Appendix E

Biological Reconnaissance Study
prepared by Chambers Group, Inc.

FINAL RESULTS OF THE BIOLOGICAL RECONNAISSANCE SURVEY AT THE 2300 BONITA CANYON PROJECT SITE ORANGE COUNTY, CA

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SECTION 1 - SUMMARY

Chambers Group, Inc. (Chambers Group) was retained by the City of Newport Beach to conduct a biological survey on an approximately 0.06-acre site located in the City of Newport Beach, Orange County, California. A general reconnaissance-level survey was conducted to identify the vegetation communities, to document the existing biological resources, and to assess the habitats on the site for their potential to support sensitive plant and wildlife species. The following report summarizes the results of the reconnaissance survey.

SECTION 2 - INTRODUCTION

The project site was located at 2300 Bonita Canyon Drive, in the City of Newport Beach, Orange County, California (**Figure 1**) on the Tustin U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle within Township 6 South, Range 9 West (**Figure 2**). Surrounding land uses included a church and residential development to the west, Bonita Canyon Road followed by residential development to the south, ornamental landscaping followed by open space and Highway 73 to the north, and open space closely abutting Bonita Canyon Road to the east. The site was approximately 3,000 feet north of the San Joaquin Reservoir, approximately 1.5 miles southeast of the Upper Newport Back Bay, and approximately 5 miles inland from the Pacific Ocean. The elevation at the site was approximately 168 feet above mean sea level (amsl).

The applicant proposes to build a church structure on private property located on a terrace covered with ornamental vegetation. The Newport Beach Fire Department has issued a fuel modification requirement for this project in the open space abutting the east side of the proposed church structure. A fuel modification buffer will be required between the proposed church structure and the property boundary in which all combustible plant species will need to be removed, and fire-resistive plants will need to be planted within a portion of the buffer. The proposed church structure site and proposed fuel modification buffer are collectively referred to as the “project area” in this report. The open space located to the northeast and east of the project area is classified as the Bonita Canyon Creek Watershed Environmental Study Area (ESA) by the City of Newport Beach General Plan (See **Appendix E**). The proposed fuel modification buffer will extend into this ESA. The Natural Resources Element of the City of Newport Beach General Plan provides regulations for development near ESAs. For example, Chapter 11, page 27, policy S6.3 of "New Development Design" urges developers to "Site and design new development to avoid the need to extend fuel modification zones into sensitive habitats." The applicant shall consult the City of Newport Beach Planning Department for guidance concerning the General Plan. The project area is contained within the property boundary and lies outside of the County of Orange Natural Communities Conservation Plan (NCCP) jurisdiction (personal communication, City of Newport Beach Planning Department). See **Appendix C** for a site plan that includes the area proposed for fuel modification.

Figure 1 – Project Vicinity Map

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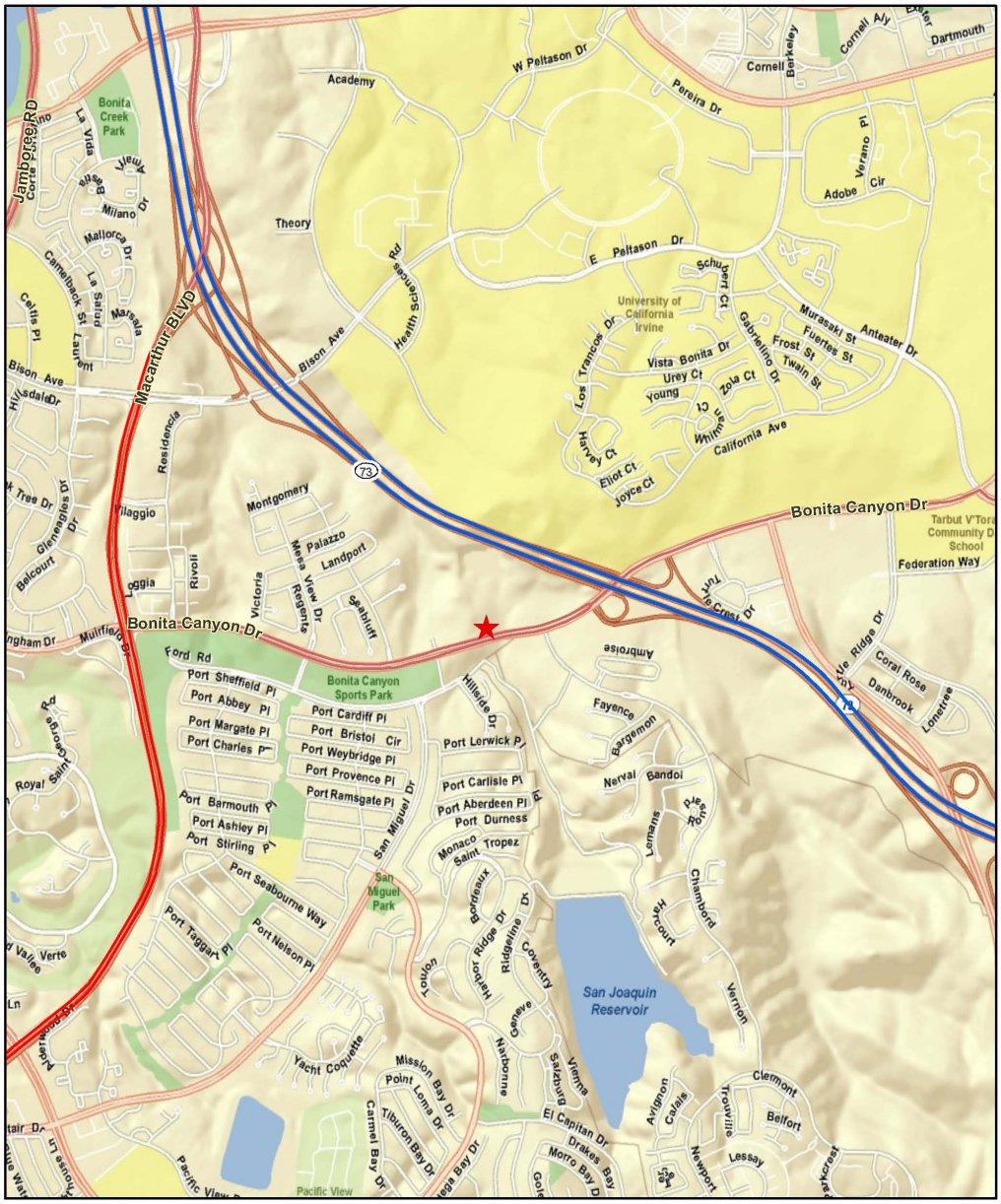

Figure 2 – Project Location Map

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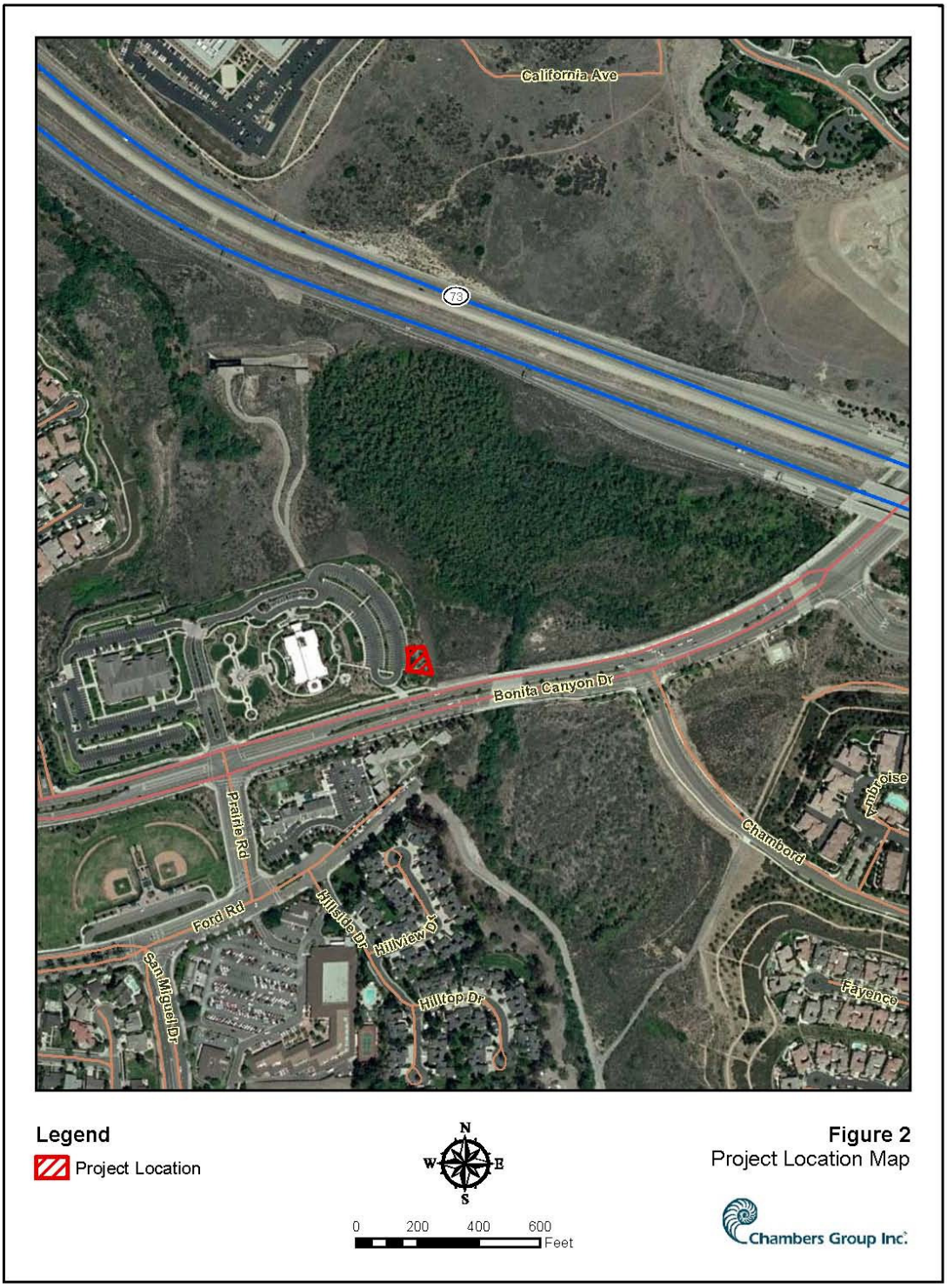

USGS 7.5' Tustin Quad
Township 6S, Range 9W

SECTION 3 - METHODOLOGY

3.1 GENERAL

Prior to performing the field survey, existing documentation relevant to the project site was reviewed. The most recent records of the California Natural Diversity Database (CNDDB 2009) and the California Native Plant Society's Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPSEI 2009) were reviewed for the Tustin, Newport Beach, and Laguna Beach California USGS 7.5-minute quadrangles. These databases contain records of reported occurrences of federal- and/or state-listed endangered, threatened, or proposed endangered and threatened species, California Species of Special Concern (SSC), or otherwise sensitive species and habitats that may occur within or in the immediate vicinity of the project site.

3.2 SOILS

Prior to conducting the surveys, soil maps for Orange County were referenced to determine the types of soil found in the project area (USDA 2009).

3.3 VEGETATION

A general vegetation survey was conducted by foot in the portion of the project area to the west of the chain-link fence, and by binoculars to the east of the chain-link fence. Observations were recorded on standardized field data sheets. Plant communities in the project area were identified and qualitatively described. Biological resources in the project area were inventoried and the potential for the presence of sensitive plant species and sensitive habitats was assessed, focusing on those species listed as threatened or endangered by the state and federal agencies. Notes were made on the general vegetation types, species observed, and the potential for sensitive plant habitats to occur on the site.

Plant communities and associations were determined in accordance with the categories set forth in Keeler-Wolf (1995). Plants of uncertain identity were collected and subsequently identified from keys, descriptions, and illustrations in Hickman (1993) and Munz (1974). Plant nomenclature follows that of *The Jepson Manual, Higher Plants of California* (Hickman 1993).

3.4 WILDLIFE

A reconnaissance-level field survey was performed throughout the project area to characterize the distribution and relative abundance of wildlife, wildlife resources, and wildlife habitats. The survey was conducted by foot in the portion of the project area to the west of the chain-link fence, and by binoculars in the portion of the project area to the east of the chain-link fence. All observations of wildlife and wildlife sign (including tracks, scat, carcasses, burrows, nests, excavations, and vocalizations) were recorded on standardized field data sheets. Habitat types were investigated for the potential to support sensitive species of wildlife.

3.5 SENSITIVE SPECIES

A sensitive species is considered a potential inhabitant of the project site if its known geographical distribution encompasses part of the project site or if its distribution is near the site and if general habitat requirements or environmental conditions (e.g. soil type, elevation, vegetation assemblage, etc.) required for the species are present at the time of the survey. The potential for each sensitive species to occur in

the project area was assessed during the field survey and literature review. Potential for occurrence (PFO) is based on the criteria listed in **Table 1**.

Table 1 – Criteria for Evaluating Potential for Occurrence of Sensitive Species

PFO	CRITERIA
Absent:	Species was not observed during focused surveys conducted at an appropriate time for identification of the species or species is restricted to habitats or environmental conditions that do not occur within the project site.
Low:	Historical records for this species do not exist within the immediate vicinity (approximately 5 miles) of the project site and/or habitats or environmental conditions needed to support the species are of poor quality.
Moderate:	Either a historical record exists of the species within the immediate vicinity of the project site (approximately 5 miles) and marginal habitat exists on the site, or the habitat requirements or environmental conditions associated with the species occur within the project site, but no historical records exist within the vicinity.
High:	Both a historical record exists of the species within the project site or its immediate vicinity (approximately 5 miles), and the habitat requirements or environmental conditions associated with the species occur within the project site.
Present:	Species was observed or detected within the project site at the time of the survey.

Historical information on the location of some sensitive species is not available; therefore, for survey purposes, the presence of environmental conditions or habitats associated with species occurrence requirements may be considered sufficient to give a species a potential for occurrence. Sensitive species and their potential for occurrence in the project area are discussed in **Section 4** of this document.

3.6 UNITED STATES ARMY CORPS OF ENGINEERS (USACE) AND CALIFORNIA DEPARTMENT OF FISH AND GAME (CDFG) PRELIMINARY JURISDICTIONAL ASSESSMENT

Prior to beginning the field preliminary delineation, a 50 feet-to-the-inch scaled topographic map, scaled aerial photograph, and the Tustin, Newport Beach, and Laguna Beach 7.5-minute USGS topographic quadrangle maps were examined to determine the locations of potential areas of USACE/CDFG jurisdiction. Chambers Group biologists examined the project site to identify potential Regional Water Quality Control Board (RWQCB), and USACE jurisdiction pursuant to Section 401, 402, and 404 of the Clean Water Act and CDFG jurisdiction pursuant to Section 1600-1607 of the State of California Fish and Game Code. Suspected RWQCB/USACE/CDFG jurisdictional areas were field checked for the presence of riparian vegetation, definable channels, and Ordinary High Water Marks (OHWMs). The lateral extent of a jurisdictional drainage can be measured in several ways depending on the particular situation. The outer edge of riparian vegetation is used as the line of demarcation between riparian and upland habitats and is therefore an identifiable boundary of the lateral extent of a jurisdictional drainage. On smaller streams or dry washes with little or no riparian habitat, the bank may be used to mark the lateral extent of the jurisdictional drainage. Surveys were not conducted on foot within the drainage areas of the project site due to access constraints. Binoculars were used to identify drainage features.

3.7 WILDLIFE MOVEMENT CORRIDORS

The project area was generally assessed for its function as a potential wildlife movement corridor. The concept of habitat corridors addresses the linkage between large blocks of habitat that allow the safe movement of mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include such areas as greenbelts, refuge systems, underpasses, and biogeographic landbridges, for example. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix that connects two or more large blocks of habitat. Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these resources for wildlife. In addition, wildlife movement between habitat areas provides for genetic exchange between wildlife species populations, thereby maintaining genetic variability and adaptability to maximize the success of wildlife responses to changing environmental conditions. This is especially critical for small populations subject to loss of variability from genetic drift and effects of inbreeding. The nature of corridor use and wildlife movement patterns varies greatly among species.

Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors allowing movement also offer wildlife unobstructed terrain to forage and for the dispersal of young individuals. Movement corridors are particularly important to larger terrestrial species, such as mountain lions (*Felis concolor*), coyotes (*Canis latrans*), bobcats (*Lynx rufus*), and mule deer (*Odocoileus hemionus*) due to the protective cover afforded by dense vegetation. No surveys were conducted on foot within potential corridor areas due to access constraints. Binoculars were used to help identify wildlife corridor areas.

SECTION 4 - RESULTS

The reconnaissance-level survey was conducted on May 12, 2009 by Chambers Group biologists Paul Morrissey and Laurie Gorman. Vegetation communities on the property were identified and qualitatively described. Biological resources on the property were inventoried and the potential for occurrence of sensitive plant and wildlife species was assessed, focusing on those species listed as threatened or endangered by CDFG and United States Fish and Wildlife Service (USFWS). In addition, a preliminary jurisdictional waters assessment was conducted within the property boundaries. Notes were made on general vegetation types, species observed, and sensitive habitats existing on the property.

4.1 SOILS

One soil type occurred within the 2300 Bonita Canyon Drive project area. This soil type is within the Alo Clay soil series (USDA 2009). The following describes this soil type:

Alo clay, 15 to 30 percent slopes, is a well-drained soil found on hillsides. The clay is residuum weathered from sedimentary rock. The typical profile of this soil type is clay to a depth of 22 inches followed by weathered paralithic, moderately cemented bedrock. The depth to water table is typically more than 80 inches. Risk for erosion is high for uncoated steel and low for cement. This soil is in Hydrologic Soil Group D, which is made up of soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. Group D consists of soils that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission (USDA 2009).

4.2 VEGETATION

The project area west of the chain-link fence was surveyed on foot and was densely covered by ornamental, non-native vegetation; therefore, a species list was not prepared. The entire area proposed for construction was located within the southeast corner of the Church property, and was situated within the ornamental landscaped area between a chain-linked fence and the Church parking lot. A portion of the project area between the existing chain-link fence and the property boundary, which is designated for fuel modification, lies within the Bonita Canyon Creek Watershed Environmental Study Area (ESA) (personal communication, City of Newport Beach Planning Department). The ESA was composed of native vegetation communities described below.

The Newport Beach Fire Department has issued a fuel modification requirement for the portion of the project area that lies between the proposed church structure and the property boundary to the east, in which all combustible plant species will need to be removed. Fire-resistive plants will need to be planted in a portion of the buffer. Vegetation communities existing in the project area are described in this report.

Vegetation Communities

Vegetation communities and developed areas within and adjacent-to the project area are shown on the vegetation communities map (**Figure 3**). Representative site photographs are included as **Appendix B**. The following sections summarize the principal characteristics of the vegetation communities and general locations of these communities within and adjacent-to the project area.

Figure 3 – Vegetation Communities and Land Use Cover

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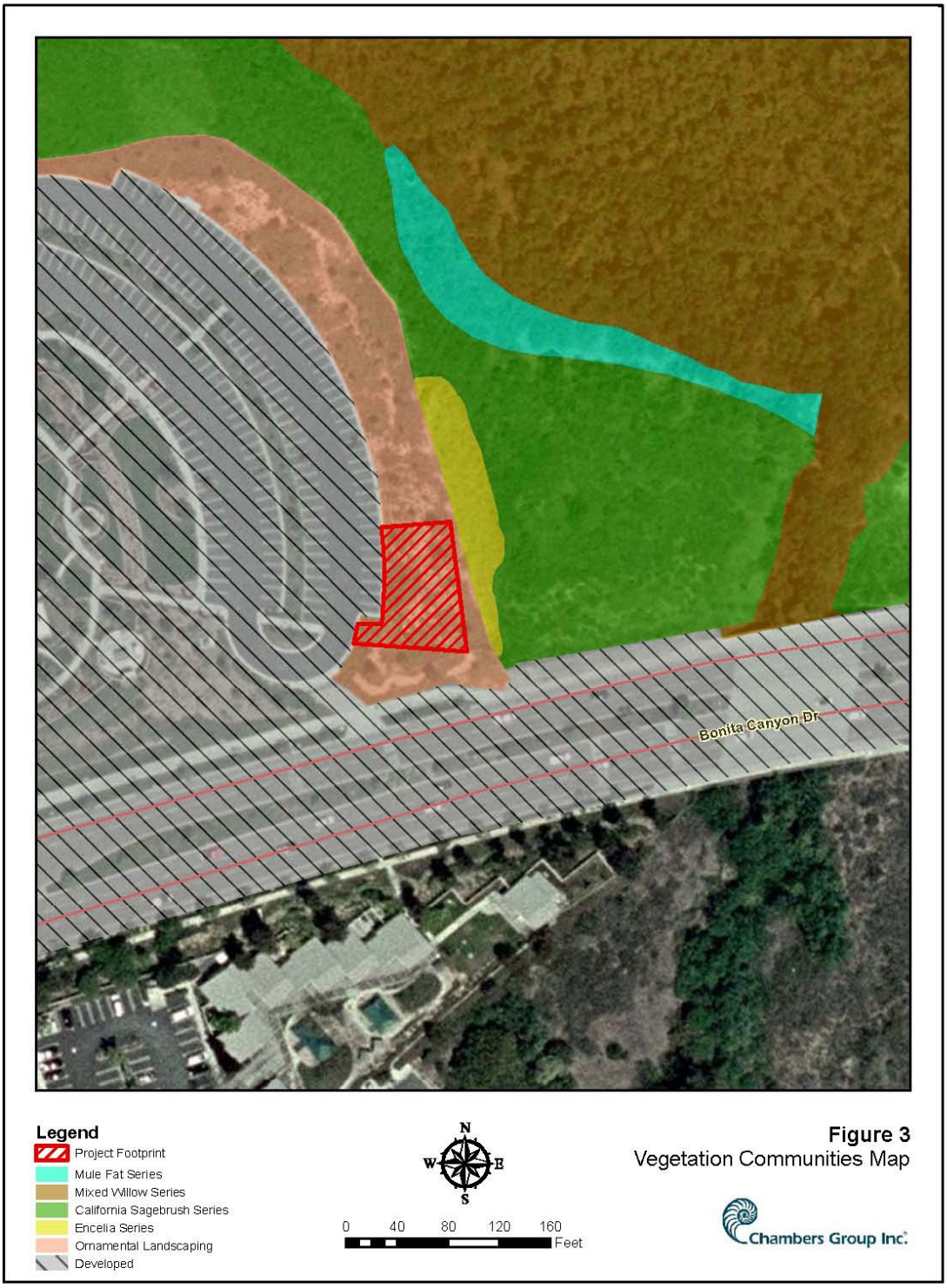

Vegetation Communities within the Proposed Church Structure Site, West of the Chain-link Fence

4.2.1.1 Ornamental Landscaping

Ornamental Landscaping includes areas where the vegetation is dominated by non-native horticultural plants (Gray and Bramlet 1992). Typically, the species composition consists of introduced trees, shrubs, flowers, and turf grass.

Ornamental Landscaping covered virtually the entirety of the project area west of the chain-link fence (approximately 0.06 acre) and areas immediately to the north and south. There were a few small breaks in the vegetation where wood chips have been laid down to suppress plant growth. There was no ornamental landscaping east of the chain-link fence.

Vegetation Communities Adjacent to Proposed Church Structure Site/East of the Chain-link Fence, Including the Proposed Fuel Modification Buffer

4.2.1.2 Developed

Developed areas were areas that have been altered by humans and now display man-made structures such as houses, paved roads, buildings, parks, and other maintained areas.

Developed areas were present to the south (Bonita Canyon Drive) and to the west (parking lot and church). There was also a chain-link fence running along the east edge of the terrace, dividing the landscaped portion of the project area to the west from the open space portion of the project area to the east.

4.2.1.3 California Encelia Series

California Encelia Series as described in Sawyer and Keeler-Wolf (1995) consists of California encelia (*Encelia californica*) as the sole or dominant shrub. This community typically occupies steep, south-facing slopes with colluvial-derived soils. Other species that may be found in California Encelia Series include: black sage (*Salvia mellifera*), bladderpod (*Isomeris arborea*), California sagebrush (*Artemisia californica*), chaparral yucca (*Yucca whipplei*), coyote brush (*Baccharis pilularis*), deerweed (*Lotus scoparius*), wishbone bush (*Mirabilis laevis*), and emergent lemonade berry (*Rhus integrifolia*) or Mexican elderberry (*Sambucus Mexicana*).

The California Encelia Series community was present in the project area within the ESA, approximately 10 feet to the east of the chain-link fence. Plant species found in this area typical of California Encelia series include: California encelia, California sagebrush, and a small amount of black mustard (*Brassica nigra*), a non-native species, was also present. The California Encelia Series community was present only within the project area proposed for fuel modification.

4.2.1.4 California Sagebrush Series

California Sagebrush Series as described in Sawyer and Keeler-Wolf (1995) consists of California sagebrush as the sole or dominant shrub. This community typically occupies steep, south-facing slopes in alluvial or colluvial-derived, shallow soils. Other species that may be found in California Sagebrush Series include: black sage, brittlebush (*Encelia farinosa*), California encelia, chamise (*Adenostoma fasciculatum*), chaparral yucca, goldenbush (*Ericameria* sp.), coyote brush, deerweed, poison-oak (*Toxicodendron diversilobum*), purple sage (*Salvia leucophylla*), white sage (*Salvia apiana*), and emergent lemonade berry or Mexican elderberry.

The California Sagebrush Series community was present in the project area within the ESA, approximately 30 feet to the east of the chain-link fence, on a south-facing hillside. Plant species found

on this hillside typical of California Sagebrush series include: California sagebrush, coyote brush, black sage, and poison-oak. The California Encelia Series community did not occur within the area proposed for construction; however, this community was present within the project area proposed for fuel modification.

4.2.1.5 Mixed Willow Series

Mixed Willow Series as described in Sawyer and Keeler-Wolf (1995) consists of more than one willow species (*Salix spp.*) dominant in the shrub or tree canopy. This community typically occupies floodplains; low gradient depositions along rivers and streams. This habitat is seasonally flooded and saturated with fresh water. Species that may be found in Mixed Willow Series include: arroyo willow (*Salix lasiolepis)*, big-leaf maple (*Acer macrophyllum*), black cottonwood (*Populus balsamifera ssp. trichocarpa*), black willow (*Salix gooddingii*), California sycamore (*Platanus racemosa*), Fremont cottonwood (*Populus fremontii*), narrowleaf willow (*Salix exigua*), red alder (*Alnus rubra*), red willow (*Salix laevigata*), and white alder (*Alnus rhombifolia*).

The Mixed Willow Series community was present in the ESA, approximately 300 feet to the northeast of the proposed church structure, in the vicinity of the proposed fuel modification buffer. Plant species found in the ESA typical of this vegetation community include: black willow and arroyo willow. The Mixed Willow Series community did not appear to occur within the portion of the project area proposed for fuel modification; however, this could not be determined because the impact area designated by the Newport Beach Fire Department for fuel modification was not defined at the time of the biological survey.

4.2.1.6 Mule Fat Series

Mule Fat Series as described in Sawyer and Keeler-Wolf (1995) consists of mule fat (*Baccharis salicifolia*) as the sole or dominant shrub. This community typically occupies habitats seasonally flooded and saturated by fresh water within canyon bottoms, irrigated ditches, and stream channels. Other species that may be found in Mule Fat Series include: arroyo willow and narrowleaf willow.

The Mule Fat Series community was present in the ESA, approximately 150 feet to the northeast of the proposed church structure, in the vicinity of the proposed fuel modification buffer. Plant species found in the ESA typical of this vegetation community include: mule fat and arroyo willow. The Mule Fat Series community did not appear to occur within the area proposed for fuel modification; however, this could not be determined because the impact area designated by the Newport Beach Fire Department for fuel modification was not defined at the time of the biological survey.

Sensitive Plants

The California Natural Diversity Database (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) literature reviews resulted in a list of 28 sensitive plant species with a potential to occur on or within the vicinity of the project area. Four of these 28 sensitive plant species are federal- and/or state-listed as endangered or threatened and all 28 are California Native Plant Society (CNPS)-sensitive. Table 2 explains CNPS designations.

Table 2 – California Native Plant Society Designations

CNPS Designation[1]	Description
List 1A:	Plants presumed extinct in California.
List 1B:	Plants rare and endangered in California and throughout their range.
List 2:	Plants rare, threatened or endangered in California but more common elsewhere in their range.
List 3:	Plants about which we need more information; a review list.
List 4:	Plants of limited distribution; a watch list.
Extension 0.1:	Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
Extension 0.2:	Fairly endangered in California (20-80% occurrences threatened)
Extension 0.3:	Not very endangered in California (<20% of occurrences threatened)

[1] **According to CNPS (Skinner and Pavlik 1994), plants on List 1B and 2 meet definition for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.**

The project area was analyzed for its potential to support the 28 sensitive species that resulted from the literature search. Eleven of these species were determined to be absent from the project area due to a lack of suitable habitat:

- Parish's brittlescale (*Atriplex parishii*); Fed: none; State: none; CNPS: List 1B.1
- Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*); Fed: none; State: none; CNPS: List 1B.1
- southern tarplant (*Centromadia parryi* ssp. *australis*); Fed: none; State: none; CNPS: List 1B.1
- summer holly (*Comarostaphylis diversifolia ssp. diversifolia*); Fed: none; State: none; CNPS: List 1B.2
- salt marsh bird's-beak (*Cordylanthus maritimus ssp. maritimus*); Fed: **END**; State: **END**; CNPS: List 1B.2
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*); Fed: none; State: none; CNPS: List 1A
- Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*); Fed: none; State: none; CNPS: List 1B.1
- mud nama (*Nama stenocarpum*); Fed: none; State: none; CNPS: List 2.2
- Gambel's water cress (*Nasturtium gambelii*); Fed: **END**; State: **THR**; CNPS: List 1B.1
- coast woolly-heads (*Nemacaulis denudata* var. *denudate*); Fed: none; State: none; CNPS: List 1B.2
- estuary seablite (*Suaeda esteroa*); Fed: none; State: none; CNPS: List 1B.2

The remaining 17 sensitive species could potentially occur in the portion of the project area proposed for fuel modification that extends east of the chain-link fence and into the ESA. Two of these 17 sensitive species are state- or federal-listed as threatened or endangered: Laguna Beach dudleya (*Dudleya stolonifera*), federal- and state-listed threatened species, and big-leaved crownbeard (*Verbesina dissita*), also a federal- and state-listed threatened species. A biological monitor for fuel modification is recommended in Section 5.1 of this report. The following is a list of the 17 sensitive species potentially occurring in the proposed fuel modification buffer of the project area, east of the chain-link fence:

- chaparral sand-verbena (*Abronia villosa var. aurita*); Fed: none; State: none; CNPS: List 1B.1
- aphanisma (*Aphanisma blitoides*); Fed: none; State: none; CNPS: List 1B.2
- Coulter's saltbush (*Atriplex coulteri*); Fed: none; State: none; CNPS: List 1B.2
- South Coast saltscale (*Atriplex pacifica*); Fed: none; State: none; CNPS: List 1B.2
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*); Fed: none; State: none; CNPS: List 1B.2
- intermediate mariposa-lily (*Calochortus weedii* var. *intermedius*); ; Fed: none; State: none; CNPS: List 1B.2
- many-stemmed dudleya (*Dudleya multicaulis*); Fed: none; State: none; CNPS: List 1B.2
- Laguna Beach dudleya (*Dudleya stolonifera*); Fed: **THR**; State: **THR**; CNPS: List 1B.1
- cliff spurge (*Euphorbia misera*); Fed: none; State: none; CNPS: List 2.2
- vernal barley (*Hordeum intercedens*); ; Fed: none; State: none; CNPS: List 3.2
- mesa horkelia (*Horkelia cuneata* ssp. *puberula*); Fed: none; State: none; CNPS: List 1B.1
- prostrate vernal pool navarretia (*Navarretia prostrate*); Fed: none; State: none; CNPS: List 1B.1

- Allen's pentachaeta (*Pentachaeta aurea* ssp. *allenii*); Fed: none; State: none; CNPS: List 1B.1
- Nuttall's scrub oak (*Quercus dumosa*); Fed: none; State: none; CNPS: List 1B.1
- chaparral ragwort (*Senecio aphanactis*); Fed: none; State: none; CNPS: List 2.2
- San Bernardino aster (*Symphyotrichum defoliatum*); Fed: none; State: none; CNPS: List 1B.2
- big-leaved crownbeard (*Verbesina dissita*); Fed: **THR**; State: **THR**; CNPS: List 1B.1

4.3 WILDLIFE

General

The reconnaissance-level wildlife survey was conducted throughout the project area on May 12, 2009 between 9:50 am and 11:15 am by Chambers Group wildlife biologists Paul Morrissey and Laurie Gorman. Weather conditions during the survey included temperatures of 67 to 70 degrees Fahrenheit with 95 percent cloud cover, and winds ranging from 0 to 5 miles per hour. **Appendix A** contains a list of wildlife species observed on the project area and adjacent habitats.

The following paragraphs describe the wildlife species observed or otherwise detected on or in the vicinity of the project area during the reconnaissance-level survey. Species observed on and adjacent to the project area are common in scrub, riparian and ornamental vegetation communities.

4.3.1.1 Birds

A total of 17 avian species were observed or otherwise detected during the survey. These species included mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), Allen's hummingbird (*Selasphorus sasin*), western kingbird (*Tyrannus verticalis*), wrentit (*Chamaea fasciata*), yellow warbler (*Dendroica petechia*), yellow-breasted chat (*Icteria virens*), and black-headed grosbeak (*Pheucticus melanocephalus*). A complete list of avian species observed is included as **Appendix A**.

4.3.1.2 Amphibians, Fish, Mammals, and Reptiles

Surveys on foot did not occur within drainage areas to the east of the chain-link fence. No amphibians, fish, mammals, or reptiles were observed or otherwise detected within the proposed church structure footprint during the survey, which was conducted from the west side of the chain-link fence.

Sensitive Wildlife

The CNDDB and literature review resulted in a list of 24 sensitive wildlife species that have historically occurred within the vicinity of the project area. Ten of these 24 sensitive wildlife species are federal- and/or state-listed as endangered or threatened. The table below explains federal and state listing designations.

Table 3 – Federal and State Listing Designations

Federal Designations	
FE	USFWS Federal Endangered
FT	USFWS Federal Threatened
FPT	USFWS Federal Proposed Threatened
FC	USFWS Federal Candidate for Listing
FD	USFWS Delisted
State Designations	
SE	CDFG State Endangered
ST	CDFG State Threatened
FPS	CDFG State Fully Protected Species
SSC	CDFG State Species of Special Concern

The following is a list of the 24 sensitive species and their current status. Section 4.3.1.3 describes the potential for these species to occur in the project area.

- San Diego fairy shrimp (*Branchinecta sandiegonensis*); FEDERAL: **FE** STATE: none
- tidewater goby (*Eucyclogobius newberryi*); FEDERAL: **FE**; STATE: SSC
- western spadefoot (*Spea hammondii*); FEDERAL: none; STATE: SSC
- southwestern pond turtle (*Actinemys marmorata pallidal*); FEDERAL: none; STATE: SSC
- coast (San Diego) horned lizard (*Phrynosoma coronatum blainvillii*); FEDERAL: none; STATE: SSC
- orange-throated whiptail (*Aspidoscelis hyperythrall*); FEDERAL: none; STATE: SSC
- northern red-diamond rattlesnake (*Crotalus ruber rubber*); FEDERAL: none; STATE: SSC
- light-footed clapper rail (*Rallus longirostris levipes)*; FEDERAL: **FE**; STATE: **SE**
- California black rail (*Laterallus jamaicensis coturniculus*); FEDERAL: none; STATE: **ST**
- western snowy plover (*Charadrius alexandrinus nivosus*); FEDERAL: **FT**; STATE: SSC
- California least tern (*Sternula antillarum browni*); FEDERAL: **FE**; STATE: **SE**
- burrowing owl (*Athene cunicularia*); FEDERAL: none; STATE: SSC
- coastal cactus wren (*Campylorhynchus brunneicapillus*); FEDERAL: none; STATE: SSC
- coastal California gnatcatcher (*Polioptila californica californica*); FEDERAL: **FT**; STATE: SSC
- least Bell's vireo (*Vireo bellii pusillus*); FEDERAL: **FE**; STATE: **SE**
- yellow-breasted chat (*Icteria virens*); FEDERAL: none; STATE: SSC
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*); FEDERAL: **FE;** STATE: none
- grasshopper sparrow (*Ammodramus savannarum*); FEDERAL: none; STATE: SSC
- southern California saltmarsh shrew (*Sorex ornatus salicornicus*); FEDERAL: none; STATE: SSC
- Mexican long-tongued bat (*Choeronycteris Mexicana*); FEDERAL: none; STATE: SSC
- western mastiff bat (*Eumops perotis californicus*); FEDERAL: none; STATE: SSC
- big free-tailed bat (*Nyctinomops macrotis*); FEDERAL: none; STATE: SSC
- Pacific pocket mouse (*Perognathus longimembris pacificus*); FEDERAL: **FE**; STATE: SSC
- American badger (*Taxidea taxus*); FEDERAL: none; STATE: SSC

4.3.1.3 Sensitive Wildlife Species Potentially Occurring in the Project Area

The project area to the west of the chain-link fence was composed of dense, ornamental landscaping; therefore, all 24 of these species were determined to be absent from the project area west of the fence due to lack of suitable habitat.

The project area to the east of the chain-link fence, which included area proposed for fuel modification, lacked suitable habitat to support the sensitive wildlife species listed above with the exception of the coastal California gnatcatcher (*Polioptila californica californica*), a federally threatened species and a SSC. The coastal California gnatcatcher could potentially occur in the California Sagebrush Series

(Section 4.2.1.4) and California Encelia Series (Section 4.2.1.2) vegetation communities that exist in the portion of the ESA that occurs within the proposed fuel modification buffer. The following describes the coastal California gnatcatcher and its potential for occurrence.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a federally threatened species and a SSC. The historic range of this species extended from the coast and foothills of Ventura County, south through Los Angeles, southwestern San Bernardino, western Riverside, Orange, and San Diego Counties of California into northwestern Baja California, Mexico. Populations have since become increasingly fragmented. It is a permanent resident of Diegan, Riversidian, and Venturan sage scrub sub-associations found from sea level to 2,500 feet in elevation. Within its range, it associates strongly with California sagebrush dominant habitats and also occurs in mixed scrub habitats with lesser percentages of this favored shrub. Other plant species important for the nesting and foraging of this species include California buckwheat (*Eriogonum fasciculutam*), white sage, black sage, and chaparral broom (*Baccharis sarothroides*). Chamise habitats may also support breeding pairs, especially where coastal sage scrub may occur nearby or form a component (Bontrager 1991).

The California Sagebrush Series vegetation community provides potential nesting habitat for the coastal California gnatcatcher. This community occurs in the eastern portion of the proposed fuel modification buffer. The California Encelia Series vegetation community occurs in the project area immediately east of the existing fence, in the proposed fuel modification buffer. This community may provide foraging habitat for this species. The literature search for the biological reconnaissance survey revealed that there have been many historical occurrences of this species within two miles of the project area, the closest occurrence being within 0.3 mile in 2003. Therefore, there is a moderate potential for the coastal California gnatcatcher to occur in the project area within the proposed fuel modification buffer only. Focused surveys for this species are recommended in Section 5.2 of this report.

4.3.1.4 Nesting Avian Species in the Project Area

No nesting avian species were found within the area proposed for the church structure during the biological reconnaissance survey; however, there is potential for birds to nest in and adjacent to project area east of the chain-link fence. Section 5.2 of this report provides recommendations for nesting bird surveys to be conducted prior to vegetation removal and construction activities.

4.4 SENSITIVE HABITATS

USACE and CDFG Preliminary Jurisdictional Assessment

The project area west of the chain-link fence designated for the proposed church structure did not contain any of the hydrological features associated with an active definable channel or wetland, pursuant to Section 401 of the USACE, Section 404 of the Clean Water Act or Section 1600-1607 of the CDFG code. This area was covered by dense ornamental landscaping and was situated on a terrace between the church parking lot and a chain-link fence within the church property. Therefore, no USACE, CDFG, or RWQCB jurisdictional waters were identified within the area where the proposed church structure would be built.

The project area was located approximately 3,000 feet north of the San Joaquin Reservoir and directly adjacent to a drainage system leading to the San Joaquin Reservoir and Upper Newport Back Bay. A tributary to this drainage system appeared to exist within or close to the eastern edge of the proposed fuel modification buffer; however, this could not be determined because the area designated by the Newport Beach Fire Department for fuel modification was not defined at the time of the biological survey. Vegetation in the drainage tributary included poison oak and coyote brush. Section 5.3 provides recommendations to minimize impacts to this tributary if it does occur within the area designated for fuel modification.

Wildlife Movement Corridors

A wildlife corridor existed in the ESA between the chain-link fence and Highway 73 to the north which provided connectivity between the Newport Back Bay, San Diego Creek, and the San Joaquin Reservoir. The proposed fuel modification buffer component of the project will extend into the ESA and therefore may affect the edge of the corridor mentioned above. Section 5.3 of this report provides recommendations for minimizing impacts on the adjacent wildlife corridor. The project area proposed for construction on the church structure will not serve as a wildlife corridor due to the existing fence.

Riparian Habitat

Riparian habitat composed of mixed willow series and mule fat series vegetation communities (described in Sections 4.2.1.5 and 4.2.1.6 of this report, respectively) located northeast of the proposed church structure existed in the vicinity of the eastern edge of the fuel modification buffer component of the project area. However, this could not be determined because the area designated by the Newport Beach Fire Department for fuel modification was not defined at the time of the biological survey. Section 5.3 provides recommendations to minimize disturbance to riparian habitat. Riparian habitat does not exist west of the chain-link fence.

SECTION 5 - CONCLUSIONS AND RECOMMENDATIONS

This section summarizes the findings of the biological surveys and provides recommendations for the project area.

5.1 SENSITIVE PLANTS

The project area to the west of the chain-link fence was densely covered with ornamental, non-native vegetation and does not contain habitat to support any sensitive plant species. The project area east of the chain-link fence, containing the proposed fuel modification buffer and ESA, has the potential to support sensitive species, including two listed species, Laguna Beach dudleya and big-leaved crownbeard. The following is recommended to avoid disturbance to these listed plants as well as other sensitive plants that may occur in the fuel modification buffer:

- Vegetation removal shall take place only under the supervision of a qualified biological monitor knowledgeable in the identification of sensitive plant species. The monitor shall flag sensitive and fire resistive plants so that the vegetation removal crew can avoid impact to these species.

Note: *If a federal- or state-listed endangered or threatened plant species is found in the project area, regardless of whether or not it is found during the blooming season, the resource agencies shall be notified and a consultation may be necessary regarding avoidance measures.*

5.2 SENSITIVE WILDLIFE

The project area to the west of the chain-link fence was densely covered with ornamental, non-native vegetation and does not contain habitat to support any sensitive wildlife species. The project area to the east of the chain-link fence, which included area proposed for fuel modification, contained habitat suitable for the coastal California gnatcatcher, a federally threatened species and a SSC. In addition, there is potential for birds to nest in the project area. Therefore, the following measures shall be implemented in compliance with the Migratory Bird Treaty Act:

- All brush clearing (except tree trimming or removal – see below) and other construction activities shall occur outside the general avian breeding season. All shall take place between September 16 and February 14 (*i.e.*, outside of the general avian breeding season of February 15 through September 15).

- Tree trimming or removal shall only take place between September 16 and December 31 (*i.e.*, outside the raptor breeding season of January 1 through September 15).

If vegetation removal must take place during the avian breeding season, the following bird surveys shall be completed by the project biologist:

- Coastal California gnatcatcher: Conduct protocol focused surveys for coastal California gnatcatcher in accordance with USFWS guidelines (1997). These surveys shall take place prior to vegetation removal and construction.

- Raptors: Survey for nesting activity of raptors within a 500-foot radius of the project area. Surveys shall be conducted during appropriate nesting times and concentrate on areas supporting mature trees. If any active nests are observed, the nest area shall be flagged and protected (while occupied) during construction. This survey shall take place prior to vegetation removal and construction within the project area.

- Other avian species: Survey habitat in the project area and within a 300-foot radius prior to vegetation removal and construction. If any active nests are observed, the nest area shall be flagged and protected (while occupied) during construction.

Note: *If a federal- or state-listed endangered or threatened wildlife species is found within the fuel modification buffer, regardless of whether or not it is found during the breeding season, the resource agencies shall be notified and a consultation may be necessary regarding avoidance measures.*

5.3 SENSITIVE HABITATS

USACE, RWQCB, and CDFG Preliminary Jurisdictional Assessment

The project area west of the chain-link fence was located on a developed terrace and did not contain hydrological features associated with a definable channel or wetland, pursuant to Section 401, 402, and 404 of the Clean Water Act or Section 1600-1607 of the CDFG code.

The project area was located approximately 3,000 feet north of the San Joaquin Reservoir and directly adjacent to a drainage system leading to the San Joaquin Reservoir and the Upper Newport Back Bay. A tributary to this drainage system appeared to exist within the eastern edge of the proposed fuel modification buffer; however, this could not be determined because the area designated by the Newport Beach Fire Department for fuel modification was not defined at the time of the biological survey. The following is recommended for this drainage feature:

- Conduct a field survey of the property boundary and stake the area proposed for fuel modification to verify this drainage feature lies within the proposed fuel modification buffer. Coordinate with the City of Newport Beach Fire Department to determine if this drainage feature can be completely avoided during fuel modification activities. If the bed, bank, and channel and riparian vegetation within this drainage can be avoided entirely, 401, 404, and 1600 permits shall not be required.

- If this drainage feature is determined to exist within the proposed fuel modification buffer and cannot be avoided, a formal jurisdictional delineation shall be required to determine impacts to USACE/RWQCB/CDFG jurisdictional waters. Agency coordination shall be required based on the findings of the formal delineation.

Vegetation removal in the area upslope of the drainage system without proper soil stabilization afterwards could lead to erosion of the hillside and adversely affect the drainage system below. One of the Fuel Modification Requirements set forth by The City of Newport Beach Fire Department is to plant fire resistive plants from the *City of Newport Beach Urban Wildland Interface Area Standard for Hazard Reduction Fire Resistive Plant List* (**Appendix D**) after the removal of combustible plants within Zone B of the proposed fuel modification buffer. Construction plans for this project show that the portion of the proposed fuel modification buffer that will extend into the ESA is designated as Zone B by the City of Newport Beach Fire Department. Therefore, replacement planting will be required in this area. In order to satisfy this requirement by the City and at the same time prevent impacts to the drainage system, the following is recommended:

- Preparation of a Planting Plan that includes the following techniques instrumental for hillside stabilization:

    - Describes an above-ground cutting method, leaving approximately 1" stumps.

    - Provides a list of species for replacement planting that are instrumental for soil stability. These species shall be selected from the *City of Newport Beach Urban Wildland Interface Area Standard for Hazard Reduction Fire Resistive Plant List*. These plants shall also be native in order to satisfy the recommendations provided below concerning wildlife movement corridors.

    - Provides direction in application of a soil binder to areas where plants are removed.

Wildlife Movement Corridors

The project area proposed for construction of a church structure was located adjacent to an existing wildlife corridor. This area was situated on a terrace on church property, fenced in, and covered by dense ornamental vegetation. Therefore, construction of the proposed church structure is not expected to impede any wildlife movement corridors.

The project area to the east of the chain-link fence, within the ESA, is part of an existing wildlife movement corridor which provides connectivity between Newport Back Bay, San Diego Creek, and the San Joaquin Reservoir. Vegetation clearing and maintenance for a fuel modification buffer that extends into the ESA in the eastern portion of the project area may have a long-term edge effect on the existing corridor. In order to minimize edge effects by fuel modification, the following is recommended:

- During preparation of a Planting Plan as described under the jurisdictional assessment recommendations above, replacement planting recommendations for Zone B shall consist, to the greatest extent feasible, of only native plants characteristic of the California sagebrush scrub vegetation community already present within the ESA. In addition, these plants shall be selected for good hillside stabilization as described above in the jurisdictional assessment discussion.

- Replacement planting with native plants characteristic of the California sagebrush scrub community, as mentioned above, will minimize effects to the existing corridor. If this is not feasible, then an-depth wildlife corridor study for the fuel modification buffer may be required.

Riparian Habitat

Riparian habitat composed of mule fat series and mixed willow series vegetation communities exists approximately 150 feet and 300 feet northeast of the proposed church structure location, respectively. By superimposing a digital outline of the property boundary onto aerial maps provided on the City of Newport Beach website, it appears that this area exists outside of the proposed fuel modification buffer, which will only extend to the property boundary; however, the following is recommended to verify this finding:

- Conduct a field survey of the property boundary and stake the area proposed for fuel modification. Should the mixed willow series and/or mule fat series fall within the proposed fuel modification buffer, coordination with the City of Newport Beach Fire Department is recommended to completely avoid these communities during vegetation removal.

5.4 RECOMMENDED BEST MANAGEMENT PRACTICES FOR CONSTRUCTION

Construction of the project could result in degradation of habitats (i.e., the ESA) adjacent to the project through erosion, dust, pollution, sedimentation, and light. Dust generated by motorized vehicles can cover plants and interfere with physiological functions ultimately affecting plant vigor, reproduction, and survival. Dust is likely to be generated from project construction. In addition, runoff from project

construction could cause stream and waterway sedimentation in the ESA adjacent to the project area. The following are recommended best management practices for construction in order to minimize impacts to adjacent habitat and wildlife, including sensitive plants and wildlife that may be present within the ESA, during construction activities.

- Feeding of wildlife by project personnel is prohibited.

- To minimize harassment or killing of wildlife and to prevent the introduction of destructive animal diseases to native wildlife populations, project personnel are not allowed to bring pets into any project area.

- The contractor shall confine all project activities to the right-of-way, approved access road, and storage areas. All limits of construction shall be delineated with orange construction fencing. During and after construction, entrances to access roads shall be gated to prevent the unauthorized use of these roads by the general public. Signs prohibiting unauthorized use of the access roads shall be posted on these gates.

- Sensitive areas shall be delineated by construction fencing or similar materials prior to any clearing or grading activities.

- Silt fencing, straw mulch, and straw bale check dams shall be installed as appropriate to contain sediment within construction work areas and staging areas. Where soils and slopes exhibit high erosion potential, erosion control blankets, matting, and other fabrics and/or other erosion control measures shall be implemented.

- During project construction, all seeds and straw materials shall be certified weed free.

- Project personnel shall not deposit or leave any food or waste in the project area, and no biodegradable or non-biodegradable debris shall remain in the work area following completion of construction. All refuse shall be placed in appropriate wildlife-proof containers and removed from job sites daily.

- Night lighting within the project area adjacent to the ESA shall be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable.

- All steep-walled trenches or excavations used during construction shall be covered at all times except when being actively utilized. If the trenches or excavations cannot be covered, exclusion fencing (*i.e.*, silt fencing) shall be installed around the trench or excavation, or it shall be covered to prevent entrapment of wildlife.

- Open trenches or other excavations that could entrap wildlife shall be inspected carefully before backfilling. Should a dead or injured listed species be found in a trench or excavation or anywhere in the construction zone or along an access road, the Wildlife Agencies shall be contacted within 48 hours of detection. Construction holes left open over night shall be covered.

- Disposal or temporary placement of excess fill, brush or other debris shall not be allowed in waters of the United States or their banks.

- All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas outside of waters of the United States within the fenced project impact limits. These designated areas shall be located in previously compacted and disturbed areas to the maximum extent practicable in such a manner as to prevent any runoff from entering waters of the United States, and shall be shown on the construction plans.

- Fueling of equipment shall take place within existing paved areas or designated fueling areas away from waters of the United States. Contractor equipment shall be checked for leaks prior to operation and repaired as necessary. “No-fueling zones” shall be designated on construction plans and/or within the stormwater pollution prevention plan.

- The contractor shall institute measures to prevent fire and leakage from vehicles during construction on the project site. Such measures shall include designated no smoking zones and parking areas. Construction equipment shall be restricted to designated areas and roads. A water truck shall be maintained at the project site during all construction activities in order to provide an emergency water source in case of fire.

SECTION 6 - REFERENCES

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1997 Coastal California Gnatcatcher (*Polioptila californica californica*): Presence/Absence Survey Guidelines. Unpublished Paper. Sacramento, California.

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APPENDIX A – WILDLIFE SPECIES DETECTED

Wildlife Species Detected at and adjacent-to the 2300 Bonita Canyon Drive Project Area in the City of Newport Beach, CA

Scientific Name	Common Name
CLASS AVES	**BIRDS**
COLUMBIDAE	**PIGEONS AND DOVES**
Zenaida macroura	mourning dove
TROCHILIDAE	**HUMMINGBIRDS**
Calypte anna	Anna's hummingbird
Selasphorus sasin	Allen's hummingbird
TYRANNIDAE	**TYRANT FLYCATCHERS**
Sayornis nigricans	black phoebe
Tyrannus verticalis	western kingbird
CORVIDAE	**JAYS, MAGPIES, AND CROWS**
Corvus brachyrhynchos	American crow
TROGLODYTIDAE	**WRENS**
Troglodytes aedon	house wren
TIMALIIDAE	**BABBLERS**
Chamaea fasciata	wrentit
PARULIDAE	**WOOD WARBLERS AND RELATIVES**
Dendroica petechia	yellow warbler
Geothlypis trichas	common yellowthroat
Icteria virens	yellow-breasted chat
EMBERIZIDAE	**SPARROWS AND RELATIVES**
Melospiza melodia	song sparrow
Pipilo crissalis	California towhee
Pipilo maculatus	spotted towhee
CARDINALIDAE	**CARDINALS AND RELATIVES**
Pheucticus melanocephalus	black-headed grosbeak
FRINGILLIDAE	**FINCHES**
Carduelis psaltria	lesser goldfinch
Carpodacus mexicanus	house finch

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APPENDIX B – SITE PHOTOGRAPHS

Photo 1. Photo taken of the proposed church structure footprint of the project area, west of the chain-link fence. Note dense ornamental, non-native vegetation covering this area.

Photo 2. This photo was taken facing west towards the project site. Note California Sagebrush Series vegetation within eastern portion of the project site, indicated by a red arrow. This vegetation community is suitable for the coastal California gnatcatcher (*Polioptila californica californica*), a federally threatened species and California Species of Special Concern.

2300 BONITA CANYON DRIVE
SITE PHOTOGRAPHS
APPENDIX B

Photo 3. Photo taken facing south, showing difference in vegetation between the project area to the west (right side of photo, ornamental/non-native vegetation) and the project area to the east (left side of photo, native vegetation communities). Bonita Canyon Drive is pictured in the background.

Photo 4. Photo was taken while standing on the west side of the chain-link fence, facing east towards the California Sagebrush Series vegetation community within the fuel modification portion of the project area. Highway 73 is visible in the background and Bonita Canyon Drive is pictured on the right side of the photo.

Photo 5. Photo taken from west of the chain-link fence, facing north towards the California Sagebrush Series vegetation community and the drainage feature that occurs in the eastern portion of the proposed fuel modification buffer.

Photo 6. Photo depicts Mule Fat Series and Mixed Willow Series habitats that exist north of the proposed church structure, in the vicinity of the proposed fuel modification buffer.

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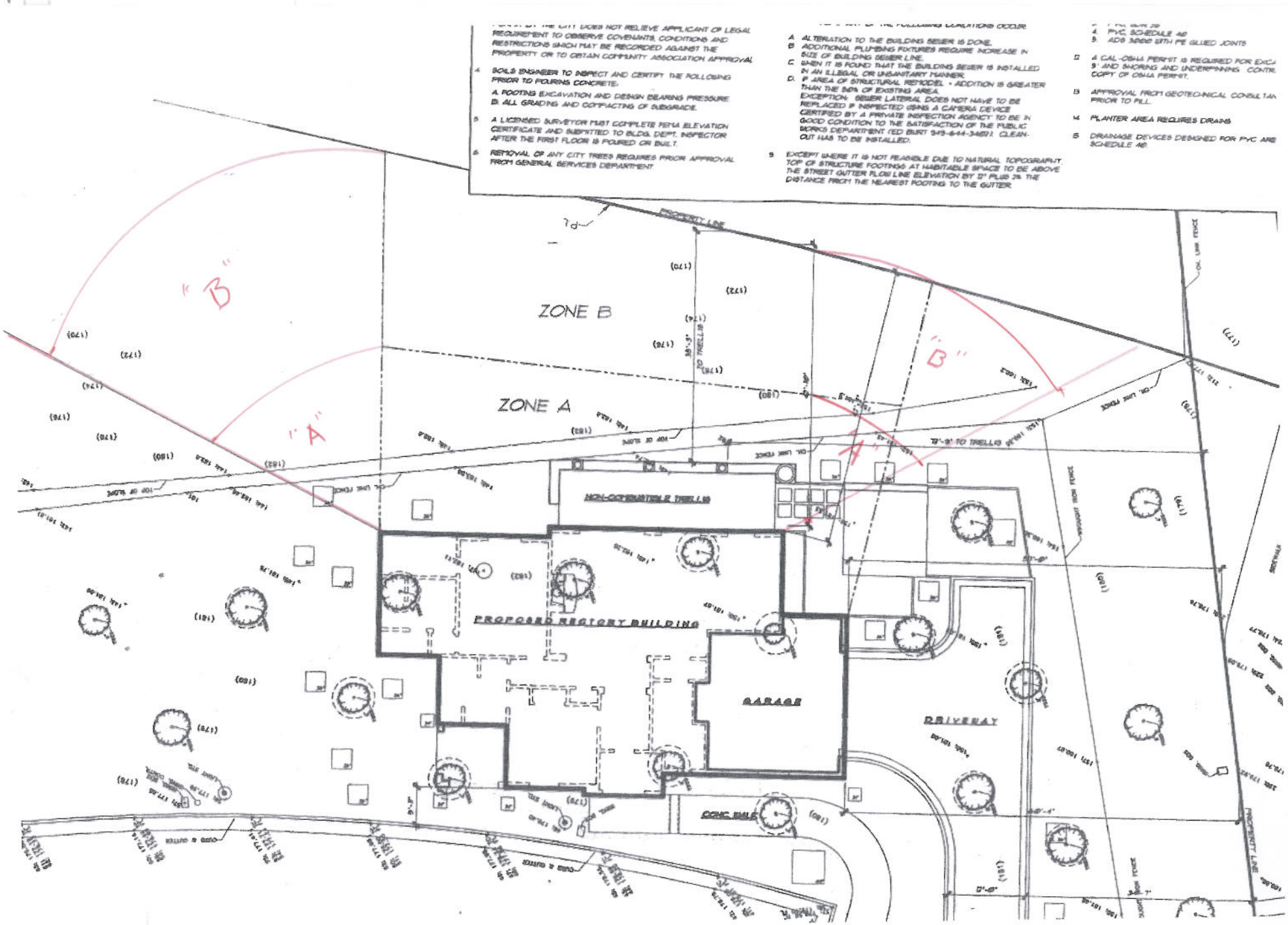
APPENDIX C – SITE PLAN



4. SOILS ENGINEER TO INSPECT AND CERTIFY THE FOLLOWING PRIOR TO POURING CONCRETE:
   A. FOOTING EXCAVATION AND DESIGN BEARING PRESSURE
   B. ALL GRADING AND COMPACTING OF SUBGRADE.
5. A LICENSED SURVEYOR MUST COMPLETE FEMA ELEVATION CERTIFICATE AND SUBMITTED TO BLDG. DEPT. INSPECTOR AFTER THE FIRST FLOOR IS POURED OR BUILT.
6. REMOVAL OF ANY CITY TREES REQUIRES PRIOR APPROVAL FROM GENERAL SERVICES DEPARTMENT.

A. ALTERATION TO THE BUILDING SEWER IS DONE.
B. ADDITIONAL PLUMBING FIXTURES REQUIRE INCREASE IN SIZE OF BUILDING SEWER LINE.
C. WHEN IT IS FOUND THAT THE BUILDING SEWER IS INSTALLED IN AN ILLEGAL OR UNSANITARY MANNER.
D. IF AREA OF STRUCTURAL REMODEL + ADDITION IS GREATER THAN THE 50% OF EXISTING AREA.
EXCEPTION: SEWER LATERAL DOES NOT HAVE TO BE REPLACED IF INSPECTED USING A CAMERA DEVICE CERTIFIED BY A PRIVATE INSPECTION AGENCY TO BE IN GOOD CONDITION TO THE SATISFACTION OF THE PUBLIC WORKS DEPARTMENT. (ED BURT 949-644-3467). CLEAN-OUT HAS TO BE INSTALLED.

9. EXCEPT WHERE IT IS NOT FEASIBLE DUE TO NATURAL TOPOGRAPHY TOP OF STRUCTURE FOOTINGS AT HABITABLE SPACE TO BE ABOVE THE STREET GUTTER FLOW LINE ELEVATION BY 12" PLUS 2% THE DISTANCE FROM THE NEAREST FOOTING TO THE GUTTER.

4. PVC, SCHEDULE 40
5. ADS 3000 WITH PE GLUED JOINTS

12. A CAL-OSHA PERMIT IS REQUIRED FOR EXCA 5' AND SHORING AND UNDERPINNING. CONTR COPY OF OSHA PERMIT.
13. APPROVAL FROM GEOTECHNICAL CONSULTAN PRIOR TO FILL.
14. PLANTER AREA REQUIRES DRAINS
15. DRAINAGE DEVICES DESIGNED FOR PVC ARE SCHEDULE 40.

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APPENDIX D – CITY OF NEWPORT BEACH URBAN WILDLAND INTERFACE AREA STANDARD FOR HAZARD REDUCTION FIRE RESISTIVE PLANT LIST

City of Newport Beach
Urban Wildland Interface Area
Standard for Hazard Reduction

Fire Resistive Plant List

Botanical Name	Common Name	Plant Form	Remarks
Abelia x grandiflora	Glossy Abelia	Shrub	
Acacia redolens desert carpet	Desert Carpet	Shrub	
Acer macrophyllum	Big Leaf Maple	Tree	
Achillea millefolium	Common Yarrow	Low Shrub	Prune back after flowering to remove dried fire fuel
Achillea tomentosa	Woolly Yarrow	Low Shrub	Prune back after flowering to remove dried fire fuel
Aeonium decorum	Aeonium	Ground cover	
Aeonium simsii	no common name	Ground cover	
Agave attenuata	Century Plant	Succulent	
Agave shawii	Shaw's Century Plant	Succulent	
Agave victoriae-reginae	no common name	Ground Cover	Low maintenance
Ajuga reptans	Carpet Bugle	Ground Cover	Poor on slopes
Alnus cordata	Italian Alder	Tree	
Alnus rhombifolia	White Alder	Tree	30-50 feet height
Aloe arborescens	Tree Aloe	Shrub	Highly invasive
Aloe aristata	no common name	Ground Cover	
Aloe brevifoli	no common name	Ground Cover	
Aloe Vera	Medicinal Aloe	Succulent	
Alogyne huegeii	Blue Hibiscus	Shrub	
Ambrosia chammissonis	Beach Bur-Sage	Perennial	
Amorpha fruticosa	Western False Indigobush	Shrub	Native
Anigozanthus flavidus	Kangaroo Paw	Perennial/accent	
Antirrhinum nuttalianum ssp.	no common name	Subshrub	
Aptenia cordifolia x 'Red Apple'	Red Apple Aptenia	Ground cover	High fire retardance
Arbutus unedo	Strawberry Tree	Tree	
Arctostaphylos 'Pacific Mist'	Pacific Mist Manzanita	Ground Cover	
Arctostaphylos edmundsii	Little Sur Manzanita	Ground Cover	Slow to establish
Arctostaphylos glandulosa ssp.	Eastwood Manzanita	Shrub	
Arctostaphylos hookeri 'Monterey Carpet'	Monterey Carpet Manzanita	Low Shrub	Excellent drought tolerance, semi-upright to 12 inches
Arctostaphylos pungens	no common name	Shrub	
Arctostaphylos refugioensis	Refugio Manzanita	Shrub	
Arctostaphylos uva-ursi	Bearberry	Ground Cover	Excellent drought tolerance, spreading 4-6', height to 1'
Arctostaphylos x 'Greensphere'	Greensphere Manzanita	Shrub	
Artemisia caucasica	Caucasian Artesmisia	Ground Cover	Very low maintenance; takes some foot traffic
Artemisia pycnocephala	Beach Sagewort	Perennial	
Atriplex canescens	Four-Wing Saltbush	Shrub	
Atriplex lentiformis ssp. breweri	Brewer Saltbush	Shrub	Native
Baccharis emoyi	Emory Baccharis	Shrub	
Baccharis pilularis ssp. Consanguinea	Chaparral Bloom	Shrub	Native - Drought tolerant
Baccharis pilularis var. pilularis 'Twin Peaks #2'	Twin Peaks	Ground Cover	Use only male plants
Baxtylis glomerata	Berber Orchard Grass	Grass	

Baccharis salicifolia	Mulefat	Shrub	Native - Drought tolerant

Botanical Name	Common Name	Plant Form	Remarks
Baileya multiradiata	Desert Marigold	Ground Cover	Drought tolerant
Beaucarnea recurvata	Bottle Palm	Shrub/Small Tree	
Bougainvillea spectabilis	Bougainvillea	Shrub	
Brahea armata	Mexican Blue Palm/Blue Hesper Palm	Palm	
Brahea brandegeei	San Jose Hesper Palm	Palm	
Brahea edulis	Guadalupe Palm	Palm	
Brickellia californica	no common name	Subshrub	
Bromus carinatus	California Brome	Grass	
Camissonia cheiranthifiloa	Beach Evening Primrose	Perennial Shrub	Native
Carissa macrocarpa	Green Carpet Natal Plum	Ground Cover/Shrub	Fair-good drought tolerance, spreads 12-18"
Carpobrotus chilensis	Sea Fig Ice Plant	Ground Cover	
Ceanothus gloriosus 'Point Reyes'	Point Reyes Ceanothus	Shrub	Excellent drought tolerance, semi-upright 12-18"
Ceanothus griseus 'Louis Edmunds'	Louis Edmunds Ceanothus	Shrub	
Ceanothus griseus horizontalis	Yankee Point	Ground Cover	
Ceanothus griseus var. horizontalis	Carmel Creeper Ceanothus	Shrub	Excellent drought tolerance.
Ceanothus griseus var. horizontalis 'Yankee Point'	Yankee Point Ceanothus	Shrub	2-3' tall
Ceanothus megarcarpus	Big Pod Ceanothus	Shrub	
Ceanothus prostratus	Squaw Carpet Ceanothus	Shrub	Excellent drought tolerance; spreads 2-6'
Ceanothus spinosus	Green Bark Ceanothus	Shrub	
Ceanothus verrucosus	Wart-Stem Ceanothus	Shrub	
Cerastium tomentosum	Snow-in-Summer	Ground cover/Shrub	White flower color
Ceratonia siliqua	Carob	Tree	
Cercis occidentalis	Western Redbud	Shrub/Tree	Drought tolerant
Chrysanthemum leucanthemum	Oxeye Daisy	Ground Cover	Ornamental, flowering
Cistus crispus	no common name	Ground Cover	
Cistus hybridus	White Rockrose	Shrub	
Cistus incanus	no common name	Shrub	
Cistus incanus ssp. Corsicus	no common name	Shrub	
Cistus salviifolius	Sageleaf Rockrose	Shrub	
Cistus x purpureus	Orchid Rockrose	Shrub	
Citrus spp.	Citrus	Tree	
Clarkia bottae	Showy Fairwell to Spring	Annual	
Cneoridium dumosum	Bushrue	Shrub	
Collinsia heterophyllia	Chinese Houses	Annual	
Comarostaphylis diversifolia	Summer Holly	Shrub	
Convolvulus cneorum	Bush Morning Glory	Shrub	White flower color
Coprosma kirkii	Creeping Coprosma	Ground Cover/Shrub	Subject to dieback after 3-4 years
Coprosma pumila	Prostrate Coprosma	Low shrub	
Coreopsis californica	Califiornia Coreopsis	Annual	
Coreopsis lanceolata	Coreopsis	Ground Cover	Ornamental flowering
Corea pulchella	Australian Fuscia	Ground Cover	12" height, 36" spread
Cotoneaster buxifolius	no common name	Shrub	
Cotoneaster congestus 'Likiang'	Likiang Cotoneaster	Ground Cover/Vine	
Cotoneaster aprneyi	no common name	Shrub	
Crassula lactea	no common name	Ground Cover	
Crassula multicava	no common name	Ground Cover	Not recommended for steep slopes

Botanical Name	Common Name	Plant Form	Remarks
Crassula ovata	Jade Tree	Shrub	
Crassula tetragona	no common name	Ground Cover	
Croton californicus	California Croton	Ground Cover	
Delosperma 'alba'	White trailing Ice Plant	Ground Cover	Not recommended for steep slopes
Dendromecon rigida	Bush Poppy	Shrub	
Dichelostemma capitatum	Blue Dicks	Herb	
Distinctis buccinatoria	Blood-Red Trumpet Vine	Vine/Climbing vine	
Dodonaea viscosa	Hopseed Bush	Shrub	Drought tolerant
Drosanthemum floribundum	Rosea Ice Plant	Ground Cover	
Drosanthemum hispidum	no common name	Ground Cover	
Drosanthemum speciosus	Dewflower	Ground Cover	
Dudleya lanceolata	Lance-leaved Dudleya	Succulent	Native
Dudleya pulverulenta	Chalk Dudleya	Succulent	Native
Elaeagnus pungens	Silverberry	Shrub	
Encelia californica	California Encelia	Small Shrub	Native
Epilobium canum [Zauschneria californica]	Hoary California Fuschia	Shrub	
Eriastrum sapphirinum	Mojave Woolly Star	Annual	
Eriobotrya japonica	Loquat	Tree	
Eriodictycon crassifolium	Thick Leaf Yerba Santa	Shrub	
Eriodictycon trichocalyx	Yerba Santa	Shrub	
Eriophyllum confertiflorum	no common name	Shrub	Native
Erythrina spp.	Coral Tree	Tree	Red/pink flower color
Escallonia spp.	Several varieties	Shrub	
Eschscholzia californica	California Poppy	Flower	
Eschscholzia mexicana	Mexican Poppy	Herb	
Euonymus fortunei	Winter Creeper Euonymus	Ground Cover	
Feijoa sellowiana	Pineapple Guava	Shrub/Tree	
Fragaria chiloensis	Wild Strawberry/Sand Strawberry	Ground Cover	
Frankenia salina	Alkali Heath	Ground Cover	Native
Fremontondendron californicum	California Flannelbush	Shrub	
Gaillardia x grandiflora	Blanketflower	Ground Cover	Ornamental flower
Galvezia speciosa	Bush Snapdragon	Shrub	Red flowers
Garrya ellipta	Silktassel	Shrub	
Gazania hybrids	South African Daisy	Ground Cover	
Gazania rigens leucolaena	Training Gazania	Ground Cover	Strongly recommended; creeping varieties
Gillia capitata	Globe Gilia	Perrenial	
Gilia leptantha	Showy Gilia	Perrenial	
Gilia tricolor	Bird's Eyes	Perrenial	
Ginkgo biloba	Maidenhair Tree	Tree	
Gnaphalium Californicum	California Everlasting	Annual	
Grewia occidentalis	Starflower	Shrub	
Grindelia stricta	Gum Plant	Ground Cover	Green foliage
Hakea suaveolens	Sweet Hakea	Shrub	
Hardenbergia comptoniana	Lilac Vine	Shrub	
Heliathemum muutabile	Sunrose	Ground Cover/Shrub	Good drought tolerance, 6-12"
Helianthemum scoparium	Rush Rose	Shrub	Small leaves, drought tolerant
Heliotropium curassavicum	Salt Heliotrope	Ground Cover	Native
Helix Canariensis	English Ivy	Ground Cover	

Botanical Name	Common Name	Plant Form	Remarks
Hesperaloe parviflora	Red Yucca	Perennial	
Heteromeles arbutifolia	Toyon	Shrub	Native - May be trimmed up to tree form
Hypericum calycimum	Aaron's Beard	Shrub	Good t very good drought tolerance
Iberis sempervirens	Edging Candytuft	Ground Cover	White flower color
Iberis umbellatum	Globe Candytuft	Ground Cover	Ornamental flowering
Isocoma menziesii	Coastal Goldenbush	Small Shrub	Native
Isomeris arborea	Bladderpod	Shrub	Native - Drought tolerant
Iva hayesiana	Poverty Weed	Ground Cover	Erosion control, fast growth, spreads
Juglans californica	California Black Walnut	Tree	
Juncus acutus	Spiny Rush	Perrenial	Native
Keckiella antirrhinoides	Yellow Bush Penstemon	Subshrub	
Keckiella cordifolia	Heart Leaved Penstemon	Subshrub	
Keckiella ternata	Blue Stemmed Bush Penstemon	Subshrub	
Kniphofia uvaria	Red Hot Poker	Perennial	
Lagerstroemia indica	Crape Myrtle	Tree	
Lagunaria patersonii	Primrose Tree	Tree	
Lamprathus aurantiacus	Bush Ice Plant	Ground Cover	
Lampranthus filicaulis	Redondo Creeper	Ground Cover	
Lampranthus spectabilis	Trailing Ice Plant	Ground Cover	
Lantana camara cultivars	Yellow Sage	Shrub	Water deeply, infrequently
Lantana montevidensis	Trailing Lantana	Shrub	Frost tender
Lasthenia californica	Dwarf Goldfields	Annual	
Lavandula dentata	French Lavender	Shrub	
Leptospermum laevigatum	Australian Tea Tree	Shrub	
Leucophyllum frutescens	Texas Ranger	Shrub	
Leymus condensatus	Giant Wild Rye	Large Grass	Native
Ligustrum japonicum	Texas privet	Shrub	White flower color
Limonium pectinatum	no common name	Ground Cover	Drought and salt tolerant
Limonium perezii	Sea Lavender	Shrub	Perennial
Liquidambar styraciflua	American Sweet Gum	Tree	
Liriodendron tulipfera	Tulip Tree	Tree	
Lonicera japonica 'Halliana'	Hall's Japanese Honeysuckle	Vining Shrub	
Lonicera subspicata	Wild Honeysuckle	Vining Shrub	Creamy white flowers
Lotus corniculatus	Bird's Foot Trefoil	Ground Cover	Green lush look
Lotus hermannii	Northern Woolly Lotus	Perennial	
Lotus scoparius	Deerweed	Shrub	Native
Lupinus arizonicus	Desert Lupine	Annual	
Lupinus benthamii	Spider Lupine	Annual	
Lupinus bicolor	Sky Lupine	Flowering annual	
Lupinus sparsiflorus	Loosely Flowered Annual Lupine/Coulter's Lupine	Annual	
Lyonothamnus floribundus ssp. Asplenifolius	Fernleaf Ironwood	Tree	
Macadamia integrifolia	Macadamia Nut	Tree	
Mahonia aquifolium 'Golden Abundance'	Golden Abundance Oregon Grape	Shrub	Bright yellow flowers
Mahonia nevenii	Nevin Mahonia	Shrub	Yellow flowers
Malacothamnus Fasciculatus	Chapparal Mallow	Shrub	
Malephora luteola	Training Ice Plant	Ground Cover	Yellow flowers

Botanical Name	Common Name	Plant Form	Remarks
Maytenus boaria	Mayten Tree	Tree	
Melaleuca nesophila	Pink Melaleuca	Shrub	
Metrosideros excelsus	New Zealand Christmas Tree	Tree	
Mimulus spp.	Monkeyflower	Flower	
Mirabilis californica	Wishbone Bush	Perrenial	
Myoporum debile	no common name	Shrub	Excellent along seacoast
Myoporum insulare	Boobyalla	Shrub	
Myoporum parvilfolium	no common name	Ground Cover	
Myoporum 'Pacificum'	no common name	Ground Cover	
Nassella (stipa) lepidra	Foothill Needlegrass	Ground Cover	Native
Nassella (stipa) pulchra	Purple Needlegrass	Ground Cover	Native
Nemophilia menziesii	Baby Blue Eyes	Annual	
Nerium Oleander	Oleander	Shrub	Subject to leaf gall in large groupings
Nolina cismontana	Chapparal Nolina	Shrub	
Nolina spp.	Mexican Grasstree	Shrub	Drought tolerant
Oenothera belandieri	Mexican Evening Primrose	Ground Cover	
Oenothera hookeri	California Evening Primrose	Flower	Drought tolerant
Oenothera speciosa	Show Evening Primrose	Perrenial	
Ophiopogon japonicus	Mondo Grass	Ground Cover	
Opuntia littoralis	Prickly Pear	Cactus	Native
Opuntia oricola	Oracle Cactus	Cactus	Native
Opuntia prolifera	Coast Cholla	Cactus	Native
Osmanthus fragrans	Sweet Olive	Shrub	
Osteospermum fruticosum	Training African Daisy	Ground Cover	
Parkinsonia aculeata	Mexican Palo Verde	Tree	Yellow flowers
Pelargonium peltatum	Ivy Geranium	Ground Cover	
Penstemon spp.	Beard Tongue	Shrub	
Photinia fraseria	no common name	Shrub	
Pistacia chinesis	Chinese Pistache	Tree	
Pittosporum undulatum	Victorian Box	Tree	
Plantago erecta	California Plantain	Annual	
Plantago insularis	Woolly Plantain	Annual	
Plantago sempervirens	Evergreen Plantain	Ground Cover	Grey leaves; drought tolerant
Plantanus racemosa	California Sycamore	Tree	Native
Plumbago auritulata	Plumbago Cape	Shrub	
Popolus fremontii	Western Cottonwood	Tree	Native
Portulacaria Afra	Elephant's Food	Shrub	
Potentilla glandulosa	Sticky Cinquefoil	Subshrub	
Potentilla tabernaemontanii	Spring Cinquefoil	Ground Cover	
Prunus caroliniana	Carolina Cherry Laurel	Shrub/Tree	White flower color
Prunus ilicifolia ssp. Ilicifolia	Holly Leafed Cherry	Shrub	
Prunus lyonii	Catalina Cherry	Shrub/Tree	White flower color
Punica granatum	Pomegranate	Shrub/Tree	
Puya spp.	Puya	Succulent/Shrub	
Phyla nodiflora	Lippia	Ground Cover	
Pyracantha spp.	Firethorn	Shrub	
Quercus agrifolia	Coast Live Oak	Tree	Oak woodland
Quercus berberdifolia	California Scrub Oak	Shrub	Valuable soil binder
Quercus dumosa	Coastal Scrub Oak	Shrub	
Quercus engelmannii	Engelmann Oak	Tree	Open structure
Quercus suber	Cork Oak	Tree	

Botanical Name	Common Name	Plant Form	Remarks
Rhamnus alaternus	Italian Buckthorn	Shrub	
Rhamnus californica	California Coffee Berry	Shrub	Green leaves; drought tolerant
Rhamnus crocea	Redberry	Shrub	Native - Intricate branching
Rhamnus crocea ssp. Ilicifolia	Hollyleaf Redberry	Shrub	
Rhaphiolepis spp.	Indian Hawthorne	Shrub	
Rhus integrifolia	Lemonade Berry	Shrub	Native - May be trimmed up to tree form
Rhus lancea	African Sumac	Tree	25' height
Rhus ovata	Sugarbush	Shrub	
Ribes aureum	Golden Currant	Shrub	
Ribes indecorum	White Flowering Currant	Shrub	
Ribes speciosum	Fuschia Flowering Goosebberry	Shrub	Native
Ribes viburnifolium	Evergreen currant	Shrub	
Romneya coulteri	Matilija Poppy	Shrub	Large showy white flowers
Romneya coulteri 'White Cloud'	White Cloud Matilija Poppy	Shrub	
Rosmarinus officinalis	Rosemary	Shrub	
Salvia greggii	Autums Sage	Shrub	
Salvia sonomensis	Creeping Sage	Ground Cover	
Sambucus mexicana	Mexican Elderberry	Tree	Drought tolerant
Santolina chamaecyparissus	Lavender Cotton	Ground Cover	
Santolina virens	Green Lavender Cotton	Shrub	
Satureja chandleri	San Miguel Savory	Perennial	
Scirpis scutus	Hard Stem Bulrush	Perennial	
Scirpus californicus	California Bulrush	Perennial	Native
Sedum acre	Goldmoss Sedum	Ground Cover	Not recommended on steep slopes
Sedum album	Green Stonecrop	Ground Cover	
Sedum confusum	no common name	Ground Cover	
Sedum lineare	no common name	Ground Cover	
Sedum x rubrotinctum	Pork and Beans	Ground Cover	
Senecio serpens	no common name	Ground Cover	
Sisyrinchium bellum	Blue Eyed Grass	Ground Cover	Drought tolerant
Solanum douglasii	Douglas Nightshade	Shrub	
Solanum xantii	Purple nightshade	Perennial	Native
Stenicarpus sinuatus	Firewheel Tree	Tree	
Strelitzia nicolai	Giant Bird of Paradise	Perennial	
Strelitzia reginae	Bird of Paradise	Perennial	
Symphoricarpos mollis	Creeping Snowberry	Shrub	
Tecoma stans (Stenolobium stans)	Yellow Bells	Shrub/Small Tree	
Tecomaria capensis	Cape Honeysuckle	Ground Cover	Vine
Teucarium chamedrys	Germander	Ground Cover	
Thymus serpyllum	Lemon Thyme	Ground Cover	
Trachelospermum jasminoides	Star Jasmine	Shrub	White flower color
Trichosstems lanatum	Woolly Blue Curls	Shrub	
Trifolium hirtum 'Hyron'	Hyron Rose Clover	Ground Cover	Drought tolerant
Trifolium fragerum 'O'Connor's'	O'Connor's Legume	Ground Cover	
Umbellularia californica	California Laurel	Tree	Very spreading
Verbena lasiostachys	Western Vervain	Perennial	
Verbena peruviana	no common name	Ground Cover	
Verbena spp.	Verbena	Ground Cover	Ornamental flowering
Vinca minor	Dwarf Periwinkle	Ground Cover	Very spreading

Botanical Name	Common Name	Plant Form	Remarks
Vitis girdiana	Desert Wild Grape	Vine	
Vulpia myuros 'Zorro'	Zorro Annual Fescue	Grass	
Westringia fruticosa	no common name	Shrub	
Xannithorrhoea spp.	Grass Tree	Perennial accent/shrub	
Xylosma congestum	Shiny Xylosma	Shrub	
Yucca spp.	Yucca	Shrub	Drought tolerant
Yucca whipplei	Yucca	Shrub	

CHAMBERS GROUP

APPENDIX E – CITY OF NEWPORT BEACH GENERAL PLAN; FIGURE NR2 ENVIRONMENTAL STUDY AREAS

CITY of NEWPORT BEACH
GENERAL PLAN

Figure NR2
ENVIRONMENTAL STUDY AREAS

1. Seminuik Slough
2. Northstar Beach
3. West Bay
4. Upper Newport Bay State Marine Park and Upper Newport Bay Nature Preserve
5. De Anza Bayside Marsh Peninsula
6. San Diego Creek
7. Eastbluff Remnant
8. Big Canyon
9. Newporter North
10. Buck Gully
11. Morning Canyon
12. Newport Beach Marine Life Refuge
13. Castaways
14. Banning Ranch
15. Newport Coast
16. Los Trancos, Pelican Hill
17. Ridge Park
18. Irvine Coast Marine Life Refuge
19. Giant Kelp Bed in Newport Harbor Entrance Channel
20. Bonita Canyon Creek Watershed
21. San Joaquin Reservoir
22. Arroyo Park
23. Coyote Canyon
24. MacArthur and Bison
25. MacArthur/SanMiguel
26. MacArthur/SanJoaquin
27. Spyglass Hill
28. Non-Coastal Buck Gully

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PROJECT NUMBER: 10579-01
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