1
Methane (CH <sub>4</sub> )	12	25
Nitrous Oxide (NO <sub>x</sub> )	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF <sub>4</sub> )	50,000	7,390
PFC: Hexafluoromethane (C <sub>2</sub> F <sub>6</sub> )	10,000	12,200
Sulfur Hexafluoride (SF <sub>6</sub> )	3,200	22,800

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

HFC = hydrofluorocarbons

IPCC = Intergovernmental Panel on Climate Change

PFC = perfluorocarbons

**Primary Greenhouse Gases.** The following discussion summarizes the characteristics of the six primary GHGs.

**Carbon Dioxide.** In the atmosphere, carbon generally exists in its oxidized form, as CO<sub>2</sub>. Natural sources of CO<sub>2</sub> include the respiration (breathing) of humans, animals, and plants; volcanic outgassing; decomposition of organic matter; and evaporation from the oceans. Human-caused sources of CO<sub>2</sub> include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance, and when concentrations of CO<sub>2</sub> are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO<sub>2</sub> to the atmosphere. Natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input

<sup>1</sup> A metric ton is equivalent to approximately 1.1 tons.

of human-made CO<sub>2</sub>. Consequently, the gas is building up in the atmosphere. The concentration of CO<sub>2</sub> in the atmosphere has risen approximately 30 percent since the late 1800s.<sup>1</sup>

The transportation sector remains the largest source of GHG emissions in 2011, with 37.6 percent of California's GHG emission inventory. The largest emissions category within the transportation sector is on-road, which consists of passenger vehicles (cars, motorcycles, and light-duty trucks) and heavy duty trucks and buses. Emissions from on-road constitute over 92 percent of the transportation sector total. Industry and electricity generation were California's second- and third-largest categories of GHG emissions, respectively.

**Methane.** CH<sub>4</sub> is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (burning of coal, oil, natural gas, etc.). Emissions from the recycling and waste sector consist of CH<sub>4</sub> and N<sub>2</sub>O emissions from landfills and from commercial-scale composting. Emissions from recycling and waste grew from 6.3 million metric tons (MMT) of CO<sub>2</sub>e in 2001 to 7.0 MMT of CO<sub>2</sub>e in 2011.<sup>2</sup> As with CO<sub>2</sub>, the major removal process of atmospheric CH<sub>4</sub>—a chemical breakdown in the atmosphere—cannot keep pace with source emissions, and CH<sub>4</sub> concentrations in the atmosphere are increasing.

**Nitrous Oxide.** N<sub>2</sub>O is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. N<sub>2</sub>O is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N<sub>2</sub>O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N<sub>2</sub>O emissions in California.

**Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride.** HFCs are primarily used as substitutes for ozone (O<sub>3</sub>) depleting substances regulated under the Montreal Protocol.<sup>3</sup> PFCs and SF<sub>6</sub> are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry, which is active in California, leads to greater use of PFCs. However, there are no known project-related emissions of these three GHGs, so they are not discussed further.

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<sup>1</sup> California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

<sup>2</sup> California Air Resources Board (ARB), Greenhouse Gas Inventory Data – 2000 to 2011. Website: <http://www.arb.ca.gov/cc/inventory/data/data.htm> (accessed April 2014).

<sup>3</sup> The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for O<sub>3</sub> depletion.

**Emissions Sources and Inventories.** An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, national, California, and local GHG emission inventories. However, because GHGs persist for a long time in the atmosphere (see Table 4.6.A), accumulate over time, and are generally well mixed, their impact on the atmosphere and climate cannot be tied to a specific point of emission.

**Global Emissions.** Worldwide emissions of GHGs in 2011 totaled 34.6 billion metric tons (MT) of CO<sub>2</sub>e per year (CO<sub>2</sub>e/yr).<sup>1</sup> Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change (UNFCCC).

**United States Emissions** In 2012, the United States emitted approximately 6.5 billion MT of CO<sub>2</sub>e. Of the six major sectors nationwide—electric power industry, transportation, industry, agriculture, commercial, and residential—the electric power industry and transportation sectors combined account for approximately 70 percent of the GHG emissions; the majority of the electric power industry and all of the transportation emissions are generated from direct fossil fuel combustion. In 2012, the total United States GHG emissions were approximately 5.3 percent greater than 1990 levels.<sup>2</sup>

**State of California Emissions.** According to ARB emission inventory estimates, California emitted approximately 448 MMT of CO<sub>2</sub>e emissions in 2011.<sup>3</sup> This large number is due primarily to the sheer size of California compared to other states. By contrast, California has the fourth-lowest per-capita CO<sub>2</sub> emission rate from fossil fuel combustion in the country due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.<sup>4</sup>

The ARB estimates that transportation was the source of approximately 38 percent of the State's GHG emissions in 2011, followed by electricity generation (both in-State and out-of-State) at 19 percent and industrial sources at 21 percent. The remaining sources of GHG emissions were residential and commercial activities at 10 percent, agriculture at 7 percent, high-GWP gases at 3 percent, and recycling and waste at 2 percent.<sup>5</sup>

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<sup>1</sup> United Nations Framework Convention on Climate Change (UNFCCC), 2007. Combined total of Annex I and Non-Annex I Country CO<sub>2</sub>e emissions. *Greenhouse Gas Inventory Data*. Website: [http://unfccc.int/ghg\\_data/ghg\\_data\\_unfccc/time\\_series\\_annex\\_i/items/3814.php](http://unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php) and [http://maindb.unfccc.int/library/view\\_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf](http://maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf).

<sup>2</sup> United States Environmental Protection Agency (EPA). 2014. *The 2014 U.S. Greenhouse Gas Inventory Report*. Website: <http://www.epa.gov/climatechange/emissions/usinventoryreport.html> (accessed April 2014).

<sup>3</sup> ARB. *Greenhouse Gas Inventory Data – 2000 to 2011*. Website: <http://www.arb.ca.gov/cc/inventory/data/data.htm> (accessed April 2014).

<sup>4</sup> California Energy Commission (CEC), 2007. *Inventory of California Greenhouse Gas Emissions and Sinks: 1990 to 2004 – Final Staff Report*. Publication No. CEC-600-2006-013-sf, Sacramento, CA, December 22, 2006; and January 23, 2007, update to that report.

<sup>5</sup> ARB, 2013. Website: <http://www.arb.ca.gov/cc/inventory/data/data.htm> (accessed on October 2013).



The ARB is responsible for developing the California Greenhouse Gas Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State of California and supports the AB 32 Climate Change Program. The ARB's current GHG emission inventory covers the years 1990–2011 and is based on fuel use, equipment activity, industrial processes, and other relevant data (e.g., housing, landfill activity, agricultural lands). The emission inventory estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions in California.

The ARB staff has projected statewide unregulated GHG emissions for 2020, which represent the emissions that would be expected to occur in the absence of any GHG reduction actions, at 507 MMT of CO<sub>2</sub>e. GHG emissions from the transportation and electricity sectors as a whole are expected to increase but remain at approximately 36 percent and 24 percent of total CO<sub>2</sub>e emissions, respectively. The industrial sector consists of large stationary sources of GHG emissions, and the percentage of the total 2020 emissions is projected to be 18 percent of total CO<sub>2</sub>e emissions.

**Regional Emissions.** Existing GHG emissions for the Southern California Association of Governments (SCAG) region were calculated for construction sources, mobile sources, natural gas consumption, and electricity generation. GHG emissions for 2009 were estimated to be approximately 176.79 MMT of CO<sub>2</sub>e/yr, and the existing emissions for the entire State were estimated to be approximately 448 MMT of CO<sub>2</sub>e/yr.

#### 4.6.4 Regulatory Setting

##### **Federal Regulations and Policies.**

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the United States Environmental Protection Agency (EPA) has the authority to regulate CO<sub>2</sub> emissions under the federal Clean Air Act (CAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the EPA commenced several actions in 2009 that are required to implement a regulatory approach to GCC.

On September 30, 2009, the EPA announced a proposal that focuses on large facilities emitting over 25,000 MT of CO<sub>2</sub>e of GHG emissions per year. These facilities would be required to obtain permits that would demonstrate that they are using the best practices and technologies to minimize GHG emissions.

On December 7, 2009, the EPA Administrator signed a final action under the CAA, finding that six GHGs (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to GCC. This EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below.

On April 1, 2010, the EPA and the United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program

consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The EPA is finalizing the first-ever national GHG emissions standards under the CAA, and NHTSA is finalizing Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. The EPA GHG standards require these vehicles to meet an estimated combined average emissions level of 250 grams of CO<sub>2</sub> per mile in model year 2016, equivalent to 35.5 miles per gallon (mpg).

### **State and Regulations and Policies.**

**Title 24 (California Green Building Code).** California Green Buildings Standards Code (Cal Green Code) (California Code of Regulations [CCR], Title 24, Part 11) was adopted by the California Building Standards Commission in 2010 and became effective in January 2011. The Cal Green Code applies to all new constructed residential, nonresidential, commercial, mixed-use, and State-owned facilities, as well as schools and hospitals. Cal Green Code comprises Mandatory Residential and Nonresidential Measures and more stringent Voluntary Measures (TIERS I and II).

Mandatory Measures are required to be implemented on all new construction projects and to consist of a wide array of green measures concerning project site design, water use reduction, improvement of indoor air quality, and conservation of materials and resources. The Cal Green Code refers to Title 24, Part 6, compliance with respect to energy efficiency; however, it encourages 15 percent energy use reduction over that required in Part 6. Voluntary Measures are optional, more stringent measures that may be used by jurisdictions that strive to enhance their commitment toward green and sustainable design and achievement of Assembly Bill (AB) 32 goals. Under TIERS I and II, all new construction projects are required to reduce energy consumption by 15 percent and 30 percent, respectively, below the baseline required under the California Energy Commission (CEC), as well as implement more stringent green measures than those required by mandatory code.

**Assembly Bill 1493 (Pavley).** AB 1493, authored by Assembly Member Fran Pavley in 2002, directed the ARB to adopt regulations to achieve the maximum feasible and cost-effective reduction of greenhouse gas emissions from motor vehicles. The so-called “Pavley” regulations, or Clean Car regulations, were approved by the ARB in 2004. The ARB submitted a request to the EPA to implement the regulations in December 2005. After several years of requests to the federal government, and accompanying litigation, this waiver request was granted on June 30, 2009. The ARB has since combined the control of smog-causing pollutants and greenhouse gas emissions to develop a single coordinated package of standards known as Low Emission Vehicles III. It is expected that these regulations will reduce greenhouse gas emissions from California passenger vehicles by about 22 percent in 2012 and about 30 percent in 2016, all while improving fuel efficiency and reducing motorists’ costs. AB 1493 also directed the California Climate Action Registry to adopt protocols for reporting reductions in greenhouse emissions from mobile sources prior to the operative date of the regulations.

**Executive Order S-3-05.** Executive Order (EO) S-3-05 (June 2005) established greenhouse gas targets for the State, such as: returning to year 2000 emission levels by 2010; 1990 levels by

2020; and 80 percent below 1990 levels by 2050. It directed the Secretary of the California Environmental Protection Agency to coordinate efforts to meet the targets with the heads of other State agencies. This group became the Climate Action Team (CAT).

**Assembly Bill 32.** The California Global Warming Solutions Act of 2006, best known by its bill number AB 32, created a first-in-the country comprehensive program to achieve real, quantifiable, and cost-effective reductions in greenhouse gases. The law set an economy-wide cap on California greenhouse gas emissions at 1990 levels by 2020. It directed the ARB to prepare, approve, and implement a Scoping Plan for achieving the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions. EO S-20-06, signed in October 2006, directed the Secretary for Environmental Protection to establish a Market Advisory Committee of national and international experts. The committee made recommendations to the ARB on the design of a market-based program for greenhouse gas emissions reduction. The ARB adopted the Scoping Plan, describing a portfolio of measures to achieve the target, in December 2008. All of the major regulatory measures necessary for meeting the 2020 emissions target were adopted by December 2010.

#### **Local Regulations and Policies.**

**City of Dana Point General Plan.** The Conservation/Open Space Element (1991) of the City's General Plan includes goals and polices related to GHG emissions. The following goal is applicable to the proposed project:

**Goal 5:** Reduce air pollution through land use, transportation and energy use planning.

**City of Dana Point Municipal Code.** Chapter 12.10, Mobile Source Air Pollution Reduction Program, of the City's Municipal Code establishes the Air Quality Improvement Trust Fund. The Air Quality Improvement Trust Fund is authorized to receive a portion of funds from motor vehicle registration to be expended on programs and projects aimed at reducing mobile-source emissions. As established in the City's Municipal Code, programs implemented by the City using funds utilized from the Air Quality Improvement Trust Fund shall be consistent with the California Clear Air Act of 1988, or the plan proposed pursuant to Article 5 (commencing with Section 40460) of Chapter 5.5 of Part 3 of the California Health and Safety Code.

#### **4.6.5 Thresholds of Significance**

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines* and the City's CEQA Thresholds of Significance. Based on these thresholds, implementation of the proposed project would have a significant adverse impact on GCC if it would:

**Threshold 4.6.1:** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or

**Threshold 4.6.2:** Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

#### 4.6.6 Project Impacts

**Threshold 4.6.1:** Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment

**Less than Significant Impact.** Construction and operation of the proposed project would generate GHG emissions, with the majority of energy consumption (and associated generation of GHG emissions) occurring during the project's operation (as opposed to during its construction). Typically, more than 80 percent of the total energy consumption takes place during the use of buildings, and less than 20 percent of energy is consumed during construction.<sup>1</sup> As of yet, there is no study that quantitatively assesses all of the GHG emissions associated with each phase of the construction and use of an individual development.

GHG emissions generated by the proposed project would predominantly consist of CO<sub>2</sub>. In comparison to criteria air pollutants such as O<sub>3</sub> and PM<sub>10</sub>, CO<sub>2</sub> emissions persist in the atmosphere for a substantially longer period of time. While emissions of other GHGs, such as CH<sub>4</sub>, are important with respect to GCC, emission levels of other GHGs are less dependent on the land use and circulation patterns associated with the proposed land use development project than are levels of CO<sub>2</sub>.

**Construction.** GHG emissions that could be generated on the project site would occur over the short term from construction activities, consisting primarily of emissions from equipment exhaust. Construction activities produce combustion emissions from various sources, such as site grading, utility engines, on-site heavy-duty construction vehicles, equipment hauling materials to and from the site, asphalt paving, and motor vehicles transporting the construction crew. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change.

Construction of the proposed project would generate GHG emissions during the architectural coatings phase from equipment exhaust and energy use. Architectural coatings used during construction of the proposed project may contain volatile organic compounds (VOCs) that are similar to reactive organic gases (ROGs) and are part of O<sub>3</sub> precursors. However, there are no significant emissions of GHGs from architectural coatings.

The only GHG with well-studied emissions characteristics and published emissions factors for construction equipment is CO<sub>2</sub>. Table 4.6.B lists the annual CO<sub>2</sub> emissions for the single highest year of each of the planned construction phases. It should be noted that GHG emissions are typically measured in terms of metric tons (MT)<sup>2</sup> of "CO<sub>2</sub> equivalents" (CO<sub>2</sub>e). In other words, duration of the building construction during Phase 3 would encompass more than 1 year, and it is estimated that construction of the proposed project during Phase 3 would emit 360 MT of CO<sub>2</sub>e during the peak year, and would emit a lower level of CO<sub>2</sub>e during the rest of the time designated for building

<sup>1</sup> United Nations Environment Programme (UNEP), 2007. *Buildings and Climate Change: Status, Challenges and Opportunities*, Paris, France.

<sup>2</sup> A metric ton is equivalent to approximately 1.1 tons.

**Table 4.6.B: Peak Annual Construction GHG Emissions**

Construction Phase	Total Regional Pollutant Emissions (MT/yr)			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Phase 1A - Site Preparation	12	0.0021	0	12
Phase 1A - Excavation	18	0.0041	0	18
Phase 1A - Grading	31	0.0081	0	31
Phase 1A - Building Construction	160	0.024	0	160
Phase 1A - Architectural Coating	15	0.0017	0	15
Phase 1B - Demolition	73	0.016	0	74
Phase 1B-E1 - Earthwork	100	0.03	0	100
Phase 1B-E2 - Grading	82	0.024	0	83
Phase 1C - Building Construction	330	0.053	0	330
Phase 1C - Architectural Coating	15	0.0015	0	15
Phase 1C - Paving	21	0.0064	0	21
Phase 2 - Building Construction	360	0.054	0	360
Phase 2 - Architectural Coating	21	0.0016	0	21
Phase 3 - Building Construction	360	0.053	0	360
Phase 3 - Architectural Coating	21	0.0014	0	21
Phase 4 - Building Construction	230	0.033	0	230
Phase 5 - Building Construction	190	0.029	0	190
Phase 5 - Paving	20	0.0064	0	20
<b>Total Project Emissions:</b>	<b>2,059</b>	<b>0.3493</b>	<b>0</b>	<b>2,061</b>

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

CH<sub>4</sub> = methane

MT/yr = metric tons per year

CO<sub>2</sub> = carbon dioxide

N<sub>2</sub>O = nitrous oxide

CO<sub>2</sub>e = carbon dioxide equivalent

construction during Phase 3. The potential total construction GHG emissions of 2,061 MT of CO<sub>2</sub>e from construction of the proposed project would be less than the SCAQMD interim tiered GHG emissions threshold for mixed-use projects (land use category most applicable to the proposed church use) of 3,000 tpy of CO<sub>2</sub>e (Tier 3). The increase in GHG emissions from construction of the proposed project would occur over the short term. Therefore, the construction of the proposed project would not result in significant generation of GHGs, either directly or indirectly, would not have a significant impact on the environment due to GHG emissions, and no mitigation is required.

**Operation.** It is anticipated that there would be long-term emissions associated with operation of the proposed project. Project operation would result in direct and indirect GHG emissions related to area, energy, mobile, waste, and water sources as well as water usage (Table 4.6.C).

As indicated in Table 4.6.C, direct and indirect GHG emissions of CO<sub>2</sub>e related to operation of the proposed project would total 1,500 MT of CO<sub>2</sub>e (which equals 0.0015 MMT of CO<sub>2</sub>e/yr), and is 650 MT of CO<sub>2</sub>e/yr more than the existing conditions. For comparison, the existing emissions from the entire SCAG region (2010) are estimated to be approximately 224.6 MMT of CO<sub>2</sub>e/yr, and the existing emissions for the entire State (2008) are estimated at approximately 480.9 MMT of CO<sub>2</sub>e/yr.<sup>2</sup>

**Table 4.6.C: Long-Term Operational Greenhouse Gas Emissions**

Source	Pollutant Emissions (MT/yr)					
	Bio-CO <sub>2</sub>	NBio-CO <sub>2</sub>	Total CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Construction Emissions Amortized over 30 Years	0	74	74	0.013	0	75
<b>Operational Emissions</b>						
Area Sources	0	0.013	0.013	0.00003	0	0.013
Energy Sources	0	380	380	0.015	0.0045	380
Mobile Sources	0	870	870	0.028	0	870
Waste Sources	96	0	96	5.7	0	220
Water Usage	0.92	26	27	0.095	0.0025	30
<b>Total Project Emissions</b>	<b>97</b>	<b>1,300</b>	<b>1,400</b>	<b>5.8</b>	<b>0.007</b>	<b>1,500</b>
<b>Net Change</b>	<b>54</b>	<b>550</b>	<b>600</b>	<b>3.1</b>	<b>0.0037</b>	<b>650</b>

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

Note: Numbers in table may not appear to add up correctly due to rounding of all numbers to two significant digits.

Bio-CO<sub>2</sub> = biologically generated CO<sub>2</sub>

MT/yr = metric tons per year

CH<sub>4</sub> = methane

N<sub>2</sub>O = nitrous oxide

CO<sub>2</sub> = carbon dioxide

NBio-CO<sub>2</sub> = Non-biologically generated CO<sub>2</sub>

CO<sub>2</sub>e = carbon dioxide equivalent

**Area Sources.** Area sources of GHG emissions include architectural coatings, consumer products, hearth, and landscaping. The proposed project would directly result in increased GHG emissions from the area sources (0.013 MT of CO<sub>2</sub>e/yr).

**Energy/Natural Gas Usage.** The proposed project would increase the demand for electricity and natural gas due to the increased building area. Buildings represent 39 percent of the United States' primary energy usage and 70 percent of its electricity consumption.<sup>1</sup> The proposed project would indirectly result in increased GHG emissions from off-site electricity generation at power plants and on-site natural gas consumption (380 MT of CO<sub>2</sub>e/yr).

**Mobile Sources.** Mobile sources (vehicle trips and associated vehicle miles traveled [VMT]) are the largest source of GHG emissions in California, and represent approximately 38 percent of annual CO<sub>2</sub> emissions generated in the State. Like most land use development projects, VMT is the most direct indicator of GHG emissions from the proposed project.

Mobile sources from the proposed project would generate up to 870 MT of CO<sub>2</sub>e/yr of new emissions. Therefore, emissions from vehicle exhaust would constitute approximately 58 percent of the proposed project's total CO<sub>2</sub>e emissions. Emissions from vehicle exhaust are controlled by the State and federal governments and are outside the control of the City.

<sup>1</sup> United States Department of Energy. 2003. *Buildings Energy Data Book*.

<sup>2</sup> Southern California Association of Governments, May 30, 2012, Regional Greenhouse Gas Emissions Inventory and Reference Case Projections, 1990-2035.

**Solid Waste Disposal.** Operation of the proposed project would generate solid waste. The California Integrated Waste Management Board (CIWMB)<sup>1</sup> provides average waste generation rates from a variety of sources. The project would indirectly result in increased GHG emissions from solid waste treatment at treatment plants and waste composition in landfills (220 MT of CO<sub>2</sub>e/yr).

**Water Usage.** Energy use and related GHG emissions are based on electricity used for water supply and conveyance, water treatment, water distribution, and wastewater treatment. Water-related energy use consumes 19 percent of California's electricity every year.<sup>2</sup> The proposed project would indirectly result in increased GHG emissions from the off-site electricity generation at power plants and on-site natural gas consumption (30 MT of CO<sub>2</sub>e/yr).

**Other Sources.** The remaining CO<sub>2</sub>e emissions are primarily associated with building heating systems and increased regional power plant electricity generation due to the project's electrical demands. The project would comply with existing State and federal regulations regarding the energy efficiency of buildings, appliances, and lighting, which would reduce the project's electricity demand.

The new buildings constructed in accordance with current energy efficiency standards would be more energy efficient than older buildings. Beginning on January 1, 2014, several new Building Codes have been enforced in California. All structures other than one- and two-family dwellings and townhomes will be built under the new 2013 California Building Code (CBC) to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices.

At present, there is a federal ban on chlorofluorocarbons (CFCs); therefore, it is assumed the project would not generate emissions of CFCs. The proposed project may emit a small amount of HFCs from leakage and service of refrigeration and air-conditioning equipment and from disposal at the end of the life of the equipment. However, the details regarding refrigerants to be used at the project site are unknown at this time. PFCs and SF<sub>6</sub> are typically used in industrial applications, none of which would be used on the project site. Therefore, it is not anticipated that the project would contribute significant emissions of these additional GHGs.

The total net increase in GHG emissions of 650 tpy of CO<sub>2</sub>e from the proposed project would be less than the SCAQMD interim tiered GHG emissions threshold for mixed-use projects (land use category most applicable to the proposed church use) of 3,000 tpy of CO<sub>2</sub>e (Tier 3). The total net increase in GHG emissions from the proposed project would include both direct (amortized construction, area source, and mobile) and indirect (electricity, solid waste, and water usage) GHG emissions. Therefore, the operation proposed project would not result in significant

<sup>1</sup> California Integrated Waste Management Board (CIWMB), 2009. *Estimated Solid Waste Generation Rates for Residential Developments*. Website: <http://www.ciwmb.ca.gov/wastechar/wastegenrates/Residential.htm>.

<sup>2</sup> State of California Code of Regulations (CCR), 2005. CEC. *California's Water-Energy Relationship*. November.

generation of GHGs, either directly or indirectly, would not have a significant impact on the environment due to GHG emissions, and no mitigation is required.

**Threshold 4.6.2: Conflict with any applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases**

**Less than Significant Impact.** Because the GHG emissions reduction goals in AB 32 are scoped to manage total statewide GHG emissions of approximately 448 MMT of CO<sub>2</sub>e/yr, the total GHG emissions of 0.0015 MMT of CO<sub>2</sub>e/yr from the proposed project, less than 0.001 percent of the State total, are not anticipated to result in GHG emission levels that would substantially conflict with implementation of the GHG reduction goals under AB 32 or other State regulations. Furthermore, the proposed project would be consistent with the City's General Plan Conservation/Open Space Element (1991) goal of reducing air pollution through land use, transportation and energy use planning (Goal 5) through compliance with Project Design Feature 4.6.1, which will ensure that the proposed project complies with, and would not conflict with, or impede, the implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor.

State regulations include the Climate Action Team's (CAT's) 2006 "*Report to Governor Schwarzenegger and the Legislature*," the ARB's 2007 "*Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California*," and the ARB's 2008 "*Climate Change Proposed Scoping Plan: a Framework for Change*" (Propose Scoping Plan). The CAT and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, as well as State incentive and regulatory programs. These reports identify strategies to reduce California's emissions to the levels proposed in EO S-3-05 and AB 32 that are applicable to the proposed project. The proposed Scoping Plan is the most recent document, therefore, strategies included in the Scoping Plan that apply to the proposed project are provided in Table 4.6.D. Table 4.6.D also summarizes the extent to which the proposed project would comply with the strategies in order to help California reach the emission reduction targets.

The strategies listed in Table 4.6.D are either a part of the project design or are requirements under local or State ordinances. With implementation of these strategies/measures, the proposed project's contribution to cumulative GHG emissions would be reduced. Compliance with Project Design Feature 4.6.1 will ensure that the proposed project complies with, and would not conflict with, or impede, the implementation of reduction goals identified in AB 32, the Governor's EO S-3-05, and other strategies to help reduce GHGs to the level proposed by the Governor.

#### **4.6.7 Mitigation Measures**

The proposed project would not result in potential significant impacts related to GHG and GCC, and no mitigation is required.



**Table 4.6.D: Project Compliance with Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Compliance
<b><i>Energy Efficiency Measures</i></b>	
<p><b>Energy Efficiency.</b> Maximize energy efficiency building and appliance standards, and pursue additional efficiency efforts including new technologies, and new policy and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California (including both investor-owned and publicly owned utilities).</p> <p><b>Renewables Portfolio Standard.</b> Achieve a 33 percent renewable energy mix statewide.</p> <p><b>Green Building Strategy.</b> Expand the use of green building practices to reduce the carbon footprint of California’s new and existing inventory of buildings.</p>	<p><b>Compliant with Project Design Feature Incorporated.</b> The proposed project would comply with the updated Title 24 standards, including the 2013 CBC, for building construction. In addition, the proposed project would implement Project Design Feature 4.6.1, which includes measures to incorporate water conservation and energy-efficient building design features.</p>
<b><i>Water Conservation and Efficiency Measures</i></b>	
<p><b>Water Use Efficiency.</b> Continue efficiency programs and use cleaner energy sources to move and treat water. Approximately 19 percent of all electricity, 30 percent of all natural gas, and 88 million gallons of diesel are used to convey, treat, distribute and use water and wastewater. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions.</p>	<p><b>Compliant with Project Design Feature Incorporated.</b> The proposed project would implement Project Design Feature 4.6.1, which includes measures to increase water use efficiency.</p>
<b><i>Solid Waste Reduction Measures</i></b>	
<p><b>Increase Waste Diversion, Composting, and Commercial Recycling, and Move Toward Zero-Waste.</b> Increase waste diversion from landfills beyond the 50 percent mandate to provide for additional recovery of recyclable materials. Composting and commercial recycling could have substantial GHG reduction benefits. In the long term, zero-waste policies that would require manufacturers to design products to be fully recyclable may be necessary.</p>	<p><b>Compliant with Project Design Feature Incorporated.</b> Data available from the CIWMB indicate that the City of Dana Point (Orange County) has not achieved the 50 percent diversion rate. The proposed project would implement Project Design Feature 4.6.1, identified later, which includes measures to increase solid waste diversion, composting, and recycling.</p>
<b><i>Transportation and Motor Vehicle Measures</i></b>	
<p><b>Vehicle Climate Change Standards.</b> AB 1493 (Pavley) required the State to develop and adopt regulations that achieve the maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles and light-duty trucks. Regulations were adopted by the ARB in September 2004.</p> <p><b>Light-Duty Vehicle Efficiency Measures.</b> Implement additional measures that could reduce light-duty GHG emissions. For example, measures to ensure that tires are properly inflated can both reduce GHG emissions and improve fuel efficiency.</p> <p><b>Adopt Heavy- and Medium-Duty Fuel and Engine Efficiency Measures.</b> Regulations to require retrofits to improve the fuel efficiency of heavy-duty trucks that could include devices that reduce aerodynamic drag and rolling resistance. This measure could also include hybridization of and increased engine efficiency of vehicles.</p> <p><b>Low Carbon Fuel Standard.</b> The ARB identified this measure as a Discrete Early Action Measure. This measure would reduce the carbon intensity of California’s transportation fuels by at least 10 percent by 2020.</p>	<p><b>Compliant.</b> The proposed project would not involve the manufacture of vehicles. However, vehicles that are purchased and used within the project site would comply with any vehicle and fuel standards that the ARB adopts.</p>

**Table 4.6.D: Project Compliance with Greenhouse Gas Emission Reduction Strategies**

Strategy	Project Compliance
<p><b>Regional Transportation-Related Greenhouse Gas Targets.</b>                      Develop regional GHG emissions reduction targets for passenger vehicles. Local governments will play a significant role in the regional planning process to reach passenger vehicle GHG emissions reduction targets. Local governments have the ability to directly influence both the siting and design of new residential and commercial developments in a way that reduces GHGs associated with vehicle travel.</p>	<p><b>Compliant.</b>                      Specific regional emission targets for transportation emissions do not directly apply to this project; regional GHG reduction target development is outside the scope of this project. The proposed project would comply with any plans developed by the City and the County.</p>
<p><b>Measures to Reduce High-GWP Gases.</b>                      The ARB has identified Discrete Early Action measures to reduce GHG emissions from the refrigerants used in car air conditioners, semiconductor manufacturing, and consumer products. The ARB has also identified potential reduction opportunities for future commercial and industrial refrigeration, changing the refrigerants used in auto air conditioning systems, and ensuring that existing car air conditioning systems do not leak.</p>	<p><b>Compliant.</b>                      New products used or serviced on the project site (after implementation of the reduction of GHGs) would comply with ARB rules and regulations in place at the time of building permit issuance.</p>

Source: *Air Quality Analysis*, LSA Associates, Inc. (August 2014).

AB = Assembly Bill

ARB = California Air Resources Board

CBC = California Building Code

CIWMB = California Integrated Waste Management Board

GHG = greenhouse gas

GWP = Global Warming Potential

#### 4.6.8 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for GHGs. However, unlike the cumulative analysis for many topics that address the combined impacts of a proposed project in addition to related projects in a project study area, GCC is affected by a larger range of development activity. Although the State requires Metropolitan Planning Organizations (MPOs) and other planning agencies to consider how region wide planning decisions can impact GCC, there is currently no established nonspeculative methodology for assessing the cumulative impact of proposed independent private party development projects.

The California Attorney General’s Office has taken an active role in addressing climate change via the *State CEQA Guidelines*, including, but not limited to: submitting comment letters on draft CEQA documents; filing CEQA lawsuits; and entering into related settlement agreements. Additionally, the Attorney General’s Office has created and routinely updates a Fact Sheet listing project design features to reduce GHG emissions. The Attorney General’s Office created this Fact Sheet primarily for the benefit of local agencies processing CEQA documents, acknowledging that “local agencies will help to move the State away from ‘business-as-usual’ and toward a low-carbon future.”<sup>1</sup> The Fact Sheet explains that the listed “measures can be included as design features of a project,” but emphasizes that they “should not be considered in isolation, but as part of a larger set of measures that, working together, will reduce GHG emissions and the effects of global warming.”

<sup>1</sup> State of California Attorney General’s Office Fact Sheet. *The California Environmental Quality Act Addressing Global Warming Impacts at the Local Agency Level*. December 2008.

Although the proposed project is expected to emit GHGs, the emission of GHGs by any single project into the atmosphere is not itself necessarily an adverse environmental effect. Rather, it is the increased accumulation of GHGs from more than one project and many sources in the atmosphere that may result in GCC. The resultant consequences of that climate change could cause adverse environmental effects. A project's GHG emissions typically would be very small in comparison to State or global GHG emissions and, consequently, they would, in isolation, have no significant direct impact on climate change. Due to the complex physical, chemical, and atmospheric mechanisms involved in GCC, it is speculative to identify the specific impact, if any, to GCC from one project's incremental increase in global GHG emissions. As such, a project's GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. Thus, the project-specific analysis conducted above is essentially already a cumulative analysis because it takes into consideration statewide GHG reduction targets and demonstrates that the proposed project would be consistent with those targets.

The State has mandated a goal of reducing statewide emissions to 1990 levels by 2020 even though statewide population and commerce are predicted to continue to expand. In order to achieve this goal, the ARB is in the process of establishing and implementing regulations to reduce statewide GHG emissions. However, there are currently no applicable significance thresholds, specific reduction targets, and or approved policy or guidance to assist in determining significance at the cumulative level. Additionally, there is currently no generally accepted methodology to determine whether GHG emissions associated with a specific project represent new emissions or existing, displaced emissions.

As previously stated, the proposed project would contribute criteria pollutants to the area during temporary project construction. A number of individual projects in the area may be under construction simultaneously with the proposed project (refer to Table 4.A, Cumulative Projects, in Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.). Depending on construction schedules and actual implementation of projects in the area, generation of fugitive dust and pollutant emissions during construction could result in substantial short-term increases in air pollutants. However, each project would be required to comply with the SCAQMD's standard construction measures. Therefore, because the proposed project's short-term construction emissions would not exceed the significance thresholds, the proposed project would not result in a significant short-term cumulative impact on GCC.

Additionally, the proposed project's long-term operational emissions would not exceed the SCAQMD's thresholds. As previously stated, the total net increase in GHG emissions of 650 tpy of CO<sub>2</sub>e from the proposed project would be less than the SCAQMD interim tiered GHG emissions threshold for mixed-use projects (land use category most applicable to the proposed church use) of 3,000 tpy of CO<sub>2</sub>e (Tier 3). Additionally, since climate change is a global issue, it is unlikely that the proposed project would generate enough GHG emissions to influence GCC on its own. Because the proposed project is consistent with the SCAQMD's thresholds and because the project's impacts alone would not cause or significantly contribute to GCC, project-related CO<sub>2</sub>e emissions and their contribution to GCC impacts in the State of California would not make a significant contribution to cumulatively considerable GHG emission impacts. Therefore, the proposed project would not result in a significant long-term cumulative impact.

#### 4.6.9 Project Design Feature

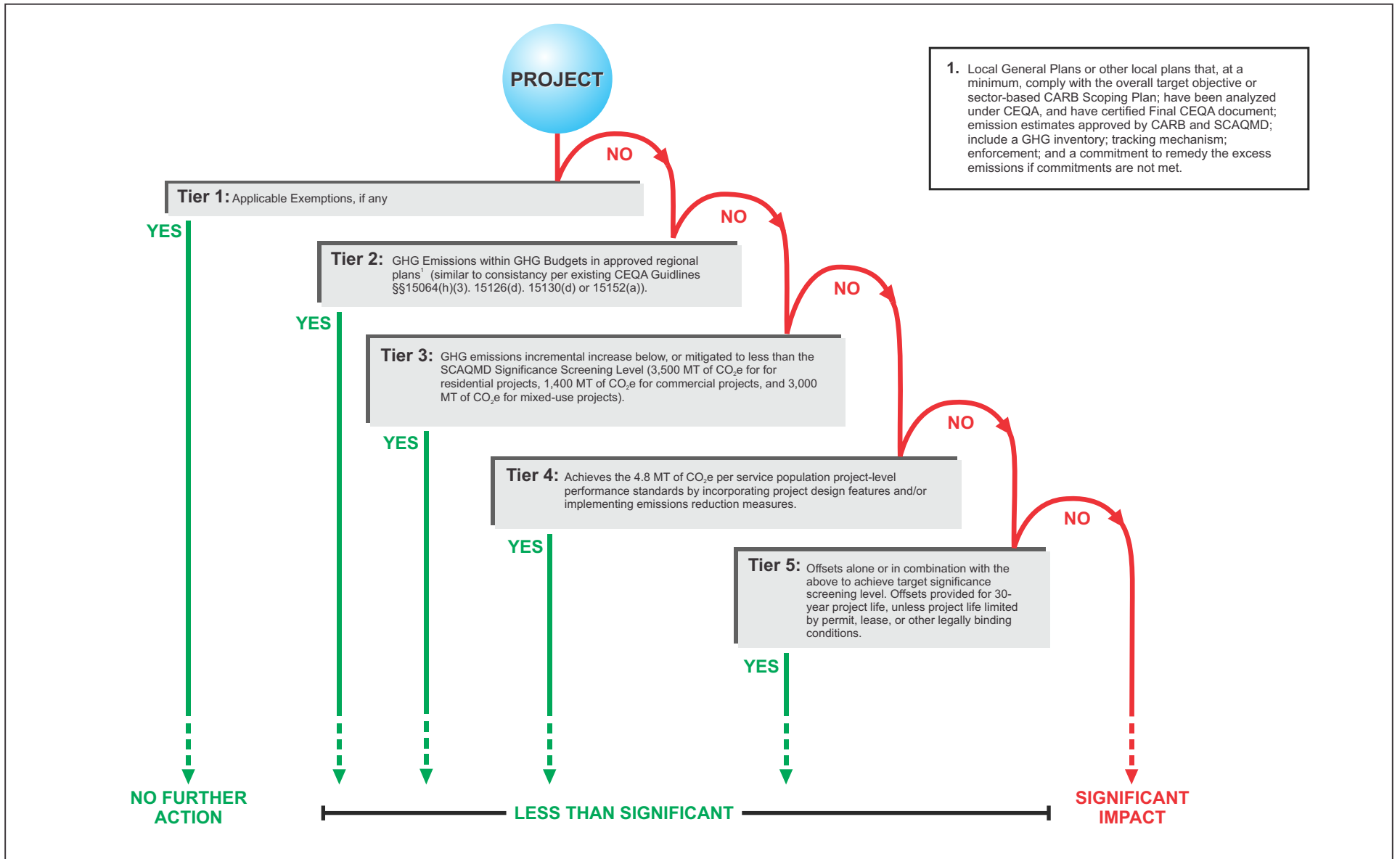
Impacts related to GHG emissions are less than significant, and no mitigation is required. However, in order to further reduce project emissions, the following measures will be implemented.

**Project Design Feature 4.6.1** To ensure that the proposed project complies with and would not conflict with or impede the implementation of reduction goals identified in Assembly Bill (AB) 32, the Governor’s Executive Order (EO) S-3-05, and other strategies to help reduce greenhouse gases (GHGs) to the level proposed by the Governor, the project will implement a variety of measures that will further reduce its greenhouse gas (GHG) emissions. To the extent feasible, and to the satisfaction of the City of Dana Point (City), the following measures will be incorporated into the design and construction of the project (including specific building projects):

- **Construction and Building Materials.** Divert at least 50 percent of the demolished and/or grubbed construction materials (including, but not limited to, soil, vegetation, concrete, lumber, metal, and cardboard).
- **Energy Efficiency Measures.** Design all project buildings to comply with the California Building Code’s (CBC) Title 24 energy standard, such as installing energy-efficient heating and cooling systems, appliances and equipment, and control systems.
- **Water Conservation and Efficiency Measures.** Devise a comprehensive water conservation strategy appropriate for the project and its location. The strategy may include the following, plus other innovative measures that may be appropriate:
  - Create water-efficient landscapes within the development.
  - Install water-efficient irrigation systems and devices, such as soil moisture-based irrigation controls.
  - Restrict watering methods (e.g., prohibit systems that apply water to nonvegetated surfaces) and control runoff.

#### 4.6.10 Significant Unavoidable Adverse Impacts

The proposed project would not result in significant unavoidable adverse impacts related to GHG and GCC.



LSA

FIGURE 4.6.1

SOURCE: Adapted from SCAQMD's Draft Guidance Document - Interim CEQA Greenhouse Gas (GHG) Significance Threshold, October 2008.

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## 4.7 HAZARDS AND HAZARDOUS MATERIALS

### 4.7.1 Introduction

This section addresses potential hazards and hazardous material impacts at the project site and in the surrounding area that may result from implementation of the proposed project. The information contained in this section is based on the *Phase I Environmental Site Assessment (Phase I ESA)*, (Advantage Environmental Consultants, LLC [AEC], September 16, 2011) (refer to Appendix F).

### 4.7.2 Methodology

As described above, the information contained in this section is primarily based on the *Phase I ESA* for the proposed project prepared by AEC in September 2011. The purpose of the *Phase I ESA* was to evaluate whether Recognized Environmental Conditions (RECs), which are defined by the American Society for Testing and Materials (ASTM)<sup>1</sup> as “the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into the structures on the property or into the ground, groundwater or surface water of the property,” are present due to past or present land uses on the project site and/or properties in the immediate vicinity of the project site.

A site reconnaissance was conducted to visually identify areas of possible contamination, improperly stored hazardous materials, possible sources of polychlorinated biphenyl (PCBs), and possible risk of contamination from activities at the project site and adjacent properties. The site reconnaissance was conducted on April 15, 2011. The reconnaissance involved walking interior and exterior portions of the project site and accessible roadways and pedestrian walkways surrounding the project site.

In addition, available maps, photographs, reports, and regulatory agency databases and files related to the project site and properties located within 0.25 mile of the project site were reviewed. The review of the databases included, but was not limited to: identification of locations of known hazardous waste sites; landfills; leaking underground storage tanks (LUSTs); permitted facilities that utilize underground storage tanks (USTs); and facilities that use, store, or dispose of hazardous materials.

Background research included personal interviews with the current owner of the project site and contact with the following local regulatory agencies: the Orange County Fire Authority (OCFA), the City of Dana Point Building and Safety Department, and the Orange County Health Care Agency (OCHCA).

### 4.7.3 Existing Environmental Setting

**Historical Use.** Based on a review of historical information, the project site was first developed with a single family residence between 1954 and 1962. After the South Shores Church acquired the parcel in 1962, it used the existing residence for all church functions. Over the next several decades, the Church expanded the existing structures and built additional structures on the project site to suit its

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<sup>1</sup> Standard E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*.

needs. According to historical aerial photographs, the project site was improved with three structures in 1968. By 1975, historical aerial photographs show that two additional structures had been added to the project site. A review of aerial photographs taken in 1994 show that the only changes to the project site between 1975 and 1994 were the expansion of the on-site parking lot and the grading of the eastern portion of the site. Aerial photographs taken since 2002 show the project site in its current configuration. Based on the review of historical records, no environmental concerns associated with the project site have been identified.

Details pertaining to the five existing buildings on the project site are provided below:

- **Sanctuary:** 19,078 square foot (sf) structure built in 1995
- **Chapel:** 3,765 sf structure built in 1968
- **Administration and Fellowship Hall:** 12,985 sf structure originally built in 1979, rebuilt after a fire in 1995
- **Preschool:** 6,717 sf structure originally built in the 1960s, with various additions and remodeling occurring in 1971, 1989, and in the 1990s

**Site Survey.** AEC conducted a site survey on April 15, 2011, to visually inspect and assess the potential for on-site RECs. The following discussion summarizes the results of the site survey.

**Aboveground Chemical or Waste Storage.** Typical cleaning products were observed in janitorial areas of the project site. In addition, minor quantities of gasoline were observed on the project site. However, because no leaks or staining were observed in these areas, these areas do not appear to constitute a REC in connection with the site.

**Electrical Transformers/PCBs.** Standard equipment suspected of containing PCBs includes industrial-capacity transformers, fluorescent light ballasts, and oil-cooled machinery. All PCB-containing transformers were required to be replaced with non-PCB-containing transformers after PCBs were designated as a carcinogen by the United States Environmental Protection Agency (EPA) in 1977. Transformers are currently classified as PCB-containing if their cooling oils contain greater than 50 milligrams per liter total PCBs. The management of PCB-containing transformers is the responsibility of the local utility or the transformer owner. Samples must be taken from the transformer in order to determine the presence or absence of PCBs.

Pad mounted-electrical transformers owned by San Diego Gas & Electric (SDG&E) were also observed on the project site. These transformers were deemed to be in good condition with no evidence of damage, leaks, or staining around the units. Additionally, the Sanctuary includes one hydraulic-powered elevator and an associated equipment room. However, based on the age and condition of the transformers, elevator, and associated equipment room, these facilities are not considered a REC in connection with the project site.



**Asbestos-Containing Materials.** Asbestos-containing materials (ACMs) represent a health hazard when they are subject to damage that results in the release of fibers. For this reason, the EPA banned the use of asbestos in many building products by the late 1970s. However, many buildings still contain ACMs. ACMs were commonly used in flooring tiles and roofing materials prior to their ban. Friable ACMs, which can be crumbled by hand pressure and are, therefore, susceptible to damage, are of particular concern. Nonfriable ACMs are a potential concern if they are damaged by maintenance work, demolition, or other activities.

A visual assessment of the existing structures for ACMs was conducted during the site survey. Although no samples were taken, based on the age of the Chapel, the Administration and Fellowship Hall building, and the Preschool buildings, it is possible that these buildings contain ACMs. However, building materials were observed to be in good condition at the time of the site reconnaissance, and as such, ACMs are not considered a possible REC in connection with the project site.

**Lead-Based Paint.** Lead has been used in commercial, residential, road, and ceramic paint; in electric batteries and other devices; as a gasoline additive; for weighting; in gunshot; and for other purposes. It is recognized as toxic to human health and the environment and is widely regulated in the United States (refer to Section 4.7.4, Regulatory Setting, for additional information regarding federal and State regulations related to lead hazards). Buildings constructed prior to 1978 are presumed to contain lead-based paint (LBP) unless proven otherwise, although buildings constructed after 1978 may also contain LBP.

A visual assessment of the existing structures for LBP was conducted during the site survey. Although no samples were taken, based on the age of the Chapel, the Administration and Fellowship Hall building, and the Preschool buildings, it is possible that these buildings contain LBP. However, building materials were observed to be in good condition at the time of the site reconnaissance, and as such, LBP is not considered a possible REC in connection with the project site.

**Drainage.** Information from the *Phase I ESA* indicates that the natural drainage at the project site trends toward the southeast, conforming to the natural topography in the area. Storm water runoff is expected to be diverted into storm sewers in the vicinity. The eastern portion of the project site contains a series of open, man-made drainage channels designed to capture and convey surface runoff to two water storage basins located at the southeastern corner of the project site. During storm events, when the smaller water storage basin reaches its maximum capacity, the excess water flows into an open drainage channel where it is conveyed into the City of Dana Point's (City) underground storm drain system. Both of these storage basins are lined with a membrane to prevent seepage into the soil of the project site. The *Environmental Database Research (EDR)* portion of the *Phase I ESA* did not identify differences in drainage at the project site compared to the drainage observed during the *Phase I ESA*.

**Hydrology, Storm Water Management, and Hydrogeology.** Surface runoff on the project site occurs as sheet flow. Municipal storm drains are located along public roadways abutting the

project site and a storm drain catch basin is located on the southeastern portion of the project site. The City maintains all storm drains in the area. In addition, the project site does not receive a significant amount of drainage from neighboring properties.

Groundwater beneath the project site is anticipated to be encountered at a depth of approximately 50 feet (ft) below ground surface, with a flow direction to the southwest towards the Pacific Ocean. However, both the depth and the direction of groundwater flow may vary based on seasonal rainfall and other factors. During a prior geotechnical investigation conducted at the project site by G.A. Nicoll & Associates in 2006, groundwater was encountered at a depth of 60 ft below ground surface. A static water table was encountered at approximately 90 ft in depth during the geological survey conducted by LGC.

**Other Conditions of Concern.** No visual indication of water wells, dry wells, septic fields, cesspools, or other conditions of concern that would indicate an REC were observed during the site reconnaissance conducted for the *Phase I ESA*. No stressed vegetation was observed during the site visit.

**Records Searches and Interviews.** A thorough investigation was conducted to establish baseline conditions on the project site by reviewing available maps, photographs, reports, and regulatory agency databases and files related to the project site and adjoining and nearby properties within a 0.25-mile radius of the project site.

**Hazardous Materials Releases.** As part of the *Phase I ESA*, a database search was conducted for the project site and the immediate vicinity. Table 4.7.A identifies the Federal and State/local databases related to potential on-site and off-site sources of contamination.

Table 4.7.B lists notable sites in the vicinity of the project site that have had a release of hazardous materials and the level of concern associated with the hazardous materials release, as reported within the *Phase I ESA*.

Even though hazardous materials releases are known to have occurred at the facilities listed in Table 4.7.B, they do not necessarily constitute a hazardous threat. As illustrated in Table 4.7.B, many considerations, including distance to the project site, status of clean-up efforts, type of listing, gradient in relation to the project site, and other site-specific considerations are used to determine whether a hazardous materials release may be considered a potential REC to the project site. Based on a detailed analysis of all three listed sites, the *Phase I ESA* concluded that none of the sites listed in the databases presently constitute an REC in connection with the project site.

**Table 4.7.A: Hazardous Material Databases**

Databases	Search Distance from Site
<b>Federal</b>	
National Priorities List (NPL)	1 mile
Delisted NPL	1 mile
Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)	1/2 mile
CERCLIS No Further Action Planned (NFRAP)	1/2 mile
Resource Conservation and Recovery Act (RCRA) Corrective Action Report (CORRACTS) Facilities	1/2 mile
RCRA non-CORRACTS Hazardous Waste Treatment, Storage and Disposal (TSD) Facilities	1/8 mile
Emergency Response Notification System (ERNS)	1/8 mile
Institutional Controls/Engineering Control (IC/EC) Registries	1/2 mile
<b>State/Local</b>	
State-equivalent NPL and CERCLIS (RESPONSE and ENVIROSTOR)	1 mile
State Voluntary Cleanup Sites (VCP)	1/2 mile
State Landfill and/or Solid Waste Disposal Sites (SWF/LF)	1/2 mile
State Leaking Storage Tank (LUST and SLIC)	1/2 mile
State Registered Storage Tank (UST, AST)	1/8 mile

Source: Advantage Environmental Consultants, LLC. *Phase I Environmental Site Assessment* (September 2011) (Appendix F).

**Table 4.7.B: Hazardous Waste Releases within and Adjacent to the Project Site**

Listed Property & Address	Database	Distance and Direction from Project Site	Status	Likely Concern to Site?
Monarch Laguna Associates/Regis Homes Corp.  (32502 Crown Valley Parkway)	LUST	0.20 mile north, northeast, and 0.65 mile north	This facility was listed on the LUST database due to a release of gasoline that impacted soil in June of 1986. The impacted soil was excavated and treated, and consequently, a case closure was granted on January 15, 1987. Based on the distance from the project site (>1/8 mile), medium affected (soil only), and the case status (closed), this facility is not anticipated to have impacted the project site.	No
Michael's Cleaners (21 Monarch Bay Plaza)	ENVIROSTOR	0.21 mile southwest	The facility is listed on the ENVIROSTOR database due to a release of dry cleaning solvents. The case was referred to the local agency on April 5, 2005. Based on the distance from the project site (>1/8 mile) and the down gradient location of this facility relative to the project site, this facility is not anticipated to have impacted the project site.	No
Unocal 76 (32842 Pacific Coast Highway)	LUST	0.279 mile west, southwest	The facility is listed on the LUST database for a release of waste/used oil that impacted groundwater in 1990. This facility utilized pump and treat remediation to remove the groundwater contaminants. The case was closed on April 25, 2001. Based on the distance from the project site (>1/4 mile), location of this facility down gradient of the project site, and case status (closed), this facility is not anticipated to have impacted the project site.	No

Source: Advantage Environmental Consultants, LLC. *Phase I Environmental Site Assessment* (September 2011) (Appendix F).  
LUST = leaking underground storage tank

**Cortese List (Pursuant to Government Code Section 65962.5).** The Hazardous Waste and Substances Sites (Cortese) List is a planning document used by the State, local agencies, and developers to comply with California Environmental Quality Act (CEQA) requirements in providing information about the location of hazardous materials release sites. Government Code Section 65962.5 requires the California Environmental Protection Agency (Cal EPA) to develop (at least annually) an updated Cortese List. The Department of Toxic Substances Control (DTSC) is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. As stated previously, there are no reported hazardous waste releases at the proposed project site. Therefore, the project site is not included on the Cortese List.

**Interviews.** As previously stated, interviews with the OCFA, the City of Dana Point Building and Safety Division, and the OCHCA were conducted as part of the *Phase I ESA* prepared for the proposed project. Results of these interviews are detailed below.

**OCFA.** The OCFA was contacted for information related to the regulatory records pertaining to the project site. According to an OCFA report run on April 25, 2011, OCFA last inspected the project site on November 1, 2010, and found no violations. In addition, no hazardous materials or chemical products were noted on the project site.

**City of Dana Point Building and Safety Division.** The City of Dana Point Building and Safety Division was contacted for information related to the presence of USTs on the project site. As indicated in email correspondence dated May 4, 2011, the City of Dana Point Building and Safety Division does not have any information regarding the presence of any USTs on the project site.

**OCHCA.** The OCHCA was contacted for information related to hazardous materials use and generation, as well as USTs, and unauthorized release cases on the project site. Because the project site did not appear on any OCHCA databases regarding these items, it can be assumed that there are no known hazardous materials, USTs, or unauthorized release cases on the project site.

**Schools.** Two schools are located within 0.25 mile of the project site. The Monarch Bay Montessori Academy, a privately operated school that serves students 2 to 9 years of age, is located 0.1 mile south of the project site. In addition, South Shores Church operates the South Shores Christian Preschool and Kindergarten on the project site.

#### 4.7.4 Regulatory Setting

Hazardous waste is the unused or leftover portion of any hazardous chemicals or materials. Any leftover product that is labeled with the words danger, warning, toxic, caution, poison, flammable, corrosive, or reactive is considered a hazardous waste. Universal waste, also considered to be hazardous, includes consumer batteries, light bulbs, light tubes, and mercury-containing items.

Regulations govern the collection and management of these widely generated wastes, thus facilitating environmentally sound collection and proper recycling or treatment. These regulations ease the regulatory burden on retail stores and others that wish to collect hazardous wastes and encourage the development of municipal and commercial programs to reduce the quantity of these wastes going to municipal solid waste landfills or combustors. In addition, the regulations also ensure that the wastes subject to this system will go to appropriate treatment or recycling facilities pursuant to the full hazardous waste regulatory controls. Implementation of these regulations and the management of hazardous materials are regulated independently of the CEQA process through programs administered by various agencies at the federal, state, and local levels.

As described below, every hazardous waste generator is required to have an emergency contingency plan (business plan) designed to minimize hazards to human health and the environment from fires, explosions, or an unplanned release of hazardous waste to air, soil, or surface water. The plan is carried out immediately whenever a fire, explosion, or unplanned chemical release occurs.

### **Federal Policies and Regulations.**

**Hazardous Materials.** The federal Toxic Substances Control Act (TSCA) of 1976 regulates chemical substances, which are substances and mixtures that might pose unreasonable risks of injury to human health or the environment. TSCA authorizes the EPA to require manufacturers to test their chemical products to determine their “toxic effects” and provide this information to the EPA for agency review before commercial manufacture is permitted.

Businesses that utilize hazardous materials are subject to Emergency Planning and Community Right-to-Know (Proposition 65) requirements as set forth in Title III of the Superfund Amendments and Reauthorization Act (SARA) and the California Waters Bill. These regulations require worker notification of hazardous substances in the workplace.

The State Waters Bill (Assembly Bill [AB] 2185 et al.), set forth in the California Health and Safety Code Sections 25500–25545, requires businesses that utilize hazardous materials above certain thresholds to prepare on-site “business plans” for possible emergencies involving those materials and to provide copies of the plans to local emergency response agencies. The business plans must include an Inventory List and an Emergency Action Plan. Minimum thresholds are as follows:

- Liquids: 55 gallons
- Solids: 500 pounds
- Compressed gases: 200 cubic feet (measured at standard temperature and pressure)
- Radioactive: quantities that exceed Nuclear Regulatory Commission thresholds, requiring the preparation of emergency plans (10 Code of Federal Regulations [CFR] Parts 30, 40, and 70)

Exemptions from these thresholds include the following:

- Hazardous materials stored as consumer packages for direct distribution to the general public

- Up to 1,000 cubic feet of oxygen, nitrous oxide, and/or nitrogen stored by physicians, dentists, podiatrists, veterinarians, and pharmacists
- Up to 55 gallons of any lubricating oil and up to 275 gallons of all lubricating oil stored by one business

**Hazardous Waste.** Federal and California laws provide for “cradle-to-grave” regulation of hazardous wastes (i.e., the regulations govern a hazardous waste from its point of generation to its point of disposal at an approved landfill or incinerating facility). The federal hazardous waste law is known as the Resource Conservation and Recovery Act (RCRA; 40 CFR 240 et seq.). California has merged its RCRA authority into ongoing implementation of the State Hazardous Waste Control Law (HWCL), which was initially adopted in 1972 (22 California Code of Regulations [CCR] Section 66260.1 et seq.).

The EPA has primary responsibility for implementing the RCRA, and the California DTSC is the State’s lead agency in implementing HWCL and RCRA provisions. California allows county and city health departments and other local agencies to implement certain HWCL provisions regulating hazardous waste generators under terms of Memorandums of Understanding (MOUs) with DTSC.

All RCRA-regulated and California-regulated hazardous waste must be recorded on hazardous waste manifests, with copies sent to DTSC. The manifest is a way of tracking hazardous waste from its inception to its disposal. The project site is subject to these requirements for disposal and transport of hazardous waste. Within its jurisdictional area, the Certified Unified Program Agency (CUPA) receives copies of hazardous waste manifests for tracking purposes.

**Occupational Safety and Health.** The federal Occupational Safety and Health Act of 1970 (OSH Act) (40 CFR 1902–1990) is the principal national law providing for worker safety and right to know. The broad policy goal of the act is “to assure so far as possible every working man and woman in the Nation a safe and healthful working environment.” It is implemented by the United States Occupational Safety and Health Administration (OSHA), whose responsibilities include developing and promulgating occupational safety and health standards and ensuring that these standards are administered and enforced nationwide.

The federal OSH Act allows states to administer OSHA requirements after submitting a state plan. The California Occupational Safety and Health Administration (Cal/OSHA) administers OSHA standards applicable to private employers within the state, along with additional authority provided by the California Occupational Safety and Health Act of 1973 (State OSH Act) (8 CCR Sections 330–8618). Complaints regarding health and safety issues at the project site would be investigated by Cal/OSHA.

**Asbestos-Containing Materials.** The use of asbestos in many building products was banned by the EPA by the late 1970s. In 1989, the EPA issued a ruling prohibiting the manufacture, importation, processing, and distribution of most asbestos-containing materials (ACMs). This rule, known as the Ban and Phase-Out Rule, would have effectively banned the use of nearly

95 percent of all asbestos products used in the United States. However, the United States 5<sup>th</sup> Circuit Court of Appeals vacated and remanded most of the Ban and Phase-Out Rule in October 1991. Due to this court decision, many asbestos-containing product categories not previously banned (prior to 1989) may still be in use today. ACM products presently banned are corrugated paper, rollboard, commercial and specialty paper, flooring felt, and new uses of asbestos. Revisions to regulations issued by OSHA (June 30, 1995) require that all thermal system insulation, surfacing materials, and resilient flooring materials installed prior to 1981 be considered “presumed” asbestos-containing materials (PACMs) and treated accordingly. To rebut the designation as PACMs, OSHA requires that these materials be surveyed, sampled, and assessed in accordance with 40 CFR 763 (Asbestos Hazard Emergency Response Act [AHERA]).

All asbestos should be removed from structures and disposed of in accordance with local, State, and federal regulations prior to renovation or demolition activities that would affect structures containing asbestos. Release of asbestos into the environment is a violation of several laws, including the OSH Act, RCRA, CAA, and CWA.

**Lead.** Lead is regulated as a “criteria” pollutant under the federal Clean Air Act (CAA), which has led to its elimination from automotive fuels. Aerially deposited lead (ADL) from past use of leaded fuels is a concern in unpaved areas adjacent to highly traveled roadways. Lead is also regulated as a toxic pollutant under the federal Clean Water Act (CWA) and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act) as well as under the federal and California Safe Drinking Water Acts.

All LBP above regulatory thresholds should be removed from structures and disposed of in accordance with local, state, and federal regulations prior to renovation or demolition activities that would affect structures that contain LBP or soils adjacent to structures that contain LBP. Release of LBP into the environment is a violation of several laws, including the OSH Act, RCRA, CAA, and CWA.

**State Regulations and Policies.** The CCR and the California Health and Safety Code (HSC) incorporate the requirements of the federal RCRA Subtitle I and set registration and permitting requirements, construction/operational standards, closure requirements, licensing of underground storage tank contractors, financial responsibility requirements, release reporting/corrective action requirements, and enforcement. Additionally, these provisions regulate the abatement process in the event of contamination of hazardous wastes. Specifically, the California HSC establishes standards, regulations, and requirements for the installation, inspection, registration, maintenance, and abandonment of USTs. These regulations also require the installation of leak detection systems and/or monitoring of UST installations. Since 1998, all USTs have been required to include corrosion protection, leak detection, and spill/overflow devices.

Businesses that utilize hazardous materials are subject to Emergency Planning and Community Right-to-Know (Proposition 65) requirements as delineated in the California HSC. These regulations require worker notification of hazardous substances in the workplace. The proposed project is subject to these requirements. In addition, Title 8 of the CCR Sections 1532.1 and 1529, provides for exposure limits, exposure monitoring, respiratory protection, and good working practices by workers exposed to lead

and asbestos. Lead- and asbestos-contaminated debris must be managed and disposed of in accordance with the applicable provision of the California HSC.

**California Hazardous Waste Control Law.** The Hazardous Waste Control Act (HSC, Division 20, Chapter 6.5) created the State hazardous waste management program, which is similar to, but more stringent than, the federal program under the federal RCRA (42 United States Code [USC] Section 6901, et seq.). The California Hazardous Waste Control Law regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by large-quantity generators through comprehensive life cycle or “cradle to grave” tracking requirements. Regulations in the CCR, Title 26, list more than 800 materials, including asbestos and PCBs, which may be hazardous and establish criteria for their identification, packaging, and disposal. Under the Hazardous Waste Control Act, hazardous waste generators must complete a manifest that accompanies the waste from the generator to the transporter to the ultimate disposal location. Copies of the manifest must be filed with the State’s DTSC.

**State Occupational Safety and Health Act.** OSHA is implemented through Cal/OSHA. Specifically, Cal/OSHA requires special training of handlers of hazardous materials, notification to employees who work in the vicinity of hazardous materials, acquisition from the manufacturer of material safety data sheets that describe the proper use of hazardous materials, and training of employees to remediate any accidental hazardous material releases. Cal/OSHA also requires preparation of an Injury and Illness Prevention Program (IIPP), which is an employee safety program of inspections, procedures to correct unsafe conditions, employee training, and occupational safety communication.

**Unified Hazardous Waste and Hazardous Materials Management Regulatory Program.** The California Environmental Protection Agency (Cal-EPA) grants to qualifying local agencies oversight and permitting responsibility for certain State programs pertaining to hazardous waste and hazardous materials. This is achieved through the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) (27 CCR Division 1, Subdivision 4, Chapter 1, Sections 15100–15620), created by State legislation in 1993 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities for the following emergency and management programs:

- Hazardous materials release response plans and inventories (business plans);
- California Accidental Release Prevention Program (CalARP);
- Underground Storage Tank Program;
- Aboveground Petroleum Storage Act Requirements for Spill Prevention, Control and Countermeasure Plans;
- Hazardous Waste Generator and On-site Hazardous Waste Treatment (tiered permitting) Programs; and
- California Uniform Fire Code: Hazardous material management plans and hazardous material inventory statements.



The local Certified Unified Program Agency (CUPA) implements program elements either directly or in coordination with affiliated Participating Agencies (PA). The Orange County Environmental Health Division is the CUPA for the project site. Business Plans for operations subject to the Hazardous Materials Release Response Plans and Inventory Act are reviewed and approved by the CUPA. The CUPA also conducts inspections of facilities that are subject to the Hazardous Materials Release Response Plans and Inventory Act.

**Emergency Services Act.** Under the Emergency Services Act, the State of California developed an emergency response plan to coordinate emergency services provided by federal, State, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an important part of the plan, which is administered by the California Office of Emergency Services (OES). This office coordinates the responses of other agencies, including the EPA, the California Highway Patrol, the nine Regional Water Quality Control Boards, the various air quality management districts, and county disaster response offices.

**Local Policies and Regulations.** Both the County of Orange (County) and the City have established several regulations related to hazardous materials management. The following discussion describes these regulations.

**The Southern California Hazardous Waste Management Plan.** This Regional Hazardous Waste Management Plan was adopted in September 1994 by the Southern California Waste Management Authority. The plan is designed to serve as an aid to assist counties and cities in the Southern California region in their efforts to plan for current and future hazardous waste management requirements. In addition, the plan is intended to encourage cooperation between citizens, businesses, and municipalities of the region in addressing concerns and needs related to hazardous waste management. The plan also establishes regional policies and a Regional Action Program to ensure that all cities and counties in the region assume responsibility for the management of hazardous wastes proportional to the hazardous wastes generated in that city or county.

**South Coast Air Quality Management District Rule 1403.** South Coast Air Quality Management District (SCAQMD) Rule 1403, Asbestos Emissions from Demolition/Renovation Activities, sets regulatory requirements as they relate to the emission of air pollutants that could pose potential significant harm to the environment and human health.

**South Coast Air Quality Management District Rule 1166.** SCAQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil, requires that a mitigation plan be approved by the SCAQMD prior to:

- The excavation of an underground storage tank or transfer piping previously used for volatile organic compounds (VOCs);

- The excavation or grading of soil consisting of VOC material, such as gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, resin, monomer, and/or any material containing VOCs; or
- The handling or storage of VOC-contaminated soil.

**County of Orange Emergency Response Plan.** The County's Emergency Response Plan provides a detailed summary of the countywide organization and identifies the responsibilities of each component agency in the event of a disaster. The Orange County and Operational Area Emergency Operations Center (OC OA/EOC) is used for managing disaster response and recovery for County agencies and departments and for constituents served by the County. The OC OA/EOC coordinates disaster response and recovery for its operational area (including all political subdivisions of Orange County) and coordinates operations resource requirements and availability with the State Regional Operations Center. The OC OA/EOC acts as a central point for coordination and the operational, administrative, and support needs of emergency workers. The OC OA/EOC is staffed with personnel from all agencies within the County and various operational area jurisdictions and agencies.

**The City of Dana Point Emergency Preparedness Plan.** The City of Dana Point's Emergency Preparedness Plan establishes protocol for responding to major emergencies and disasters. The purpose of this plan is to develop a strategy to prepare for, respond to, and recover from an emergency or disaster. The plan identifies potential hazards, assigns responsibilities to appropriate agencies, identifies jurisdictions and organizations with response activities, establishes and organizational structure to manage emergency response, plans actions to mitigate impacts related to an emergency or disaster, establishes a process of distributing emergency information, describe resources available to support emergency response activities, established the City's responsibilities related to emergency response, and provides training for emergency workers.

**City of Dana Point General Plan.** Hazards are addressed in the Public Safety Element of the City General Plan (1995). Specifically, the City's Public Safety Element establishes a Public Safety Plan to implement goals of the City's Emergency Preparedness Plan. As described in the City's General Plan Public Safety Element, the City also contracts with a variety of agencies for emergency services to minimize impacts during emergency situations. For example, due to its proximity to the San Onofre Power Plant, the City would rely on services provided by the United States Nuclear Regulatory Commission, the United States Federal Emergency Management Agency, OES, and the Interjurisdictional Planning Committee in the event of a nuclear emergency. The following goals and policies are applicable to the proposed project.

**Goal 3:** Reduce the risk of the community's inhabitants from exposure to hazardous materials and waste.

**Policy 3.1:** Cooperate with the County to implement applicable portions of the County's proposed Hazardous Waste Management Plan.

**Policy 3.5:** Encourage and support the proper disposal of hazardous household waste and waste oil.

**City of Dana Point Municipal Code.** Hazards are addressed in several chapters of the City's Municipal Code, as described below.

**Chapter 2.20 (Emergency Organization).** Chapter 2.20, Emergency Organization, of the City's Municipal Code calls for the preparation and implementation of an Emergency Plan to provide services within the City in the event of an emergency. This chapter of the Municipal Code also establishes a Disaster Council that gives orders and disseminates information in the event of an emergency to provide for the protection of life and property to preserve public order and safety, and to provide for the emergency service functions of the City.

**Chapter 8.24 (California Fire Code).** Chapter 8.24 in the City's Municipal Code establishes a variety of regulations related to hazards, including recommendations for development on land containing or emitting toxic substances, hazardous materials documentation procedures, preparation of hazardous materials management plans, and storage tank regulations, etc. In addition, this chapter includes regulations that reduce the amount of fuel (vegetation) and require debris clearing in an effort to reduce fire hazards. Additional provisions aimed at fire prevention include construction standards for new structures and remodels, road width standards and configurations designed to accommodate the passage of fire trucks and engines, and requirements for minimum fire flow rates for water mains.

Furthermore, the City Council of the City of Dana Point has also adopted, by reference, CCR Title 24, Part 9, known and designated as the 2013 California Fire Code (CFC) and the OCFA Guidelines to regulate and minimize hazardous conditions that may impact life and/or property from fire or explosion.

**Chapter 9.41 (Hazardous Waste Facilities).** Chapter 9.41 of the City's Municipal Code establishes standards to control the location, design, and maintenance of hazardous waste facilities to protect the health, life, and environment of residents in the City. For example, this chapter defines procedural requirements related to applications for hazardous waste facilities.

#### **4.7.5 Thresholds of Significance**

The following thresholds of significance criteria are based on Appendix G of the *State CEQA Guidelines* and the City's CEQA Thresholds of Significance. Based on these thresholds, implementation of the proposed project would have a significant adverse impact related to hazards and hazardous materials if it would:

**Threshold 4.7.1:** Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;

- Threshold 4.7.2:** Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- Threshold 4.7.3:** Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Threshold 4.7.4:** Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- Threshold 4.7.5:** For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would result in a safety hazard for people residing or working in a project area;
- Threshold 4.7.6:** For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area;
- Threshold 4.7.7:** Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Threshold 4.7.8:** Expose people or structures to a significant risk of loss, injury, or death involving wildfires, including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands.

#### 4.7.6 Impacts

- Threshold 4.7.1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials**

#### **Less than Significant Impact with Mitigation Incorporated.**

**Construction.** During demolition and construction activities for the proposed project, there is a possibility of generating small quantities of hazardous materials. Construction would also involve the use of potentially hazardous materials, including vehicle fuels, oils, and transmission fluids. All potentially hazardous materials would be contained, stored, and used in accordance with manufacturers' instructions and handled in compliance with existing federal, State, and local regulations to ensure that the amounts of these materials present during construction would be limited and would not pose a significant adverse hazard to workers or the environment. Furthermore, the construction contractor would be required to implement standard best management practices regarding hazardous materials storage, handling, and disposal during construction in compliance with the State Construction General Permit to protect water quality (refer to Section 4.8, Hydrology and Water Quality). Any associated risk would be adequately reduced to a level that is less than significant through compliance with these standards and regulations; thus, the limited use and storage of hazardous materials during construction of the

proposed project would not pose a significant hazard to the public or the environment. Accordingly, potential impacts associated with the routine transport, use, or disposal of potentially hazardous materials during construction of the proposed project would be less than significant, and no mitigation is required.

Based on site reconnaissance conducted as part of the *Phase I ESA*, the presence of ACMs, LBPs, and PCB-containing fixtures cannot be completely ruled out. ACMs and LBPs are associated with building materials, and PCBs are potentially used in electrical transformers. Because the proposed project includes the demolition of some of these structures and the presence of these chemicals cannot be ruled out, mitigation is required. Implementation of pre-demolition surveys, identified in Mitigation Measure 4.7.1 would ensure testing for the presence of any ACMs, LBPs, or PCBs prior to disturbance and/or demolition of existing on-site structures, and that the appropriate precautions would be taken to properly remove and dispose of such materials. With implementation of Mitigation Measure 4.7.1, impacts related to these ACMs, LBPs, and PCBs would be reduced to a less than a significant level.

The *Phase I ESA* did not identify any properties adjacent to the project site that were anticipated to have adversely impacted the project site. Furthermore, based on the distance from the project site, orientation of the properties from the project site, the direction of groundwater flow, and regulatory case status information (i.e., a “Case Closed” status), the three properties that were identified within the project vicinity (refer to Table 4.7.B) are not anticipated to have impacted the project site. However, in the unlikely event that unknown hazardous materials are discovered during construction activities, the project contractor would be required to comply with a Contingency Plan developed and approved prior to the commencement of grading activities. As stated in Mitigation Measure 4.7.2, the Contingency Plan will indicate that if construction workers encounter underground tanks, gases, odors, uncontained spills, or other unidentified substances, the contractor shall stop work, cordon off the affected area, and notify the Orange County Fire Authority (OCFA). The OCFA responder shall determine the next steps regarding possible site evacuation, sampling, and disposal of the substance consistent with local, State, and federal regulations. In addition, the California Department of Transportation, the California Highway Patrol, and local police and fire departments are trained in emergency response procedures for safely responding to accidental spills of hazardous substances on public roads, further reducing potential impacts to a less than significant level. With implementation of Mitigation Measure 4.7.2, the potential to encounter unknown hazardous waste during construction would be reduced to a less than significant level.

With implementation of Mitigation Measures 4.7.1 and 4.7.2, construction of the proposed project would not create a significant hazard to the public or to the environment through the routine transport, use or disposal of hazardous materials.

**Operation.** Project operation would involve the use of potentially hazardous materials (e.g., solvents, cleaning agents, paints, and pesticides) typical of church and education facilities that, when used properly, would not result in a significant hazard to church employees or visitors. Operation of the proposed project would not produce hazardous emissions or handle acutely hazardous materials, substances, or waste. Therefore, compliance with applicable regulations

would ensure that potential hazardous material impacts associated with the operation of the proposed project would be less than significant, and no mitigation is required.

**Threshold 4.7.2: Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment**

**Less than Significant Impact with Mitigation.**

**Construction.** As stated previously, construction activities would involve the routine use of hazardous materials such as vehicle fuels, oils, and transmission fluids. With the implementation of standard best management practices for water quality and Mitigation Measure 4.7.1, any risks associated with the storage, handling, or disposal of hazardous materials would be reduced to a level that is less than significant during construction. In addition, there are no reported releases on-site or off-site that would pose a potential concern during construction activities. Mitigation Measure 4.7.2, outlining the use of a contingency plan, would reduce impacts related to the possible discovery of unknown wastes or suspect materials during construction activities.

Therefore, as discussed under Threshold 4.7.1 and based on the information provided above, with implementation of Mitigation Measures 4.7.1 and 4.7.2, the proposed project would result in a less than significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment during construction.

**Operation.** As stated previously, during operation, the proposed project would involve the use of potentially hazardous materials (e.g., solvents, cleaning agents, paints, and pesticides) typical of church and education facilities that, when used properly, would not produce hazardous emissions or handle acutely hazardous materials, substances, or waste. As stated previously, operation of the proposed project would not result in the production of hazardous emissions or handling of hazardous materials. Therefore, compliance with applicable regulations would ensure that operation of the proposed project would result in a less than significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions related to the release of hazardous materials during operation, and no mitigation is required.

**Threshold 4.7.3: Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school**

**Less than Significant Impact with Mitigation.** As previously stated, the Monarch Bay Montessori Academy has been identified within 0.25 mile of the project site. Additionally, the project site currently contains an on-site Preschool facility (South Shores Christian Preschool and Kindergarten) that would continue to operate during project construction and operation.

**Construction.** As stated previously, construction activities would involve the routine use of hazardous materials such as vehicle fuels, oils, and transmission fluids. With the implementation of standard best management practices for water quality and Mitigation Measure 4.7.1, any risks associated with the storage, handling, or disposal of hazardous materials during construction would be reduced to a level that is less than significant. In addition, there are no reported releases on-site or off-site that would pose a potential concern during construction activities. Mitigation Measure 4.7.2, which outlines the preparation and use of a contingency plan, would reduce impacts related to the possible discovery of unknown hazardous materials, substances, or waste during construction activities.

Therefore, as discussed under Threshold 4.7.1 and based on the information provided above, with implementation of Mitigation Measures 4.7.1 and 4.7.2, the proposed project would result in a less than significant hazard to the public or the environment, including Monarch Bay Montessori Academy or South Shores Christian Preschool & Kindergarten.

Additionally, although construction of the proposed project would use construction equipment that would generate dust and particulate matter during site preparation activities, these activities would not result in hazardous emissions that would impact the existing pre-school on the project site or the Monarch Bay Montessori Academy, and no mitigation is required.

**Operation.** As previously stated, the project site is located 0.10 mile away from the Monarch Bay Montessori Academy. Additionally, South Shores Christian Preschool and Kindergarten would continue to operate during operation of the project. As stated previously, during operation, the proposed project would involve the use of potentially hazardous materials (e.g., solvents, cleaning agents, paints, and pesticides) typical of church and education facilities that, when used properly, would not produce hazardous emissions or handle acutely hazardous materials, substances, or waste. Therefore, compliance with applicable regulations would ensure that operation of the proposed project would result in a less than significant hazard to the public or the environment, including Monarch Bay Montessori Academy or South Shores Christian Preschool and Kindergarten. No mitigation is required.

**Threshold 4.7.4:**        **Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment**

**No Impact.** The *Phase I ESA* prepared for the proposed project determined that the project site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5, including the Cortese List, and would not create a significant hazard to the public or the environment. No mitigation is required.

**Threshold 4.7.5:** For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, the project would result in a safety hazard for people residing or working in a project area

**No Impact.** The closest airport to the project site is John Wayne Airport, which is approximately 15 miles northwest of the project site. Therefore, the project site is not located within 2 miles of a public airport or within an airport plan, and the proposed project would not have any impacts related to a public airport. No mitigation is required.

**Threshold 4.7.6:** For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area

**No Impact.** The project site is not located in the vicinity of a private airstrip. Therefore, the proposed project would not result in safety hazards to people working or residing in the area. No mitigation is required.

**Threshold 4.7.7:** Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

**Less than Significant Impact.** According to the City's General Plan Public Safety Element, the City has established a Disaster Preparedness Plan and a Public Safety Plan. These plans detail how the City would respond to emergency situations related to natural disasters, technological incidents, and national security emergencies. In addition, the General Plan identifies evacuation routes within the City to be used in the event of an emergency that would require the evacuation of all or part of the City.

The proposed project would provide adequate access for emergency vehicles and would meet all design requirements established by the OCFA. Furthermore, the proposed project would not include design features that would physically interfere with emergency response or evacuation. Therefore, implementation of the proposed project would not impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan and impacts are considered less than significant, and no mitigation is required.

**Threshold 4.7.8:** Expose people or structures to a significant risk of loss, injury, or death involving wildfires, including where wildlands are adjacent to urbanized areas or where residents are intermixed with wildlands

**Less than Significant Impact.** Although the project site is located within a developed area, open space abuts the hillside along the eastern portion of the project site. This open space is characterized by natural vegetation on the hillside and landscaped grass areas associated with the Monarch Beach Golf Links. Therefore, there is a potential for a wildland fire to occur near the project site. However, because the proposed project would be designed in compliance with OCFA design requirements and a



Fuel Modification Plan would be prepared for the project site, impacts related to wildland fires would be less than significant.

#### 4.7.7 Mitigation Measures

**Mitigation Measure 4.7.1: Predemolition Surveys.** Prior to commencement of demolition activities, the Director of the City of Dana Point (City) Building Official, or designee, shall verify that predemolition surveys for asbestos-containing materials (ACMs) and lead-based paints (LBPs) (including sampling and analysis of all suspected building materials) and inspections for polychlorinated biphenyl (PCB)-containing electrical fixtures shall be performed. All inspections, surveys, and analyses shall be performed by appropriately licensed and qualified individuals in accordance with applicable regulations (i.e., American Society for Testing and Materials (ASTM) E 1527-05, and 40 Code of Federal Regulations (CFR), Subchapter R, Toxic Substances Control Act [TSCA], Part 716). If the predemolition surveys do not find ACMs, LBPs, or PCB-containing electrical fixtures, the inspectors shall provide documentation of the inspection and its results to the City Building Department to confirm that no further abatement actions are required.

If the predemolition surveys find evidence of ACMs, LBPs, or PCB-containing electrical fixtures, all such materials shall be removed, handled, and properly disposed of by appropriately licensed contractors according to all applicable regulations during demolition of structures (40 CFR, Subchapter R, TSCA, Parts 745, 761, and 763). Air monitoring during these predemolition surveys shall be completed by appropriately licensed and qualified individuals in accordance with applicable regulations both to ensure adherence to applicable regulations (e.g., South Coast Air Quality Management District [SCAQMD]) and to provide safety to workers and the adjacent community.

The City shall provide documentation (e.g., all required waste manifests, sampling, and air monitoring analytical results) to the County of Orange Environmental Health Division showing that abatement of any ACMs, LBPs, or PCB-containing electrical fixtures identified in these structures has been completed in full compliance with all applicable regulations and approved by the appropriate regulatory agency(ies) (40 CFR, Subchapter R, TSCA, Parts 716, 745, 761, 763, and 795 and California Code of Regulations [CCR] Title 8, Article 2.6). An Operating & Maintenance (O&M) Plan shall be prepared for any ACM, LBP, or PCB-containing fixtures to remain in place and will be reviewed and approved by the County of Orange Environmental Health Division.

**Mitigation Measure 4.7.2:**     **Contingency Plan.** Prior to commencement of grading activities, the Director of the Orange County Environmental Health Division, or designee, shall review and approve a contingency plan that addresses the potential to encounter on-site unknown hazards or hazardous substances during demolition and construction activities. The plan shall indicate that if construction workers encounter underground tanks, gases, odors, uncontained spills, or other unidentified substances, the contractor shall stop work, cordon off the affected area, and notify the Orange County Fire Authority (OCFA). The OCFA responder shall determine the next steps regarding possible site evacuation, sampling, and disposal of the substance consistent with local, State, and federal regulations.

#### 4.7.8 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative study area for hazards and hazardous materials.

**Less than Significant Impact.** As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects. The cumulative impact area for hazards and hazardous materials consists of: (1) the area that could be affected by proposed project activities, and (2) the areas impacted by other projects where activities could directly or indirectly impact the presence or fate of hazardous materials on site. Typically, only projects adjacent or abutting the project site are considered because of the limited potential impact area associated with release of hazardous materials into the environment.

In the existing condition, building materials may contain hazardous materials that would need to be removed and transported off site to an approved disposal facility. This would be a temporary condition that is subject to regulatory oversight. After implementation, the proposed project would involve the use of a similar, limited amount of hazardous materials associated with existing church operations. The contribution of hazardous materials use and hazardous waste disposal with implementation of the proposed project is minimal, and combined hazardous materials effects from past, present, and reasonably foreseeable projects within the County and the City would not be significant. As previously stated, the proposed project would involve the use of potentially hazardous materials (e.g., solvents, cleaning agents, paints, pesticides, and diesel and petroleum fuels), but these products would be used in small amounts and any spills that do occur would be cleaned up when they occur. Proper and routine use of these products would not result in a significant hazard to residents or workers in the vicinity of the proposed project. The proposed project would not contribute incrementally to any potential airport proximity hazards. Furthermore, for the proposed project and all other projects in the area to be approved, each project is required to be consistent with the existing regulations related to hazards and hazardous materials. Consistency with federal, State, and local regulations prevent this and other projects from creating cumulative impacts in terms of hazards and hazardous materials.

Impacts associated with hazardous soils, groundwater, and use of hazardous materials on site would be controlled through application of standard regulatory procedures set forth in the Mitigation Measures 4.7.1 and 4.7.2 and other mitigation cited in Section 4.8, Hydrology and Water Quality. For the reasons outlined above, implementation of the proposed project would not result in an incremental contribution to cumulative impacts related to hazards and hazardous materials that are considered cumulatively considerable. With implementation of Mitigation Measures 4.7.1 and 4.7.2, the proposed project's incremental contribution to impacts related to hazards and hazardous materials would be reduced to less than significant.

#### **4.7.9 Significant Unavoidable Adverse Impacts**

The proposed project would not result in any significant and unavoidable adverse impacts related to hazards or hazardous materials.

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## 4.8 HYDROLOGY AND WATER QUALITY

### 4.8.1 Introduction

This section evaluates the potential impacts to hydrology and water quality conditions from implementation of the South Shores Church Master Plan (proposed project). The analysis in this section is based in part on the *Preliminary Water Quality Management Plan* (Adams-Streeter Civil Engineers, Inc., November 21, 2012) and the *Master Plan Hydrology Report* (Adams-Streeter Civil Engineers, Inc., February 29, 2012), which are included in Appendix G of this Environmental Impact Report (EIR).

### 4.8.2 Existing Environmental Setting

**Surface Water.** The project site lies within the Salt Creek Watershed, a 4,500-acre (ac) subwatershed of the Dana Point Coastal Streams Watershed. The Dana Point Coastal Streams receiving water is the Pacific Ocean. The Dana Point Coastal Streams Watershed is a 10.28-square-mile (sq mi) watershed. The main tributary of the Dana Point Coastal Streams watershed is Salt Creek, which ultimately drains into the Pacific Ocean.<sup>1</sup>

For planning purposes, the San Diego Regional Water Quality Control Board (RWQCB) uses a watershed classification system that divides surface waters into hydrologic units, areas, and subareas. As designated by the San Diego RWQCB, the project site is located within the San Juan Hydrologic Unit (HU). The San Juan HU is divided into Hydrologic Areas (HAs), which are then divided into Hydrologic Subareas (HSAs). The project site is located the Laguna HA and in the Dana Point HSA.<sup>2</sup>

In the existing condition, runoff from the project site drains in a southeasterly direction, away from Crown Valley Parkway. Runoff from approximately 3.25 ac of the 6 ac project site sheet flows to the southeast corner of the property into an existing man-made drainage basin. Of the 3.25 ac, runoff from the existing parking lot drains to an existing catch basin and then to an underground storm drain before discharging to a concrete channel that outlets to the drainage basin. Runoff from the remainder of the 3.25 ac flows to the underground storm drain system at various locations before discharging into the drainage basin. The existing drainage basin discharges to an existing concrete v-ditch that runs south toward the Pointe Monarch Community and discharges into a man-made drainage basin. From the basin, flow travels southeast via a reinforced concrete pipe storm drain, which connects to a concrete box culvert (Orange County Flood Control District [OCFCD] Facility No. K01) at the north side of Pacific Coast Highway and the bottom of Salt Creek. Flows then travel within the concrete box culvert underneath Pacific Coast Highway and enter the Salt Creek Ozone Treatment Facility before discharging directly to the Pacific Ocean.

Runoff from the remaining 2.75 ac of the project site does not drain to the southeast corner of the site and the drainage basin. Approximately 2.4 ac in the areas surrounding the existing Preschool, Administration and Fellowship Hall, and Chapel buildings and the undeveloped hillsides on the

<sup>1</sup> Orange County Public Works. OC Watersheds. Dana Point Coastal Streams. <http://ocwatersheds.com/programs/ourws/dpcoastalstreams> (accessed March 20, 2013).

<sup>2</sup> San Diego Regional Water Quality Control Board. 1994. Water Quality Control Plan for the San Diego Basin.

eastern side of the project site drains toward the existing slope on the east side of the project site. In addition, runoff from a small area of the site (0.4 ac) consisting of driveway and landscaping drains toward Crown Valley Parkway.

**Surface Water Quality.** As discussed in Section 4.8.3, downstream of the project site, Salt Creek at the Pacific Ocean is impaired for a total coliform. The Salt Creek Ozone Treatment Facility was constructed to provide advanced treatment to reduce bacteria levels in Salt Creek dry-weather flows that previously resulted in a high number of beach postings (warnings). The facility has been operational since November 2005 and is operated, in general, from April/May through mid-November, treating surface runoff from the Salt Creek Watershed. Since opening of the Salt Creek Ozone Treatment Facility, the number of beach mile days posted with warnings has declined from 6 beach mile days in 2004 to 0.1 beach mile day in 2009.<sup>1</sup>

**Groundwater.** According to the California Department of Water Resources, the project site is not located above a designated groundwater basin.<sup>2</sup> For management purposes, groundwater basins are designated in the San Diego RWQCB's Basin Plan using the same HUs, HAs, and HSAs as surface waters. During geotechnical investigations, minor groundwater seepage was encountered sporadically, and a static water table was encountered at approximately 90 feet (ft) below ground surface (bgs).

**Floodplains/Inundation Zones.** According to the Federal Emergency Management Agency (FEMA) Federal Insurance Rate Map (FIRM) No. 06059C0501J (December 3, 2009), the project site is located within Zone X, areas determined to be outside the 0.2 percent annual chance (500-year) floodplain.

According to the Tsunami Inundation Map for Emergency Planning, Dana Point Quadrangle/San Juan Capistrano Quadrangle, the project is not located in a tsunami inundation zone.<sup>3</sup>

### 4.8.3 Regulatory Setting

#### Federal Regulations.

**Clean Water Act.** In 1972, the Federal Water Pollution Control Act (later referred to as the Clean Water Act [CWA]) was amended to require that the discharge of pollutants into waters of the United States from any point source be effectively prohibited unless the discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) permit. In 1987, the CWA was again amended to require that the United States Environmental Protection Agency (EPA) establish regulations for the permitting of storm water discharges (as a point source) by

<sup>1</sup> City of Dana Point. Dana Point Salt Creek Ozone Treatment Facility fact sheet. <http://www.danapoint.org/index.aspx?page=339> (accessed March 20, 2013).

<sup>2</sup> California Department of Water Resources. 2006. California's Groundwater Bulletin 118.

<sup>3</sup> California Emergency Management Agency, California Geological Survey, and University of Southern California. Tsunami Inundation Map for Emergency Planning, Dana Point Quadrangle/San Juan Capistrano Quadrangle, State of California-County of Orange. March 15, 2009.

municipal and industrial facilities and construction activities under the NPDES permit program. The regulations require that Municipal Separate Storm Sewer System (MS4) discharges to surface waters be regulated by an NPDES permit.

The CWA requires states to adopt water quality standards for water bodies and have those standards approved by the EPA. Water quality standards consist of designated beneficial uses for a particular water body (e.g., wildlife habitat, agricultural supply, fishing), along with water quality criteria necessary to support those uses. Water quality criteria are set concentrations or levels of constituents—such as lead, suspended sediment, and fecal coliform bacteria—or narrative statements that represent the quality of water that support a particular use. Because California had not established a complete list of acceptable water quality criteria for toxic pollutants, the EPA Region IX established numeric water quality criteria for toxic constituents in the form of the California Toxics Rule (CTR).

When designated beneficial uses of a particular water body are being compromised by water quality, Section 303(d) of the CWA requires identifying and listing that water body as impaired. Once a water body has been deemed impaired, a Total Maximum Daily Load (TMDL) must be developed for each impairing water quality constituent. A TMDL is an estimate of the total load of pollutants from point, nonpoint, and natural sources that a water body may receive without exceeding applicable water quality standards (often with a “factor of safety” included, which limits the total load of pollutants to a level well below that which could cause the standard to be exceeded). Once established, the TMDL is allocated among current and future dischargers into the water body.

## State Regulations.

**California Porter-Cologne Act.** The federal CWA places the primary responsibility for the control of water pollution and for planning the development and use of water resources within the states, although it does establish certain guidelines for the states to follow in developing their programs.

California’s primary statute governing water quality and water pollution is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resources Control Board (SWRCB) and the RWQCB broad powers to protect water quality and is the primary vehicle for implementation of California’s responsibility under the federal CWA. The Porter-Cologne Act grants the SWRCB and RWQCB the authority and responsibility to adopt plans and policies, to regulate discharges to surface and groundwater, to regulate waste disposal sites, and to require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substance, sewage, oil, or petroleum product.

Each RWQCB must formulate and adopt a water quality plan for its region. The regional plans are to conform to the policies set forth in the Porter-Cologne Act and established by the SWRCB in its State water policy. The Porter-Cologne Act also provides that a RWQCB may include in its region a regional plan with water discharge prohibitions applicable to particular conditions, areas, or types of waste.

**San Diego Water Quality Control Plan (Basin Plan).** The San Diego RWQCB has adopted a Water Quality Control Plan (Basin Plan) for its region of responsibility, which includes the City. The RWQCB has delineated water resource area boundaries based on hydrological features. For purposes of achieving and maintaining water quality protection, specific beneficial uses have been identified for each of the hydrologic areas described in the Basin Plan. The Basin Plan also establishes implementation programs to achieve water quality objectives to protect beneficial uses and requires monitoring to evaluate the effectiveness of the programs. These objectives must comply with the State antidegradation policy (State Board Resolution No. 68-16), which is designed to maintain high-quality waters while allowing some flexibility if beneficial uses are not unreasonably affected.

Beneficial uses of water are defined in the Basin Plan as those necessary for the survival or well-being of humans, plants, and wildlife. The existing beneficial uses for the Salt Creek, as designated by the RWQCB in the Basin Plan, are listed below.

- **Agricultural Supply (AGR):** Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, and support of vegetation for range grazing.
- **Noncontact Water Recreation (REC2):** Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, and aesthetic enjoyment in conjunction with the above activities.
- **Warm Freshwater Habitat (WARM):** Uses of water that support warm-water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
- **Wildlife Habitat (WILD):** Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g. mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

In addition, the following potential beneficial use for Salt Creek is listed below.

- **Water Contact Recreation (REC1):** Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, waterskiing, skin diving, scuba diving, surfing, whitewater activities, fishing, and use of natural hot springs.

The only existing beneficial use for groundwater in the Dana Point HSA is AGR. Both Salt Creek and groundwater in the Dana Point HSA are listed as exempted from the Municipal and Domestic Supply (MUN) beneficial use.

The Basin Plan has established narrative and numeric water quality objectives for inland surface streams, which include Salt Creek. If water quality objectives are exceeded, the RWQCB can use its regulatory authority to require municipalities to reduce pollutant loads to the affected receiving waters. Relevant surface water quality objectives for the proposed project are shown in Table 4.8.A.



**Table 4.8.A: Water Quality Objectives**

<b>Constituent</b>	<b>Objective</b>
Ammonia, unionized	Discharge of wastes shall not cause concentrations of unionized ammonia to exceed 0.025 mg/L (as N).
Bacteria, Coliform	In waters designated for REC1, the fecal coliform concentration based on a minimum of not less than 5 samples for any 30-day period shall not exceed a log mean of 200 organisms/100 ml, nor shall more than 10% of all samples collected during any 30-day period exceed 400 organisms/100 ml.
Bacteria, E. Coli	In fresh waters designated for REC1, the steady state E. coli concentration shall not exceed 126 colonies/100 ml, the maximum concentration shall not exceed 406 colonies/100 ml at moderately or lightly used areas, and the maximum concentration shall not exceed 576/100 ml for infrequently used areas.
Bacteria, Enterococci	In salt waters designated for REC-1, the steady state enterococci concentration shall not exceed 33 colonies/100 ml, the maximum concentration shall not exceed 108 colonies/100 ml at moderately or lightly used areas, and the maximum concentration shall not exceed 151/100 ml for infrequently used areas.
Biostimulatory Substances	<p>Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.</p> <p>Concentrations of nitrogen and phosphorus, by themselves or in combination with other nutrients, shall be maintained at levels below those that stimulate algae and emergent plant growth. Threshold total phosphorus (P) concentrations shall not exceed 0.05 mg/L in any stream at the point where it enters any standing body of water, nor shall they exceed 0.025 mg/L in any standing body of water. A desired goal in order to prevent plant nuisance in streams and other flowing waters appears to be 0.1 mg/L total P. These values are not to be exceeded more than 10% of the time unless studies of the specific water body in question clearly show that water quality objective changes are permissible and changes are approved by the San Diego RWQCB. Analogous threshold values have not been set for nitrogen compounds; however, natural ratios of nitrogen to phosphorus are to be determined by surveillance and monitoring and upheld. If data are lacking, a ratio of N:P = 10:1 on a weight-to-weight basis shall be used.</p>
Color	<p>Waters shall be free of coloration that causes nuisance or adversely affects the water for beneficial uses.</p> <p>The natural color of fish, shellfish, or other resources in inland surface waters, coastal lagoons or bays, and estuaries shall not be impaired.</p>
Dissolved Oxygen	Dissolved oxygen levels shall not be less than 5 mg/L in inland surface waters with a designated WARM beneficial use. The annual mean dissolved oxygen concentration shall not be less than 7 mg/L more than 10% of the time.
Floating Materials	Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses.
Oil and Grease	Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, or that cause nuisance or otherwise adversely affect beneficial uses.
Pesticides	No individual pesticide or combination of pesticides shall be present in the water column, sediments, or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels that will bioaccumulate in aquatic organisms to levels that are harmful to human health, wildlife, or aquatic organisms.

**Table 4.8.A: Water Quality Objectives**

<b>Constituent</b>	<b>Objective</b>
pH	In inland surface waters, the pH shall not be depressed below 6.5 or raised above 8.5.
Radioactivity	Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life, or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
Sediment	Waters shall not contain suspended or settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.
Suspended and Settleable Solids	Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.
Taste and Odor	Waters shall not contain taste- or odor-producing substances in concentrations that cause a nuisance or that adversely affect beneficial uses.  The natural taste and odor of fish, shellfish, or other regional water resources used for human consumption shall not be impaired for inland surface waters.
Temperature	The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the San Diego RWQCB that such alteration in temperature does not adversely affect beneficial uses.
Toxicity	All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the San Diego RWQCB.  Inland surface waters shall not contain toxic pollutants in excess of the numerical objectives applicable to California specified in the California Toxics Rule (40 CFR 131.36)
Turbidity	Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Source: San Diego Regional Water Quality Control Board. 1994. Water Quality Control Plan for the San Diego Basin.

CFR = Code of Federal Regulations

mg/L = milligrams per liter

ml = milliliter

pH = percent hydrogen

REC-1 = Contact Water Recreation

RWQCB = Regional Water Quality Control Board

WARM = Warm Freshwater Habitat

In addition to the surface water objectives listed in Table 4.8.A, the following site-specific water quality objectives are designated in the Basin Plan for the Laguna HA:

- Total Dissolved Solids = 1,000 milligrams per liter (mg/L)
- Chloride = 400 mg/L
- Sulfate = 500 mg/L
- Percent Sodium = 60
- Iron = 0.3 mg/L
- Manganese = 0.05 mg/L
- Boron = 0.75 mg/L
- Turbidity = 20 National Turbidity Units (NTU)
- Color = 20 units
- Fluoride = 1 mg/L

The following site-specific groundwater objectives are designated in the Basin Plan for the Dana Point HSA:

- Total Dissolved Solids = 1,200 mg/L
- Chloride = 400 mg/L
- Sulfate = 500 mg/L
- Percent Sodium = 60
- Nitrate = 45 mg/L
- Iron = 0.3 mg/L
- Manganese = 0.05 mg/L
- Methylene Blue Active Substances = 0.5 mg/L
- Boron = 0.75 mg/L
- Turbidity = 5 NTU
- Color = 15 units
- Fluoride = 1 mg/L

**California Toxics Rule.** The CTR provides water quality criteria for certain potentially toxic compounds for inland surface waters, enclosed bays, estuaries, and waters designated for human health or aquatic life uses. Although the CTR criteria do not apply directly to discharges of storm water runoff, the CTR criteria are utilized as benchmarks for toxics in urban runoff. The CTR and other water quality criteria and targets are used as benchmarks to evaluate the potential ecological impacts of storm water runoff to receiving waters. The CTR establishes acute and chronic surface water quality standards for certain water bodies. Acute criteria provide benchmarks for the

highest permissible concentration below which aquatic life can be exposed for short periods of time without deleterious effects. Chronic criteria provide benchmarks for an extended period of time (i.e., 4 days or more) without deleterious effects. The acute CTR criteria have a shorter relevant averaging period (less than 4 days) and provide a more appropriate benchmark for comparison for storm water flows.

**TMDL Requirements.** On February 10, 2010, the San Diego RWQCB adopted Resolution No. R9-2010-0001, *A Resolution Amending the Water Quality Control Plan for San Diego Basin (9) to Incorporate Revised Total Maximum Daily Loads for Indicator Bacteria Project I – Twenty Beaches and Creeks in the San Diego Region (Including Tecolote Creek)*. This TMDL Basin Plan amendment was subsequently approved by the SWRCB on December 14, 2010, by the Office of Administrative Law approval. This Basin Plan amendment establishes TMDLs and associated load and wasteload allocations for total coliform, fecal coliform, and enterococci bacteria in 20 beach and creek segments, including the Pacific Ocean at Salt Creek and Monarch Beach. Due to the delisting of these beaches for REC1 uses in the 2010 Integrated Report, as long as water quality continues to meet delisting standards, no further actions, beyond monitoring, is required under the TMDL by the Municipal MS4s stakeholders as wasteload allocations have been met.

**Clean Water Act, Section 402, National Pollutant Discharge Elimination System.** Direct discharges of pollutants into waters of the United States are not allowed except in accordance with the NPDES program established in Section 402 of the CWA.

**General Construction Activity Storm Water Permit.** The *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ, NPDES No. CAS000002, as amended by Order Nos. 2010-0004-DWQ and 2012-0006-DWQ (Construction General Permit [CGP]), adopted by the SWRCB, regulates construction activity that includes clearing, grading, and excavation resulting in soil disturbance of at least 1 ac of total land area. The CGP authorizes the discharge of storm water to surface waters from construction activities. It prohibits the discharge of materials other than storm water and authorized nonstorm water discharges and all discharges that contain a hazardous substance in excess of reportable quantities established at 40 Code of Federal Regulations (CFR) 117.3 or 40 CFR 302.4 unless a separate NPDES Permit has been issued to regulate those discharges.

The CGP requires that all developers of land where construction activities will occur over more than 1 ac do the following:

- Complete a Risk Assessment to determine pollution prevention requirements pursuant to the three Risk Levels established in the CGP;
- Eliminate or reduce nonstorm water discharges to storm sewer systems and other waters of the United States;

- Develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that specifies Best Management Practices (BMPs) to reduce pollution in storm water discharges to the Best Available Technology Economically Achievable/Best Conventional Pollutant Control Technology standards; and
- Perform inspections and maintenance of all BMPs.

To obtain coverage under the CGP, a project Applicant must electronically file all Permit Registration Documents with the SWRCB prior to the start of construction. Permit Registration Documents must include:

- Notice of Intent (NOI)
- Risk Assessment
- Site Map
- SWPPP
- Annual Fee
- Signed Certification Statement

Typical BMPs contained in SWPPPs are designed to minimize erosion during construction, stabilize construction areas, control sediment, control pollutants from construction materials, and address postconstruction runoff quantity (volume) and quality (treatment). The SWPPP must also include a discussion of the program to inspect and maintain all BMPs.

### **Local Regulations.**

**Groundwater Discharge Permit.** On March 12, 2008, the San Diego RWQCB issued the *General Waste Discharge Requirements (WDRs) for Discharges from Groundwater Extraction and Similar Discharges to Surface Waters within the San Diego Region Except for San Diego Bay (WDR)* (Order No. R9-2008-0002, Permit No. CAG919002) (Groundwater Discharge Permit [GDP]). This permit regulates discharges of treated and untreated groundwater from construction to surface waters. It specifies the discharge prohibitions, receiving water limitations, monitoring and reporting program requirements, and general compliance determination criteria for groundwater dewatering during construction activities and drilling, construction, and purging of wells. Dischargers are required to collect and analyze representative groundwater samples for all constituents listed in the GDP. Based on the results, dischargers would be required to provide treatment for any toxic compounds detected above the applicable screening levels. To obtain coverage under the GDP, each permittee must submit an NOI to begin the application process.

**Municipal NPDES Permit.** The City of Dana Point is a copermittee under the Municipal NPDES Permit for the San Diego Region (*WDRs for Discharges of Urban Runoff from the MS4s Draining the Watersheds of the County of Orange, the Incorporated Cities of Orange County, and the OCFCD within the San Diego Region* [MS4 Permit, Order No. R9-2009-0002, NPDES No. CAS0108740]), which was approved by the San Diego RWQCB on December 16, 2009.

The MS4 Permit stipulates requirements for new development and significant redevelopment, including specific selection and sizing criteria for Low-Impact Development (LID) Best Management Practices (BMPs), Treatment Control BMPs, and Hydromodification Control BMPs.

**Drainage Area Master Plan.** To implement the requirements of the MS4 Permit, the copermittees developed a Drainage Area Master Plan (DAMP) that includes a Model New Development and Redevelopment Program (Model Program). The DAMP identifies measures intended to reduce the discharge of pollutants to the Maximum Extent Practicable level (MEP) using BMPs, control techniques and systems, engineering methods, and other appropriate provisions.

**Local Implementation Plan.** Per the requirements in the DAMP and the MS4 Permit, the City has adopted a Local Implementation Plan (LIP) implementing the DAMP and MS4 Permit in its jurisdiction. Using the LIP as a guide, the City will approve Water Quality Management Plans (WQMPs) for new development and redevelopment projects within its jurisdiction as part of the development plan and entitlement approval process. WQMPs for new development and significant redevelopment projects that fall under specific priority project categories must include Site Design, Routine Structural and Nonstructural, and Treatment Control BMPs; include an Operations and Maintenance Plan; and address LID Retention/Biofiltration and hydromodification criteria. The priority project categories are those determined by the RWQCB to have the greatest potential to impact receiving waters with polluted runoff. The proposed project is considered a “priority” project because it would add or replace at least 5,000 square feet (sf) or more of impervious surface.

**Model Water Quality Management Plan.** Pursuant to Order No. R9-2009-0002, the County of Orange prepared a Model Water Quality Management Plan (Model WQMP) (December 20, 2013) to assist with project development in south Orange County. To assist with compliance with the MS4 permit requirements and to explain aspects of the Model WQMP, the County also prepared a Technical Guidance Document (TGD) (December 20, 2013).

**Hydromodification Plan.** Pursuant to Order No. R9-2009-0002, the County prepared a Hydromodification Management Plan (HMP). A Proposed Final HMP was submitted to the San Diego RWQCB on October 25, 2012. The San Diego RWQCB provided a letter dated July 31, 2013, making a “Finding of Adequacy” regarding the HMP, provided that certain revisions were made. All Priority Development Projects are required to comply with hydromodification criteria in the HMP. The goal of hydromodification control is to integrate hydrologic controls into a proposed project so that postproject runoff discharge rates and durations do not exceed predevelopment (naturally occurring) discharge rates and durations.

**Municipal Code.** Chapter 15.10 of the City of Dana Point Municipal Code regulates storm water and surface runoff water quality. The Municipal Code requires developers of a priority

development project to submit a WQMP to the City for approval. The Municipal Code specifies that all WQMPs must be consistent with the City's Model WQMP, including demonstrating compliance with all applicable WQMP requirements and LID Retention/Biofiltration and hydromodification requirements provided for in the City's LIP. Each Applicant must submit details to the City regarding the mechanism to be utilized to ensure ongoing long-term maintenance of all structural postconstruction BMPs. In addition, the developer must provide the City with evidence of coverage under the CGP, GDP, or any other applicable General Permit.

Chapter 8.01 of the Municipal Code regulates grading and excavation activities. This chapter of the Municipal Code requires erosion control plans, prepared in accordance with Subarticle 13 of the Grading Manual, to be submitted to the City for approval by September 1 each year for all projects under grading permits.

#### **4.8.4 Methodology**

Project impacts to hydrology and water quality were evaluated based on the thresholds of significance set forth below and on the proposed project's adherence to local, State, and federal standards; proposed land use; design; and proposed BMPs for control of surface runoff and reduction of pollutants in runoff.

#### **4.8.5 Thresholds of Significance**

The thresholds for hydrology and water quality impacts used in this analysis are consistent with the City's Initial Study Checklist and Appendix G of the *State CEQA Guidelines*. The impacts of the project on hydrology and water quality are considered to be significant if the proposed project would:

- Threshold 4.8.1:** Violate any water quality standards or waste discharge requirements;
- Threshold 4.8.2:** Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Threshold 4.8.3:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site;
- Threshold 4.8.4:** Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site;
- Threshold 4.8.5:** Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Threshold 4.8.6:** Otherwise substantially degrade water quality;

- Threshold 4.8.7:** Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Threshold 4.8.8:** Place within a 100-year flood hazard area structures which would impede or redirect flood flows;
- Threshold 4.8.9:** Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam;
- Threshold 4.8.10:** Inundation by seiche, tsunami, or mudflow;
- Threshold 4.8.11:** Result in an increase in pollutant discharges to receiving waters. Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash);
- Threshold 4.8.12:** Result in significant alteration of receiving water quality during or following construction;
- Threshold 4.8.13:** Could the proposed project result in increased erosion downstream;
- Threshold 4.8.14:** Result in increased impervious surfaces and associated increased runoff;
- Threshold 4.8.15:** Create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes;
- Threshold 4.8.16:** Tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list. If so, can it result in an increase in any pollutant for which the water body is already impaired;
- Threshold 4.8.17:** Tributary to other environmentally sensitive areas. If so, can it exacerbate already existing sensitive conditions;
- Threshold 4.8.18:** Have a potentially significant environmental impact on surface water quality to either marine, fresh, or wetland waters;
- Threshold 4.8.19:** Have a potentially significant adverse impact on groundwater quality;
- Threshold 4.8.20:** Cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses; or
- Threshold 4.8.21:** Impact aquatic, wetland, or riparian habitat;

#### 4.8.6 Project Impacts

**Threshold 4.8.1:** **Would the project violate any water quality standards or waste discharge requirements**

and

**Threshold 4.8.6:** **Would the project otherwise substantially degrade water quality**

and



- Threshold 4.8.11:** Would the project result in an increase in pollutant discharges to receiving waters? Consider water quality parameters such as temperature, dissolved oxygen, turbidity and other typical stormwater pollutants (e.g., heavy metals, pathogens, petroleum derivatives synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash)
- and
- Threshold 4.8.12:** Would the project result in significant alteration of receiving water quality during or following construction
- and
- Threshold 4.8.18:** Would the project have a potentially significant environmental impact on surface water quality to either marine, fresh, or wetland waters
- and
- Threshold 4.8.19:** Would the project have a potentially significant adverse impact on groundwater quality
- and
- Threshold 4.8.20:** Would the project cause or contribute to an exceedance of applicable surface or groundwater receiving water quality objectives or degradation of beneficial uses

**Less than Significant Impact with Mitigation.**

**Construction.** Pollutants of concern during construction include sediments, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. During construction activities, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions. During construction, the total disturbed area would be 5.1 ac. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm runoff into downstream receiving waters (i.e., Salt Creek and, ultimately, the Pacific Ocean).

As specified in Mitigation Measure 4.8.1, the project would comply with the requirements of the CGP. Under the CGP, the project would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities to minimize erosion and prevent spills. Construction BMPs would include, but not be limited to: Erosion Control and Sediment Control BMPs designed to minimize erosion and retain sediment on site, and Good Housekeeping BMPs to prevent spills, leaks, and discharge of construction debris and waste into receiving waters. The SWPPP would be developed, and construction BMPs selected and implemented to target pollutants of concern during construction. The construction BMPs would be designed to retain sediment and other pollutants on site so they would not reach receiving waters. In addition, as specified in Mitigation Measure 4.8.2, erosion control plans would be prepared annually during construction and would detail the BMPs implemented during construction.

Due to the depth to the groundwater table (approximately 90 ft bgs), groundwater dewatering during construction would not be required. In addition, due to the depth to groundwater, the project does not have a potential to impact groundwater quality. Minor amounts of groundwater seepage may be present at the bottom of the deepest proposed caissons. However, any displaced groundwater would be minor and would be collected and evaporated on site. Therefore, coverage under a groundwater discharge permit would not be required.

Implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the requirements of the CGP, including preparation and implementation of a SWPPP and preparation of an erosion control plan, and compliance with all other requirements of the CGP, including monitoring, reporting, inspection and paying fees, would reduce potential construction impacts related to violation of water quality standards or WDRs, degradation of water quality, increase in pollutant discharge, alteration of receiving water quality, adverse impacts on water and groundwater quality, and degradation of beneficial uses to less than significant levels.

**Operation.** Pollutants of concern during operation of the proposed on-site uses include nutrients, pesticides, suspended solids/sediments, trash and debris, oil and grease, bacteria/viruses/pathogens, heavy metals, and toxic organic compounds. The primary pollutant of concern is indicator bacteria. The proposed project would result in a permanent increase in impervious surface area of 1.25 ac (an increase of 54 to 75 percent of the project site). An increase in impervious area would increase the volume of runoff during a storm, which would more effectively transport pollutants to receiving waters. Due to the depth to groundwater, the project does not have a potential to impact groundwater quality.

As specified in Mitigation Measure 4.8.3, LID Retention/Biofiltration BMPs, Site Design, Source Control, Treatment BMPs, and Hydromodification Management BMPs, as applicable, would be incorporated into the design of the proposed project to treat storm water runoff prior to discharge into the storm drain system. The goal of LID features is to mimic the site's existing hydrology by using design measures that capture, filter, store, evaporate, detain, and infiltrate runoff rather than allowing runoff to flow directly to piped or impervious systems. Site Design BMPs reduce runoff or pollutants at the source through intentional use of landforms and materials. Source Control BMPs are measures that focus on reducing or eliminating runoff and controlling sources of pollutants during operation of the project. Treatment BMPs utilize treatment mechanisms to remove pollutants that have entered storm water runoff. The overall BMP strategy is to: (1) reduce postproject runoff; (2) control sources of pollutants; (3) retain storm water runoff on site through infiltration, evapotranspiration, or reuse; and (4) treat storm water runoff before discharging it to the storm drain system or to receiving waters.

Source Control and Site Design BMPs considered for the proposed project are provided in Table 4.8.B. The proposed LID Retention/Biofiltration BMPs include roof drain planter boxes, storm water planters, proprietary biofilters, and biofiltration swales/depressed landscape to target pollutants of concern for the project site. In addition, an on-site detention system consisting of a pretreatment Continuous Deflection Separation (CDS) Unit and underground detention system is proposed to reduce peak flow during storm events to below that of existing conditions. The BMPs would be consistent with the requirements of the City's Model WQMP and would target pollutants of concern from the project site. Implementation of Mitigation Measure 4.8.3, which

**Table 4.8.B: Low Impact Development/Source Control and Site Design BMPs**

Name	Project-Specific Application
<b>Low Impact Development Retention/Biofiltration BMPs</b>	
Bioretention with Underdrains	Bioretention facilities would consist of downspout planter boxes/stormwater planters. Roof runoff would drain to a downspout, which would discharge into a planter boxes. Planter boxes are landscaped shallow depressions that capture and filter stormwater runoff. The facilities normally consist of a ponding area, mulch layer, planting soils, and plants. As stormwater passes down through the planning soil, pollutants are filtered, absorbed, biodegraded, and sequestered by the soil and plants. The underdrain system would route the treated runoff to the storm drain system.
Proprietary Biofilters	Proprietary biofilters, such as Filterra Systems <sup>®</sup> , treat stormwater flows through a specially designed filter media mixture contained in a landscaped concrete container. The filter media captures and immobilizes pollutants. The pollutants are then decomposed, volatilized, and incorporated into the biomass of the Filterra <sup>®</sup> system's micro/macro fauna and flora. Stormwater runoff flows through the media and into an underdrain system at the bottom of the container, where the treated water is discharged. Higher flows bypass the Filterra <sup>®</sup> via a downstream inlet structure or curb cut.
Biofiltration Swales/ Depressed Landscape	Open, shallow, vegetated channels that collect and slowly convey runoff through the property. The channels filter runoff through vegetation, subsoil matrix, and/or underlying soils; trap pollutants; promote infiltration; and reduce flow velocity. Biofiltration swales/depressed landscape would be lined with a non-permeable base and have a perforated pipe at the bottom to drain the filtered water.
On-Site Detention System	<p>The on-site detention system would consist of a pretreatment Continuous Deflection Separation (CDS) Unit and an underground detention system, which would operate as a short-term holding tank to reduce peak flows.</p> <p>The CDS unit is a swirl concentrator hybrid technology that provides continuous deflection separation (a combination of swirl concentration and patented indirect screening). CDS units screen, separate, and trap debris, sediment, and oil from stormwater runoff.</p> <p>The underground detention system would consist of two 84-inch steel-reinforced polyethylene pipes with a restrictor plate at the outlet, which would control peak discharge flows with a restrictor plate. Flows leaving the detention system would discharge directly into the existing concrete v-ditch.</p>
<b>Low Impact Development/Site Design BMPs</b>	
Minimize the Impervious Footprint	The project minimizes its impervious footprint through the use of minimum-width designed streets, sidewalks, and parking lot aisles.
Conserve Natural Areas	The project would conserve natural hillside areas along the eastern edge of the property and would preserve trees where possible.
Minimize Soil Compaction in Landscaped Areas	Soil compaction within landscaped areas on the eastern side of the project site would be reduced to a minimum by not allowing construction equipment to travel over these areas.
Create Buffer Zones for Natural Water Bodies	A 20 ft minimum buffer zone consisting of natural hillside would remain at the eastern side of the project site and a 12 ft minimum buffer zone would remain at the southeast corner of the project site. A landscaped buffer area has been incorporated in the area between the upper deck of the parking lot and

**Table 4.8.B: Low Impact Development/Source Control and Site Design BMPs**

Name	Project-Specific Application
	Crown Valley Parkway. In addition, landscaped areas would be located between the buildings and concrete pathways. The project also includes biofiltration swales and depressed landscaped areas.
Minimize Disturbances in Natural Drainages	A 20 ft minimum buffer zone consisting of natural hillside would remain at the eastern side of the project site and a 12 ft minimum buffer zone would remain at the southeast corner of the project site. A landscaped buffer area has been incorporated in the area between the upper deck of the parking lot and Crown Valley Parkway. In addition, landscaped areas would be located between the buildings and concrete pathways. The project also includes biofiltration swales and depressed landscaped areas.
Use of Native or Drought-Tolerant Trees/Shrubs	The project would utilize native and/or drought-tolerant trees and shrubs to maximize water conservation. Existing native trees and shrubs on the eastern side of the project site would be preserved to the maximum extent practicable.
Disconnect Impervious Surfaces	Building rooftops would be designed to drain into adjacent downspout planter boxes. The proposed parking structure would drain into bioretention/depressed landscape with an elevated outlet. The existing sanctuary building's roof drains would be disconnected and designed to drain into planter boxes. In addition, landscaped areas would be located between the buildings and concrete pathways. The project also includes biofiltration swales and depressed landscaped areas.
<b>Routine Nonstructural Source Control BMPs</b>	
Education for Property Owners, Tenants, and Occupants <sup>1</sup>	Practical informational materials will be provided to residents, occupants, and tenants to increase the public's understanding of storm water quality, sources of pollutants, and what they can do to reduce pollutants in storm water.
Activity Restrictions <sup>1</sup>	Rules or guidelines for developments will be established within appropriate documents (CC&Rs, lease terms, etc.) that prohibit activities that can result in discharges of pollutants.
Common Area Landscape Management <sup>1</sup>	Specific practices would be followed and ongoing maintenance conducted to minimize erosion and over-irrigation, conserve water, and reduce pesticide and fertilizer applications.
BMP Maintenance <sup>1</sup>	To ensure adequate and comprehensive BMP implementation, all responsible parties would be identified for implementing all nonstructural BMPs. For structural BMPs, cleaning, inspection, and other maintenance activities would be specified, including parties responsible for conducting such activities.
Underground Storage Tank Compliance <sup>1</sup>	Because of the known or potential presence of USTs on the project site, applicable UST regulations apply would be adhered to in order to avoid harm to humans or the environment.
Uniform Fire Code Implementation <sup>1</sup>	The project includes a hazardous material storage facility or other area regulated by Article 80 and, therefore, would implement measures to comply with this section of the Uniform Fire Code.
Common Area Litter Control <sup>1</sup>	Trash management and litter control procedures would be specified (including responsible parties) and implemented to reduce pollution of drainage water.
Contractor/Employee Training <sup>1</sup>	Practical informational materials and/or training would be provided to employees to increase their understanding of storm water quality, sources of pollutants, and their responsibility for reducing pollutants in storm water.
Drainage Facility Inspection <sup>1</sup>	Inspection procedures, schedules, and responsibilities would be established for drainage facilities to ensure regular cleaning, inspection, and maintenance.

**Table 4.8.B: Low Impact Development/Source Control and Site Design BMPs**

Name	Project-Specific Application
Street Sweeping Private Streets and Parking Lots <sup>1</sup>	Street sweeping frequency and responsible parties would be identified and regular sweeping conducted to reduce pollution of drainage water.
<b>Structural Source Control BMPs</b>	
Site Design and Landscape Planning	Site design and landscape planning would include the implementation of trees to intercept rainfall, conservation of natural areas to the maximum extent possible, and project slopes.
Roof Runoff Controls	All roof drains would be disconnected to drain into planter boxes.
Efficient Irrigation	The project would design the timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm drain. The project would utilize rain shutoff devices to prevent irrigation after precipitation, incorporate drip irrigation systems, and design irrigation systems to each landscape area's specific water requirements.
Storm Drain System Signage	A City-approved storm drain stencil/sign would be placed on all catch basins.
Alternative Building Materials	Alternative building materials would be considered to lower the potential to leach pollutants or reduce pollutant-generating maintenance activities.
Trash Enclosures	The trash container area would contain trash bins with covers and would be roofed over to prevent rain from entering the bin, thereby reducing water pollution. The design of the trash container area would include features to prevent drainage from adjoining roofs and pavement from entering the trash container areas. The trash enclosure drains would be connected to the sewer. The trash container areas would be surrounded by walls and gates to prevent off-site transport of trash. The South Shores Church maintenance personnel and waste removal company would be instructed to ensure that covers are kept closed and only opened at the time the trash is deposited.

BMPs = best management practices  
 CC&Rs = covenants, conditions, and restrictions  
 ft = foot/feet  
 UST = underground storage tank

requires implementation of BMPs that target pollutants of concern in runoff from the project site, would reduce potential operational impacts related to violation of water quality standards or WDRs, degradation of water quality, increase in pollutant discharge, alteration of receiving water quality, adverse impacts on water and groundwater quality, and degradation of beneficial uses to less than significant levels.

**Threshold 4.8.2:** **Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)**

**Less than Significant Impact.**

**Construction.** Due to the depth to groundwater on site (greater than 90 ft bgs), groundwater dewatering during construction would not be required. Minor amounts of groundwater seepage may be present at the bottom of the deepest proposed caissons. However, the volume of any displaced groundwater would be minor. In addition, grading and construction activities would compact soil and construction of structures would increase impervious area, which can decrease infiltration during construction. However, construction activities would be temporary, and the reduction in infiltration would not be substantial. In addition, due to the depth to groundwater, any reduction in infiltration would not impact groundwater recharge. Therefore, construction of the proposed project would not substantially deplete groundwater or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Construction impacts related to groundwater supplies would be less than significant, and no mitigation is required.

**Operation.** Operation of the project would not require groundwater extraction. As discussed previously, the proposed project would increase impervious surface area by 1.25 ac, which would reduce infiltration. However, the reduction in infiltration would not be substantial, and due to the depth to groundwater, any reduction would not impact groundwater recharge. Therefore, the project would not interfere with groundwater recharge such that there would be net deficit in aquifer volume or a lowering of the local groundwater table level. Operational impacts related to groundwater supplies would be less than significant, and no mitigation is required.

**Threshold 4.8.3:**        **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on or off site**

and

**Threshold 4.8.4:**        **Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off site**

and

**Threshold 4.8.13:**        **Could the proposed project result in increased erosion downstream**

#### **Less than Significant Impact with Mitigation.**

**Construction.** As previously described, during construction activities, the project site would be graded, excavated soil would be exposed, and there would be an increased potential for soil erosion compared to existing conditions. During a storm event, soil erosion and sedimentation could occur at an accelerated rate. For example, grading activities generate sediment, which has the potential to be washed into storm drains or tracked off site by construction trucks and heavy equipment. In addition, grading and construction activities would compact soil and construction of structures would increase the impervious area, which can increase runoff during construction.

There are no on-site streams or rivers; therefore, the project would not alter the course of a stream or river.

Mitigation Measure 4.8.1 requires preparation of a SWPPP to identify Construction BMPs to be implemented as part of the proposed project to reduce impacts to water quality during construction, including those impacts associated with soil erosion and increased runoff. In addition, as specified in Mitigation Measure 4.8.2, erosion control plans would be prepared annually during construction and would detail the BMPs to be implemented during construction. Implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the requirements of the CGP and preparation of an erosion control plan, would reduce potential construction impacts related to erosion and siltation and flooding to less than significant levels.

**Operation.** The proposed project would change on-site drainage patterns by adding impervious surface areas, including buildings. However, flows from the project site would continue to discharge to the storm drain system. There are no on-site streams or rivers; therefore, the project would not alter the course of a stream or river.

The project would increase impervious area by 1.25 ac, which would potentially increase the runoff volume and velocity from the site. However, the underground detention system would reduce peak flow to below that of existing conditions. Total peak flow from the site would decrease from 26.1 cubic feet per second (cfs) to 12.1 cfs for a 25-year storm and from 33.2 cfs to 14.2 cfs for a 100-year storm.

Because the project would reduce off-site discharge, and the downstream areas are not currently prone to flooding or erosion, the proposed project would not contribute to off-site flooding, erosion, or siltation. Because the project would reduce off-site discharge, the proposed project would not contribute to downstream erosion, siltation, or flooding.

In the proposed condition, 75 percent of the site would be impervious surface areas and not prone to erosion or siltation. The remaining 25 percent would be landscaping, which would minimize erosion and siltation. The project site would be designed for storm water to drain to the storm drain system. Therefore, on-site flooding, erosion, and siltation would not occur.

For these reasons, the project would not substantially alter the existing drainage pattern of the site or area, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation, or flooding on or off site. Operational impacts related to on- or off-site erosion, siltation, and flooding would be less than significant, and no mitigation is required.

**Threshold 4.8.5:**        **Would the project create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff**

**Less than Significant Impact with Mitigation.**

**Construction.** As discussed above, construction of the proposed project has the potential to introduce pollutants into the storm water drainage system from erosion, siltation, and accidental spills. In addition, grading and construction activities would compact soil and construction of structures would increase impervious area, which can increase runoff during construction. However, as specified in Mitigation Measure 4.8.1, the CGP requires preparation of a SWPPP to identify construction BMPs to be implemented during project construction to reduce impacts to water quality, including those impacts associated with soil erosion, siltation, spills, and increased runoff. In addition, as specified in Mitigation Measure 4.8.2, erosion control plans would be prepared annually during construction and submitted to the City Department of Public Works. The erosion control plans shall detail the BMPs implemented during construction.

With implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the CGP preparation of erosion control plans, construction impacts related to exceeding the capacity of, and providing additional sources of polluted runoff to, storm water drainage systems would be reduced to less than significant levels.

**Operation.** As discussed above, the project would increase impervious surface area, which would increase runoff from the site. However, the underground detention system would reduce the off-site discharge to below that of existing conditions. Because the proposed project would decrease the flow to the downstream storm water drainage system, it would not contribute runoff water that would exceed the capacity of an existing or planned storm water drainage system. In addition, the project includes roof drain planter boxes, storm water planters, proprietary biofilters, and biofiltration swales/depressed landscape to treat storm water runoff from the site during operation. With implementation of operational BMPs, the proposed project would not provide substantial additional sources of polluted runoff. Mitigation Measure 4.8.3 requires the LID Retention/Biofiltration, Site Design, Source Control, and Treatment Control BMPs specified in the Final WQMP to be incorporated into final design. Therefore, with implementation of BMPs, as specified in Mitigation Measure 4.8.3, operational impacts related to exceeding the capacity of, and providing additional sources of polluted runoff to, storm water drainage systems would be reduced to less than significant levels.

**Threshold 4.8.7:**        **Would the project place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map**

**and**

**Threshold 4.8.8:**        **Would the project place within a 100-year flood hazard area structures which would impede or redirect flood flows**

**No Impact.** According to FEMA FIRM No. 06059C0501J (December 3, 2009), the project site is located within Zone X, areas determined to be outside the 0.2 percent annual chance (500-year) floodplain. Because the project site is not located in a 100-year floodplain, the project would not place housing or structures within a 100-year flood hazard area. Therefore, there would be no impact related to placement of housing or structures within a 100-year flood hazard area and no mitigation is required.



**Threshold 4.8.9: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam**

**No Impact.** The project site is located approximately 4 miles south-southwest (downstream) of Sulphur Creek Reservoir (Laguna Niguel Lake). However, because the project site is located at a higher elevation on a hilltop, it is not anticipated that the project site would be inundated if the Sulphur Creek Dam were to fail. In addition, the project would not increase the risk of failure of the dam. Therefore, the project would not result in impacts related to exposure of people or structures to risk of loss, injury, or death involving flooding as a result of inundation from failure of a dam or levee. No mitigation is required.

**Threshold 4.8.10: Would the project expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of inundation by seiche, tsunami, or mudflow**

**Less than Significant Impact with Mitigation.** Seiching is a phenomenon that occurs when seismic groundshaking induces standing waves (seiches) inside water retention facilities such as reservoirs and water tanks. Such waves can cause retention structures to fail and flood downstream properties. According to the Public Safety Element of the City of Dana Point General Plan (June 27, 1995), since no major lakes or open water impoundments exist in the City of Dana Point, hazards related to inundation from seiche are considered low within the City. Therefore, the project would not result in impacts related to exposure of people or structures to risk of loss, injury, or death involving flooding as a result of inundation by seiche. No mitigation is required.

Tsunamis are generated wave trains generally caused by tectonic displacement of the sea floor associated with shallow earthquakes, sea floor landslides, rock falls, and exploding volcanic islands. The proposed project is not located in a tsunami inundation area. Therefore, the project would not result in impacts related to exposure of people or structures to risk of loss, injury, or death involving flooding as a result of inundation by tsunami. No mitigation is required.

Mudslides and mudflows are described as a shallower type of slope failure, usually affecting the upper soil mantle or weathered bedrock underlying natural slopes and triggered by surface or shallow subsurface saturation. A typical mudslide or mudflow is a failure of the upper 4 ft of saturated hillside material. As described in detail in Section 4.5, Geology and Soils, landslides have been documented within and adjacent to the project site. Therefore, there is a potential for mudslide or mudflow to occur on the undeveloped slopes of the project site. Practices such as establishing plants, avoiding concentration of water to the subsurface, discouraging rodent activity, and repairing erosion rills would help limit potential for failure of unimproved areas. Mitigation Measure 4.5.2 requires slope maintenance procedures to be conducted on the unimproved slopes during project operation. With implementation of Mitigation Measure 4.5.2, project impacts relating to mudflow would be less than significant.

**Threshold 4.8.14:** Would the project result in increased impervious surfaces and associated increased runoff

and

**Threshold 4.8.15:** Create a significant adverse environmental impact to drainage patterns due to changes in runoff flow rates or volumes

**Less than Significant Impact.** The project would increase impervious area by 1.25 ac, which would increase the runoff volume and velocity from the site. However, the underground detention system would reduce peak flow to below that of existing conditions. Total peak flow from the site would decrease from 26.1 cfs to 12.1 cfs for a 25-year storm and from 33.2 cfs to 14.2 cfs for a 100-year storm. Therefore, project impacts related to increased impervious surfaces and associated runoff or changes in runoff flow rates or volume would be less than significant, and no mitigation is required.

**Threshold 4.8.16:** Would the project be tributary to an already impaired water body, as listed on the Clean Water Act Section 303(d) list? If so, can it result in an increase in any pollutant for which the water body is already impaired.

**Less than Significant Impact with Mitigation.**

**Construction.** Salt Creek at the Pacific Ocean (outlet at Monarch Beach) is impaired for total coliform bacteria (relating to shellfish only). Pollutants of concern during construction include sanitary waste (fecal matter); therefore, the proposed project has a potential to contribute to the total coliform impairment. However, sanitary services during construction would likely be provided by portable toilet facilities, which transport waste off site for treatment and disposal. Disposal of waste from the portable toilets would be performed by contracted waste haulers who would handle, haul away, and dispose of portable toilet waste in accordance with applicable regulations. Therefore, construction of the proposed project would not contribute to the existing total coliform impairment. Therefore, potential construction impacts related to contribution to receiving water impairments would be less than significant.

**Operation.** As stated above, Salt Creek is impaired for total coliform bacteria relating to shellfish use only. The primary pollutant of concern is total coliform and bacteria because of the downstream impairment; therefore, the proposed project has a potential to contribute to the total coliform impairment.

The proposed Treatment BMPs include roof drain planter boxes, storm water planters, proprietary biofilters, biofiltration swales/depressed and an on-site detention system consisting of a pretreatment CDS Unit. The BMPs would target pollutants of concern from the project site, including bacteria, so that runoff from the site would not contribute to the existing total coliform impairment. Implementation of Mitigation Measure 4.8.3, which requires implementation of BMPs that target pollutants of concern in runoff from the project site, would reduce potential operational impacts related to contribution to receiving water impairments to less than significant levels.

**Threshold 4.8.17: Would the project be tributary to other environmentally sensitive areas? If so, can it exacerbate already existing sensitive conditions**

**Less than Significant Impact with Mitigation.**

**Construction.** Runoff from the project site is not tributary to State Water Quality Protection Areas of Special Biological Significance as defined by the SWRCB.<sup>1</sup> However, runoff from the project site is tributary to Salt Creek at the Pacific Ocean, which is designated as an Environmentally Sensitive Area in the City of Dana Point LIP. As discussed previously, the project would comply with the requirements of the Construction General Permit, as specified in Mitigation Measure 4.8.1. Under the Construction General Permit, the project would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP during construction activities to target pollutants of concern in runoff from the project site so they would not reach receiving waters or exacerbate existing sensitive conditions. In addition, as specified in Mitigation Measure 4.8.2, erosion control plans would be prepared annually during construction and submitted to the City Department of Public Works. The erosion control plans would detail the BMPs implemented during construction.

**Operation.** As stated above, runoff from the project site is tributary to Salt Creek/Pacific Ocean Shoreline, which is designated as an Environmentally Sensitive Area in the City of Dana Point LIP. As specified in Mitigation Measure 4.8.3, LID, site design, source control, and treatment control BMPs would be incorporated into the design of the proposed project to treat storm water runoff prior to discharge into the storm drain system. The BMPs would target pollutants of concern from the project site so they do not reach receiving waters or exacerbate existing sensitive conditions. Implementation of Mitigation Measure 4.8.3, which requires implementation of BMPs that target pollutants of concern in runoff from the project site, would reduce potential operational impacts related to Environmentally Sensitive Areas to less than significant levels.

**Threshold 4.8.21: Would the project impact aquatic, wetland, or riparian habitat**

**Less than Significant Impact with Mitigation.**

**Construction.** According to the *Updated General Biological Assessment* letter report (LSA Associates, Inc., March 2014), there is no aquatic, wetland, or riparian habitat on the project site. However, runoff from the project site has a potential to impact downstream aquatic, wetland, or riparian habitat. As previously described, during construction activities, excavated soil would be exposed and there would be an increased potential for soil erosion compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as paints, solvents, and fuels), and concrete-related waste may be spilled or leaked and have the potential to be transported via storm water runoff into downstream receiving waters. Mitigation Measure 4.8.1 requires preparation of a SWPPP to identify construction BMPs to be implemented in order to reduce impacts to water quality during construction, including impacts associated with soil

<sup>1</sup> State Water Resources Control Board. State Water Quality Protection Areas of Special Biological Significance. [http://www.waterboards.ca.gov/water\\_issues/programs/ocean/asbs\\_areas.shtml](http://www.waterboards.ca.gov/water_issues/programs/ocean/asbs_areas.shtml) (accessed April 17, 2014).

erosion, sedimentation, and spills. In addition, as specified in Mitigation Measure 4.8.2, erosion control plans would be prepared annually during construction to reduce erosion impacts during construction. As a result, construction activities would not impact aquatic, wetland, or riparian habitat through degradation of water quality. Implementation of Mitigation Measures 4.8.1 and 4.8.2, which require compliance with the requirements of the CGP (including preparation and implementation of a SWPPP, and preparation and implementation of erosion control plans), would reduce potential construction impacts to aquatic, wetland, or riparian habitat to less than significant levels.

**Operation.** Pollutants of concern during operation of the proposed on-site uses include nutrients, pesticides, suspended solids/sediments, trash and debris, oil and grease, bacteria/viruses/pathogens, heavy metals, and toxic organic compounds. As specified in Mitigation Measure 4.8.3, LID, Site Design, Source Control, and Treatment BMPs would be incorporated into the design of the proposed project to treat storm water runoff. In addition, the underground detention system would reduce peak flow to below that of existing conditions. As a result, operation of the proposed project would not impact aquatic, wetland, or riparian habitat through degradation of water quality or hydromodification. Implementation of Mitigation Measure 4.8.3, which requires implementation of BMPs that target pollutants of concern in runoff from the project site, would reduce potential operational impacts to aquatic, wetland, or riparian habitat to less than significant levels.

#### 4.8.7 Cumulative Impacts

As defined in the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probable future projects within the cumulative impact area for hydrology and water quality. The project site is currently developed as a church in the Salt Creek Watershed; therefore, the cumulative study area for hydrology and water quality is the Salt Creek Watershed. Each of the cumulative projects, individually and cumulatively, could potentially increase the volume of storm water runoff and contribute to pollutant loading in storm water runoff reaching both the City's storm drain system and Salt Creek, resulting in cumulative impacts to hydrology and surface water quality. However, as with the proposed project, each of the cumulative projects would also be subject to NPDES and MS4 Permit requirements for both construction and operation. Each project would be required to develop a SWPPP, an erosion control plan, a WQMP, and a hydrology report, and would be evaluated individually to determine appropriate BMPs and hydromodification controls to minimize water quality and hydrologic impacts. In addition, the City Department of Public Works reviews all development projects on a case-by-case basis to ensure that sufficient local and regional drainage capacity is available. Thus, the project's contribution to cumulative impacts to hydrology and water quality would be less than significant.

#### 4.8.8 Level of Significance Prior to Mitigation

Construction and operational impacts related to violation of water quality standards and WDRs, degradation of water quality, providing additional sources of polluted runoff to the storm water drainage system, flooding from mudflow or alterations of the existing drainage pattern, increase in

pollutant discharge, alteration of receiving water quality, adverse impacts on water and groundwater quality, degradation of beneficial uses, and impacts to aquatic, wetland, or riparian habitat would be potentially significant prior to mitigation. In addition, construction impacts related to on- or off-site erosion, siltation, and flooding as a result of alterations of the existing drainage pattern and operational impacts related to contribution to receiving water impairments would be potentially significant prior to mitigation.

Construction impacts related to contribution to receiving water impairments and operational impacts related to on- or off-site or downstream erosion and siltation, increased impervious surfaces and runoff, and changes in runoff flow rates and volumes would be less than significant, and no mitigation is required. Construction and operational impacts related to groundwater recharge would be less than significant. There would be no potential impacts related to flooding from failure of a dam or levee, seiche, or tsunami; related to placement of housing or structures within a 100-year floodplain; or to Environmentally Sensitive Areas. In addition, cumulative impacts to hydrology and water quality would be less than significant.

#### 4.8.9 Mitigation Measures

In addition to Mitigation Measure 4.5.2, in Section 4.5, Geology and Soils, the following measures are applicable to hydrology and water quality:

**Mitigation Measure 4.8.1:**     **Construction General Permit.** Prior to issuance of a grading permit, the Applicant shall obtain coverage under the *State Water Resources Control Board National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ, Permit No. CAS000002) (Construction General Permit [CGP]). The Applicant shall provide the Waste Discharge Identification Number to the City of Dana Point (City) Director of Public Works to demonstrate proof of coverage under the CGP. A Storm Water Pollution Prevention Plan (SWPPP) shall be prepared and implemented for the project in compliance with the requirements of the CGP. The SWPPP shall identify construction Best Management Practices (BMPs) to be implemented to ensure that the potential for soil erosion and sedimentation is minimized and to control the discharge of pollutants in storm water runoff as a result of construction activities. Erosion, Sediment, Wind, and Temporary Tracking Control BMPs that may be implemented include, but are not limited to, the following:

- Scheduling
- Preservation of existing vegetation
- Hydraulic mulch
- Hydroseeding
- Soil binders

- Straw mulch
- Geotextiles and mats
- Wood mulching
- Earth dikes and drainage swales
- Velocity dissipation devices
- Slope drains
- Streambank stabilization
- Compost blankets
- Soil preparation/roughening
- Non-vegetative stabilization
- Silt fences
- Sediment basins
- Sediment traps
- Check dams
- Fiber rolls
- Gravel bag berms
- Street sweeping and vacuuming
- Sandbag barriers
- Straw bale barriers
- Storm drain inlet protection
- Active treatment systems
- Temporary silt dikes
- Compose socks and berms
- Biofilter bags
- Stabilized construction entrances/exits
- Stabilized construction roadways
- Entrance/outlet tire washes

**Mitigation Measure 4.8.2:** **Erosion Control Plan.** In compliance with Chapter 8.01 of the City Municipal Code, during construction, the Applicant shall submit an erosion control plan annually by September 1 to the City Director of Public Works. The erosion control plans shall be prepared in accordance with Subarticle 13 of City Grading Manual. The Erosion Control Plan shall include, but not be limited to, the following:

- The name and 24 hour telephone number of the person responsible for performing emergency erosion control work.
- The signature of the civil engineer or other qualified individual who prepared the grading plan and who is responsible for inspection and monitoring of the erosion control work.
- All desilting and erosion protection facilities necessary to protect adjacent property from sediment deposition.
- The streets and drainage devices that shall be completed and paved by October 15 of each year.
- The placement of sandbags or gravel bags. Slope planting or other measures to control erosion from all slopes above and adjacent to roads open to the public. Gravel bags are preferred over sandbags.
- The plan shall indicate how access shall be provided to maintain desilting facilities during wet weather.

**Mitigation Measure 4.8.3:**

**Water Quality Management Plan.** Prior to issuance of grading permits, the Applicant shall submit a Final Water Quality Management Plan (WQMP) to the City Director of Public Works for review and approval. The WQMP shall be consistent with the City's Model Water Quality Management Plan (Model WQMP) and the project's preliminary WQMP, as conceptually approved on January 14, 2013. Project-specific Low-Impact Development, Retention/Biofiltration Site Design, Source Control, and Treatment Control BMPs contained in the Final WQMP shall be incorporated into final design and comply with the Model WQMP requirements in effect at the time of submittal of each phase. The BMPs shall be properly designed and maintained to target pollutants of concern and reduce runoff from the project site. The WQMP shall include an operations and maintenance (O&M) Plan for the prescribed BMPs to ensure their long-term performance. The O&M Plan shall include, but not be limited to, the following requirements:

- Operation and maintenance records shall be retained a minimum of 5 years.
- Training and educational activities and BMP operation and maintenance shall be documented to verify compliance with the O&M Plan.
- A WQMP Verification Form shall be submitted to the City of Dana Point annually by September 1.
- BMPs shall be inspected for standing water on a regular basis.

- Operation and inspection requirements for the Low-Impact Development, Retention/Biofiltration Site Design, Source Control, and Treatment Control BMPs shall be included.

#### **4.8.10 Level of Significance after Mitigation**

With implementation of Mitigation Measures 4.5.2 and 4.8.1 through 4.8.3, all identified potentially significant impacts related to hydrology and water quality would be reduced to less than significant levels.

#### **4.8.11 Significant Unavoidable Adverse Impacts**

No significant unavoidable adverse impacts related to hydrology and water quality were identified.



## **4.9 LAND USE AND PLANNING**

### **4.9.1 Introduction**

This section describes the existing land uses on the South Shores Church project (proposed project) site and in its vicinity, and evaluates the compatibility of the proposed project with surrounding land uses and relevant policy and planning documents. The consistency analysis presented in this section was prepared in compliance with *California Environmental Quality Act Guidelines (State CEQA Guidelines)* Section 15125(d). Information presented in this section is based on information provided in the City of Dana Point (City) Local Coastal Program (LCP), the City's General Plan (1991),<sup>1</sup> the City's General Plan Land Use Map (2006), the City's Zoning Code (2008), the City's Zoning Map (2012), and the Orange County (County) Natural Community Conservation Plan and Habitat Conservation Plan (NCCP/HCP) (1996). In addition, per *State CEQA Guidelines* Section 15125(d), this Draft Environmental Impact Report (EIR) evaluates the proposed project's consistency with other applicable planning documents as they relate to specific topical sections within Chapter 4.0, Existing Environmental Setting, Environmental Analysis, Impacts, and Mitigation Measures.

### **4.9.2 Methodology**

The impact analysis presented in this Land Use and Planning section evaluates potential physical impacts of the proposed project on land use compatibility and considers whether the proposed project would result in potential inconsistencies with relevant plans or policies contained in applicable planning documents adopted by the City and other agencies. Neither CEQA nor the *State CEQA Guidelines* set forth standards for determining whether or not a project is consistent with an applicable plan; rather, the final determination that a project is consistent or inconsistent with an applicable plan is made by the Lead Agency when it acts on the project. The analysis in this Draft EIR discusses the findings of policy review and is meant to provide a guide for decision-makers during policy interpretation.

A project's inconsistency with a plan or policy is only considered significant if such inconsistency would result in a significant physical environmental impact (per *State CEQA Guidelines* Section 15382). This Draft EIR section determines whether or not the proposed project would conflict with any adopted land use policies or programs and whether mitigation is feasible. Under this approach, a policy or program conflict is not in and of itself considered a significant environmental impact. An inconsistency between the proposed project and an applicable plan is a legal determination that may or may not indicate the likelihood of an environmental impact. In some cases, an inconsistency may be evidence that an underlying physical impact is significant and adverse.

### **4.9.3 Existing Environmental Setting**

The project site is located at 32712 Crown Valley Parkway, in the City of Dana Point, which itself, is located in the southwestern portion of the County. As illustrated in Figure 4.9.1, Regional Project Location, the project site is adjacent to the intersection of Crown Valley Parkway and Sea Island Drive. The project site is rectangular in shape and consists of a single parcel (Assessor's Parcel

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<sup>1</sup> The City's General Plan was originally adopted in 1991; however, various elements have been amended since its adoption.

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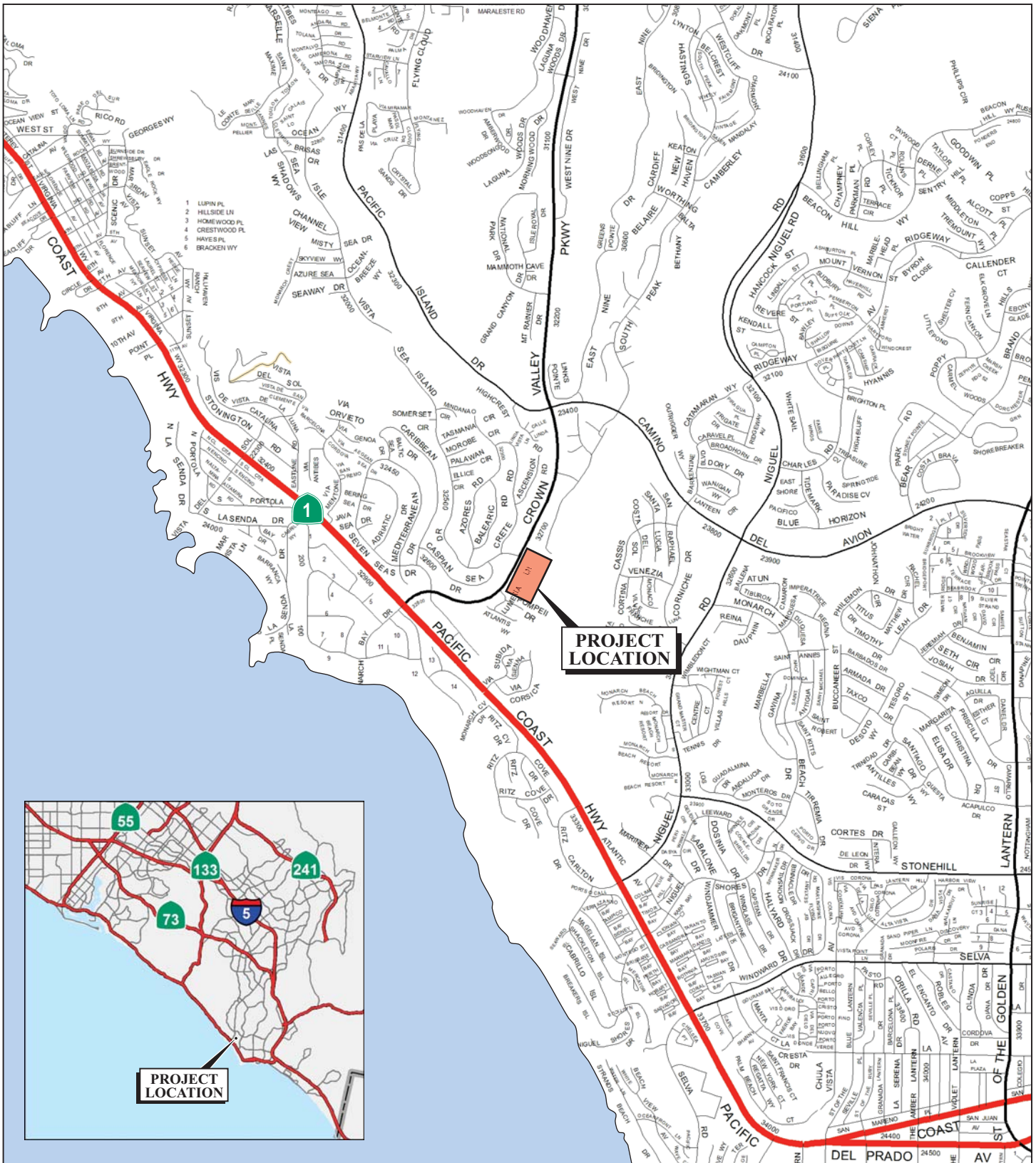
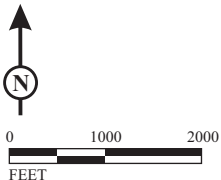


FIGURE 4.9.1

LSA



SOURCE: The Thomas Guide

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South Shores Church Master Plan  
Regional Project Location

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Number [APN] 670-181-02) totaling approximately 6 acres (ac). The project site is bounded on the west by Crown Valley Parkway; open space and the Monarch Beach Golf Links golf course on the east; multi-family residential apartments to the north; and the Monarch Bay Villas to the south.

As illustrated in Figure 4.9.2, Existing Project Site, the project site is developed with 42,545 square feet (sf) of South Shores Church facilities, including a Sanctuary, Chapel, Administration and Fellowship Hall, Preschool, and an at-grade parking lot. Topography on the project site has an elevation difference of approximately 25 to 70 feet (ft).

As illustrated in Figure 4.9.3, Existing Land Uses, the project site is surrounded by vacant land, as well as a variety of single- and multi-family residential, commercial, and recreational land uses. Specifically, land uses surrounding the project site include the Monarch Bay Villas along the southern border of the project site and the Monarch Bay Plaza Shopping Center located beyond; a vacant hillside and the paved Salt Creek recreational trail to the east, with the Monarch Beach Golf Links golf course beyond; the Monarch Coast Apartments to the north; and Monarch Bay Terrace single-family residential uses to the west across Crown Valley Parkway.

#### **4.9.4 Regulatory Setting**

**Federal Policies and Regulations.** There are no federal land use policies or regulations that are applicable to the proposed project with respect to land use.

**State Policies and Regulations.** There are no State land use policies or regulations that are applicable to the proposed project with respect to land use.

**Local and Regional Policies and Regulations.** The project site is covered by several planning documents and programs that have varying degrees of regulation over use of the project site. The City has preeminent decision-making authority regarding allowable land uses on the project site. The following adopted planning documents apply to the project site: the City's General Plan, the City's Zoning Code, the City's LCP, and the Orange County NCCP/HCP.

In addition, the Southern California Association of Governments (SCAG) has adopted the Regional Comprehensive Plan, which serves as a regional planning policy document. Applicable local and regional land use policies and guidelines from each of these documents are listed below.

##### **Orange County Natural Community Conservation Plan and Habitat Conservation Plan.**

The City of Dana Point, including the project site, is located within the Central and Coastal Subregion of the Orange County NCCP/HCP. The Central and Coastal Subregion encompasses approximately 208,000 ac of developed, agricultural, and undeveloped natural lands. The majority of land within this subregion has already been developed with urban land uses. Habitats of concern subject to potential development pressure include, but are not limited to, coastal sage scrub and other sage, chaparral, woodland and forest, riparian, wetlands, and native annual grasses. As part of the NCCP/HCP, projects that would impact sensitive habitat areas, as

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Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

L S A

LEGEND


 Property Line (6.0 ac)

FIGURE 4.9.2



0 30 60  
FEET

SOURCE: AirPhoto (2008)  
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FIGURE 4.9.3

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LEGEND

Property Line (6.0 ac)

Existing Land Use

Single Family Residential

Multi-Family Residential

Hotels and Motels

General Office Use

Retail Stores and Commercial Services

Heavy Industrial

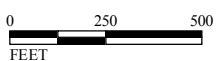
Community Facility

Local Parks and Recreation

Golf Courses

Parks and Recreation

Vacant



SOURCE: Microsoft (5/2010); SCAG (2008)

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South Shores Church Master Plan

Existing Land Uses

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designated by the NCCP/HCP, are required to pay NCCP/HCP in-lieu fees to mitigate impacts to sensitive biological resources.

The project site is located within the jurisdiction of the Central and Coastal Orange County NCCP/HCP. Specifically, the project site is located within an area identified as “developed” and is located well outside the habitat reserve.

**Southern California Association of Governments Regional Comprehensive Plan.** Regional planning is conducted for a six-county metropolitan region composed of Orange, Los Angeles, Ventura, Riverside, San Bernardino, and Imperial Counties. SCAG is the federally recognized Metropolitan Planning Organization (MPO) for these six counties. As the designated MPO, SCAG is mandated by the federal government to research and prepare plans for transportation, growth management, hazardous waste management, and air quality.

The Regional Comprehensive Plan (RCP) assembles all of the planning and policy work produced by SCAG into a usable reference document for local planners, business people, and other individuals whose work affects the future built environment in Southern California. The SCAG RCP includes a package of policies related to growth and development that seeks to coordinate infrastructure with projected population and housing growth. In general, SCAG policies encourage job and housing opportunities to be balanced at the county or subregional level (Regional Statistical Area). SCAG policies also encourage job growth to be concentrated near transit services, transit nodes, existing freeways, high-occupancy vehicle (HOV) lanes, and toll roads.

**City of Dana Point Local Coastal Program.** The California Coastal Act (CCA) of 1976 requires all local governments located within the Coastal Zone to adopt an LCP. The LCP is used by jurisdictions to regulate local land uses and development in a manner that is consistent with the goals of the CCA. Specifically, LCPs identify the location, type, densities, and other land use policies for future development within the Coastal Zone of a jurisdiction.

In 1981, the County of Orange approved the LCP for Dana Point, known as the South Coast Planning Unit LCP, and in 1985, the County’s LCP was certified by the California Coastal Commission (CCC). The City of Dana Point was incorporated in 1989, and in 1991, the CCC approved an LCP Amendment to transfer LCP discretionary authority to the City. The City’s LCP consists of portions of the City’s General Plan, Zoning Ordinance, and Zoning Map. Required components of the LCP are distributed throughout several General Plan Elements.

According to the City’s LCP, the project site is located within the Coastal Zone boundaries and is under the land use planning and regulatory jurisdiction of the City. Therefore, the City of Dana Point has the authority to approve the proposed project and issue the Coastal Development Permits (CDPs) if the project is found to be consistent with the City’s LCP. Because the site is not within the CCC appeal jurisdiction, discretionary actions made by the City are not appealable to the CCC.

**City of Dana Point General Plan.** The City's General Plan contains goals, policies, and programs that are intended to guide future land use and development decisions. According to Section 65302(a) of the California Government Code, General Plans are required to contain at least seven elements: Land Use, Transportation, Housing, Conservation, Noise, Open Space, and Safety. The City's General Plan contains these required elements, as well as three optional elements: Public Facilities/Growth Management, Economic Development, and Urban Design.

**Land Use Element.** At the heart of the General Plan is the Land Use Element (2010). This element presents the City's goals and policies directing the long-term growth, development, and revitalization of the City. Table 4.9.B (provided later in this section) includes a list of applicable goals, policies, and objectives from the City's General Plan. The Land Use Element serves as a guide to the allocation of land use in the City and has major impacts on key issues and subject areas examined in the other elements of the General Plan. The Land Use Map, which illustrates land uses within the City, is a primary feature of the Land Use Element. Land use designations indicate the type and nature of development that is allowed in a given location.

As shown on Figure 4.9.4, General Plan Land Use Designations, the project site is designated Community Facilities (CF) on the City's General Plan Land Use Map. The CF designation allows for a range of public and private uses, including but not limited to schools, churches, child care centers, transportation facilities, government offices and facilities, public utilities, libraries, museums, art galleries, community theaters, hospitals and recreational activities. As stated in the City's General Plan Land Use Element the standard intensity of development for the CF designation is a Floor Area Ratio (FAR)<sup>1</sup> of 0.4:1 and the maximum intensity of development is a FAR of 1:1.

**City of Dana Point Municipal Code.** Zoning is the division of a city into districts and the application of development regulations specific to each district. The City of Dana Point Zoning Code, Title 9 of the Municipal Code, includes regulations concerning where and under what conditions a church may operate in the City. It also establishes zone-specific height limits, setback requirements, parking ratios, and other development standards.

It is the intent of the City that the General Plan Land Use Element and the Zoning Code be consistent in order to ensure that long-term goals and objectives are implemented through land use regulations and other tools. The Zoning Code is a primary tool for implementing the City's General Plan. As shown in Figure 4.9.5, Zoning Designations, the proposed project site is in the CF zoning district. The CF district allows for public, quasi-public, and private community facilities, such as civic buildings, schools, churches, hospitals, cultural, recreational facilities and sanitary sewer facilities, and other public facilities. Although church uses are allowed within the CF zoning designation, these uses are considered conditional and are subject to the following criterion listed in Section 9.07, Special Use Standards, of the City's Zoning Code:

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<sup>1</sup> Floor area ratio is the ratio of a building's total (gross) floor area to the size of the piece of land on which it is built.



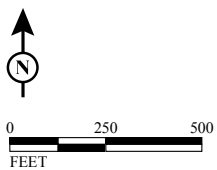
Source: Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community

LSA

FIGURE 4.9.4

LEGEND

- Property Line (6.0 ac)
- General Plan Land Use
- Res 0-3.5 - Residential 0-3.5 DU/AC
- Res 3.5-7 - Residential 3.5-7 DU/AC
- Res 7-14 - Residential 7-14 DU/AC
- Res 14-22 - Residential 14-22 DU/AC
- CC - Community Commercial
- P/A - Professional Administration
- CF - Community Facility
- R/OS - Recreation/Open Space



South Shores Church Master Plan

General Plan Land Use Designations

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