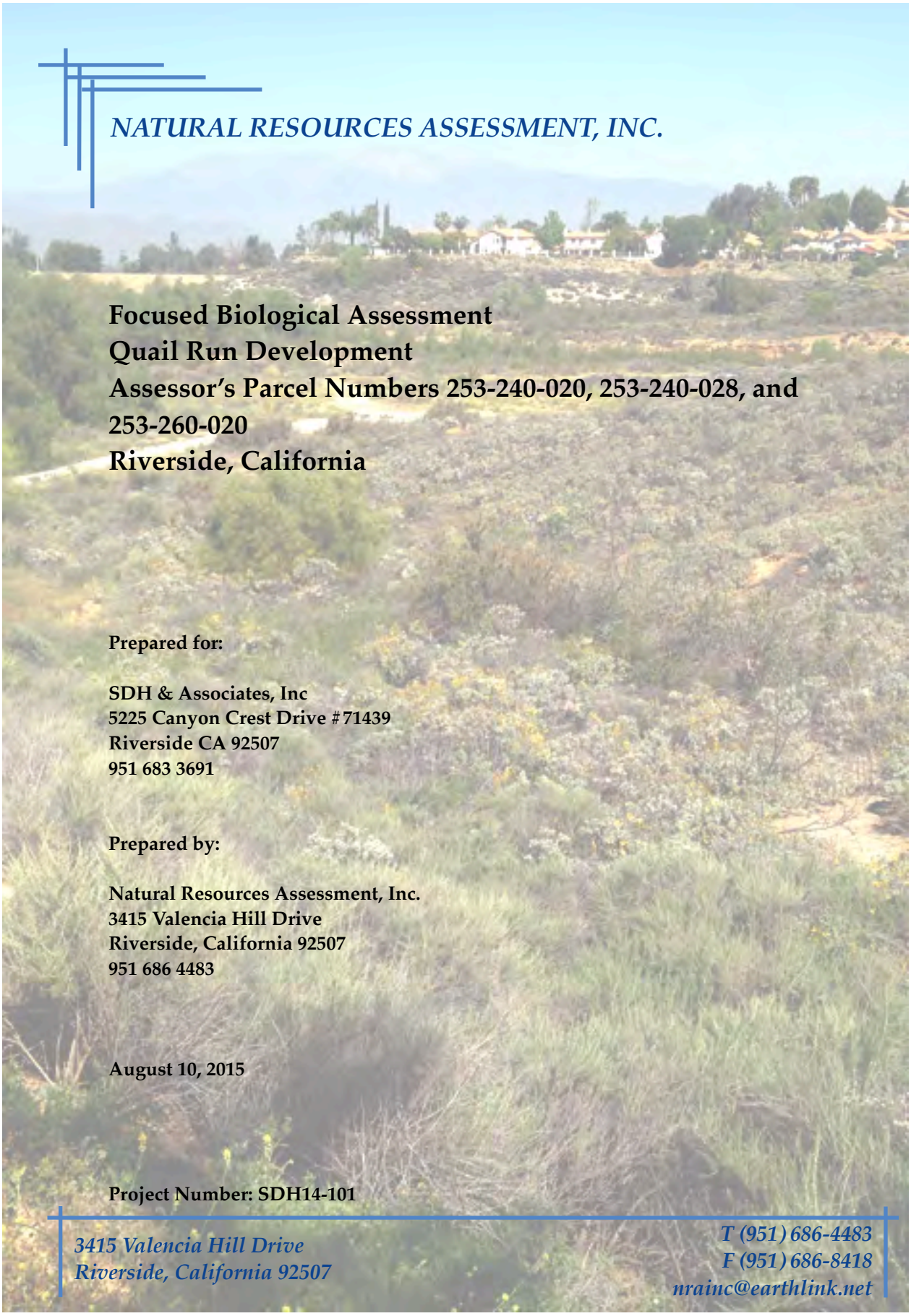

NATURAL RESOURCES ASSESSMENT, INC.

Focused Biological Assessment
Quail Run Development
Assessor's Parcel Numbers 253-240-020, 253-240-028, and 253-260-020
Riverside, California

Prepared for:

SDH & Associates, Inc
5225 Canyon Crest Drive #71439
Riverside CA 92507
951 683 3691

Prepared by:

Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, California 92507
951 686 4483

August 10, 2015

Project Number: SDH14-101

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Riverside, California 92507

T (951) 686-4483
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nrainc@earthlink.net

CERTIFICATION

I hereby certify that the statements furnished below and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

August 10, 2015

Karen Kirtland
Natural Resources Assessment, Inc.

Date

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Appendices

Executive Summary

Natural Resources Assessment, Inc. (NRAI) was contracted by SDH & Associates, Inc. to conduct a focused biological assessment for the proposed Quail Run development project. The biological assessment was required because of the potential presence of sensitive biological resources identified in the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) for the property.

The project is a proposed residential development on 30.9 acres along Central Avenue near the corner with Quail Run in Riverside, California.

Ms. Kirtland of NRAI surveyed the site, evaluated the habitats present, and conducted a jurisdictional waters evaluation. Binoculars were used to aid in the identification of wildlife. All species identified by sight, call or sign (burrows, scat, tracks, etc.) were recorded.

Project development will result in the loss of coastal sage scrub, alluvial fan scrub, willow and mulefat woodlands, mulefat scrub and landscape plant communities, and the associated wildlife habitats.

Coastal sage scrub occupies 6.21 acres within the property boundaries. The proposed development and borrow site will temporarily impact 0.51 acres and permanently impact 2.97 acres. These impacts are not considered to be significant under the MSHCP, which has set aside coastal sage scrub habitat for protection that does not include this area.

Alluvial fan scrub occupies 6.78 acres within the project boundary. The project construction and excavation of the borrow site will impact temporarily impact 4.93 acres and permanently impact 0.81 acres. This impact is significant and will be mitigated by the replacement of the same habitat on site.

Willow-mulefat woodlands occupies 3.98 acres within the property boundary, and mulefat scrub occupies a total of 1.81 acres.

Riverine (non-vegetated) occupies a total of 2.0 acres.

The excavation of the borrow site will temporarily impact 0.08 acres of the willow-mulefat woodlands, and 0.29 acres of the mulefat scrub. These impacts are significant and will be mitigated by the replacement of the same habitats on site.

The excavation of the borrow site will temporarily impact 0.07 acres of riverine habitat, which will be replaced during the recontouring of the borrow site area.

All permanent impacts will be the result of the construction of the apartment complex and associated infrastructure. All temporary impacts will be the result of borrow site development and access.

The loss of alluvial fan scrub, willow-mulefat woodland, willow scrub and riverine habitat will be mitigated on site as part of the borrow site rehabilitation. The borrow site area will be contoured to maximize surface area for the restoration of these habitats.

In addition, protective measures, such as runoff or spill, should be implemented to avoid indirect impacts to these habitats.

No suitable habitat exists and no sightings were made on site of the smooth tarplant, round-leaved filaree, Nevin's barberry or burrowing owl.

Standard Best Management Practices will be followed per the requirements of the MSHCP to avoid and minimize impacts to adjacent wildlands to the north of the proposed development.

The project proponent will need to pay the SKR fee required under the Stephens Kangaroo Rat Habitat Conservation Plan.

The property includes 1.42 acres at the western end of Criteria Cell 719 that will be impacted by the project.

The project may have both direct and indirect construction-related impacts to raptor and migratory bird use of the site. The project proponent will need to meet the requirements identified in this report, as well as any additional conditions placed on the development by the City, to avoid and minimize impacts to these resources.

There are potential impacts to nesting birds. If construction will occur during the nesting season (February through September), we recommend a nesting bird survey be conducted and avoidance of nests at required distances be observed.

Impacts to Quail Park, northeast of the site should be addressed as part of the larger mitigation required for impacts to MSHCP Wildlands, Criteria Cell 719, jurisdictional waters, and nesting habitats along the Box Spring Canyon channel.

1.0 Introduction

Natural Resources Assessment, Inc. (NRAI) was contracted by SDH & Associates, Inc. to conduct a focused biological assessment for the proposed 30.9 acre Quail Run development project.

The biological assessment was required because of the potential presence of sensitive biological resources identified in the Western Riverside County Multiple Species Habitat Conservation Plan (MSCHP) for the property.The MSHCP also requires surveys for the presence of jurisdictional waters, Riparian/Riverine Areas/Vernal Pools, fairy shrimp, and the preparation of a Determination of Biological Equivalent or Superior Preservation report if these sensitive habitats are identified and will be impacted by the project.

2.0 Site Location and Project Description

The project area is located northwest of the corner of Quail Run Road and Central Avenue in Riverside, California (Figures 1 and 2). It is in Section 1, Township 3 south, Range 5 west, San Bernardino base and meridian (Figure 1).

The proposed project is composed of two components. The first is the development of approximately 13 acres of the southeastern portion into an apartment complex consisting of thirteen apartment buildings, parking spaces, and common areas (shown on Figure 3 as "Permanent Impacts – Development Area). The second component is grading of an approximately 6.33 acre borrow site (shown on Figure 3 as "Temporary Impacts – Borrow Site and Site of Future Mitigation Areas") to provide dirt for the apartment pads, parking lots, and roads. The project proposes earthwork will be balanced on site.

The Box Springs Canyon channel that runs through the center of the property is collected into a flood control basin owned by the Riverside County Flood Control District (District). Prior to development of the region, it appears the Box Springs Canyon channel connected downstream to the Tequesquite Arroyo and from there to the Santa Ana River.

Periodically, large storms have transported debris and sediment from the four square mile watershed upstream of the property. This material is deposited in the lowest portions of the property and is regularly removed to maintain the capacity of the reservoir for flood control purposes.

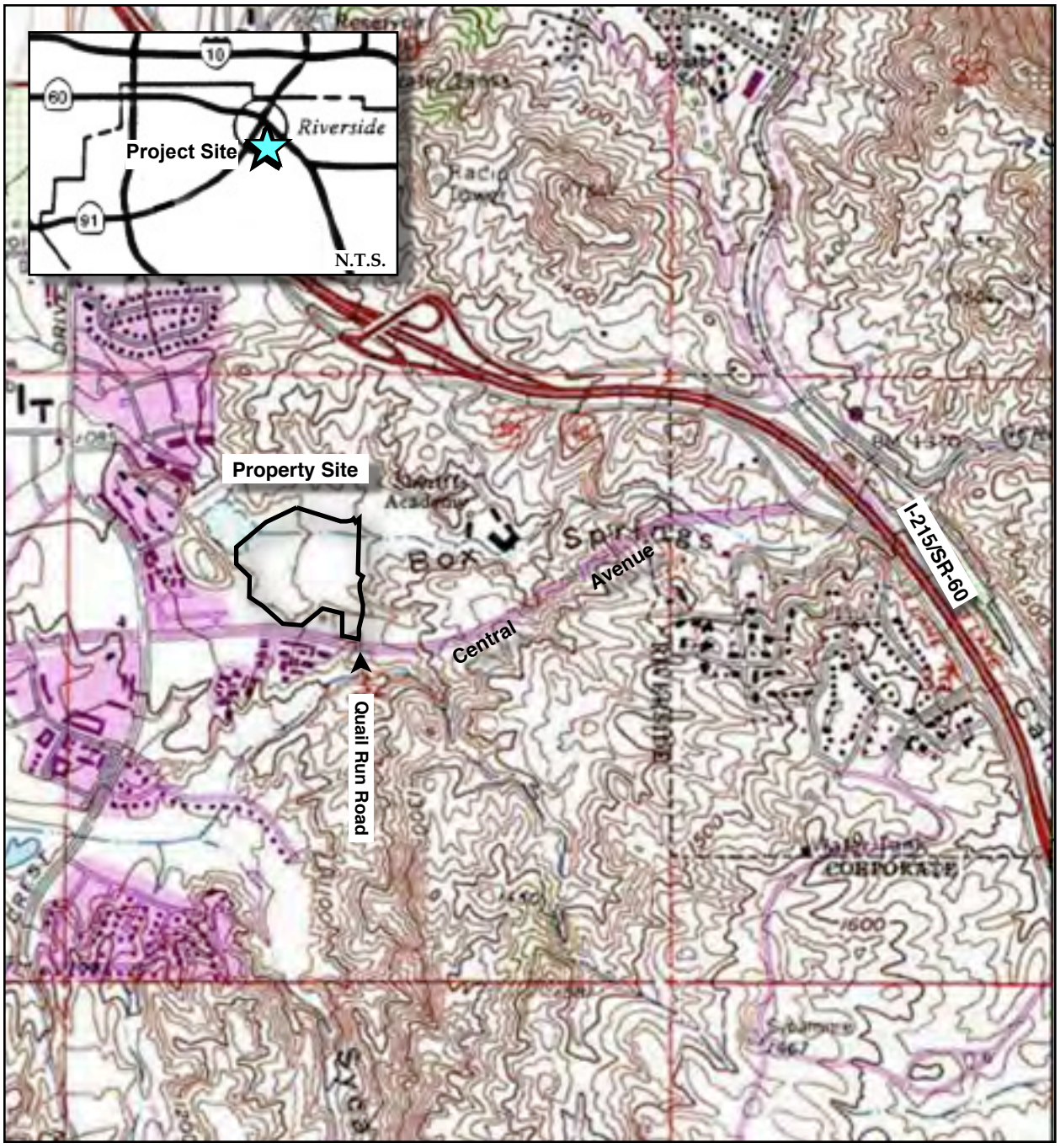
3.0 Methods

3.1 Data Review

A data review was conducted to provide information on sensitive species within the vicinity of the project. This review included biological texts on small mammal species, as well as general texts and other documents addressing habitat requirements and similar information. NRAI also reviewed other available technical information on the biological resources of the site. We used the information to focus our survey efforts in the field.

NRAI conducted a data search for information on plant and wildlife species known occurrences within the vicinity. This review included biological texts on general and specific biological resources, and those resources considered to be sensitive by various wildlife agencies, local governmental agencies and interest groups. Information sources included but are not limited to the following:

- Information provided by the Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) for the project area, Assessor's Parcel Number (APN) 253-240-020, 253-240-028, and 253-260-020.
- U.S. Army Corps 404 requirements, State Water Resources Control Board requirements, California Department of Fish and Wildlife 1602 requirements.



Map Base: Riverside East 1980 7.5′
USGS topographic quadrangle
Inset Map: Thomas Bros 2006

Figure 1. Project Location and Site Vicinity

Map Base: Google Earth 2015

Figure 2. Project Aerial

Property Boundary

Box Springs Canyon Channel

N

Feet
(approximate)

0 103 206

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California

Figure 3. Development and Borrow Site Areas
Temporary and Permanent Impacts
Quail Run Apartments
Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California

Map revised June 26, 2015. G:\2014\14-0236\GIS\Impact Areas aerial.mxd

Sources: SDH Inc, April 2015;
USDA NAIP, 2014.

0 100 200 300 400 Feet

Plate 2 - Temporary and Permanent Impacts

Quail Run Apartments

ALBERT A. WEBB ASSOCIATES

- General texts and other documents regarding potential resources on the project

NRAI used the information to focus our survey efforts in the field. Please see References, Section 6.0 for a complete listing of documents reviewed.

3.2 Western Riverside County Multiple Species Habitat Conservation Plan

The final MSHCP was approved by the County of Riverside Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004, and implementation of the MSHCP began on June 23, 2004. The MSHCP is intended to balance the demands of the growth of western Riverside County with the need to preserve open space and protect species of plants and animals that are threatened with extinction. The overall goals of the Western Riverside County MSHCP are as follows:

- Promote the biological viability and recovery of western Riverside County's ecosystems and habitats and species dependent thereupon, toward a goal of reducing the need to list additional species in the future.
- Provide a comprehensive means to coordinate, standardize, streamline, and ensure closure regarding mitigation requirements of the ESA, CESA, and other applicable laws and regulations related to biological and natural resources within the plan area.
- Assure property owners, local governments, and other affected parties that conservation measures undertaken for species and wildlife habitat are adequately covered by the Western Riverside County MSHCP and will satisfy mitigation requirements of the ESA, CESA, and other applicable laws and regulations concerning impacts to those covered species and habitats.
- Establish and emphasize the use of incentives to encourage property owners to voluntarily conserve habitats and species as an alternative to regulatory mandates.
- Facilitate economic growth and prosperity so that it occurs in a manner consistent with the conservation of biological resources within the plan area.
- Provide the basis for issuance of incidental take permits for species, both listed and unlisted, that are adequately covered by the Western Riverside County MSHCP.
- Establish consistent mitigation standards for covered species for potential application by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA.

The Western Riverside County MSHCP addresses incidental take of "covered" species. Of the 146 covered species addressed in the Western Riverside County MSHCP, 118 are considered to be adequately conserved simply by implementing the conservation program. Incidental take of these 118 species is permitted by the Western Riverside County MSHCP. The remaining 28 covered species are considered to be partially conserved – they would be adequately conserved when certain additional conservation requirements are implemented. The additional requirements are identified in the species-specific conservation objectives for those 28 species.

To provide adequate conservation of the covered species, the Western Riverside County MSHCP is designed to facilitate the assembly of an approximate 500,000-acre conservation area. The conservation area is expected to include approximately 347,000 acres of public and quasi-public lands, and approximately 153,000 acres of acquired private lands that are permanently protected and managed for the benefit of the covered species. Local permittees, including Riverside County and the participating incorporated cities, must collectively contribute approximately 97,000 acres of acquired private lands to the conservation area. The acquisition of these lands is funded by dedications and fee payments on private development.

3.3. Field Assessment

Ms. Karen Kirtland of NRAI conducted surveys on foot of the proposed development area on April 11, 2014. She evaluated the surrounding habitats, making notes on the general and sensitive biological resources present and taking representative photographs. The surveys included focused habitat assessment surveys for species covered under the MSHCP survey requirements.

Ms. Kirtland conducted a second survey on June 2, 2014, to map the large stand of riparian habitat using a GPS to more precisely delimit the boundary. The intention was to provide more accurate data on the extent of this riparian habitat relative to the proposed project grading line.

Ms. Kirtland conducted a field assessment on January 9, 2015 of the borrow site to determine the biological resources and to map existing drainages in this area. This was followed by a field meeting on January 12 with representatives of the resource agencies to review the findings and discuss suitable mitigation measures for impacts to sensitive resources.

Ms. Kirtland conducted a second field assessment on February 2, 2015 to map the limits of the plant communities of the remainder of the property outside of the development area to identify the plant communities present. The purpose was to provide a comparison of existing habitat to determine how much would be lost to the borrow site.

4.0 Results

4.1 Weather

April 11, 2014 Weather at the beginning of the survey was 70 degrees Fahrenheit, no wind and no cloud cover. Weather at the end of the survey was 82 degrees Fahrenheit, winds one to two miles per hour from the north, and partly cloudy (30 percent) skies.

June 2, 2014 Weather at the beginning of the survey was 61 degrees Fahrenheit, no wind and no cloud cover. Weather at the end of the survey was 81 degrees Fahrenheit, winds five miles per hour from the west, and clear skies.

January 9, 2015 Weather at the beginning of the survey was 60 degrees Fahrenheit, no wind and scattered cloud cover. Weather at the end of the survey was 65 degrees Fahrenheit, winds three miles per hour from the east, and clear skies.

January 12, 2015 Weather at the beginning of the survey was 51 degrees Fahrenheit, no wind and mostly cloudy. Weather at the end of the survey was 57 degrees Fahrenheit, winds three miles per hour from the west, and mostly cloudy.

February 2, 2015 Weather at the beginning of the survey was 53 degrees Fahrenheit, northeast winds of five miles per hour and no cloud cover. Weather at the end of the survey was 72 degrees Fahrenheit, winds calm, and clear skies.

4.2 Topography and Soils

The topography of the site varies from flat along the Box Springs Canyon channel and upper terraces, to hilly north and south of the channel (Figures 1 and 2). The Box Springs Canyon Channel is surrounded by steep banks on either side at the eastern end, tapering to at-grade slopes at the western end where it enters a flood controlled basin.

There are six soils that occur on the property (Figure 4, Soil Survey Staff 2014). They are Buren fine sandy loam, eroded, Cieneba sandy loam, eroded, Cieneba rocky loam, eroded, Hanford coarse sandy loam, Terrace escarpments, and Tujunga loamy sand, channeled.

Buren fine sandy loam, eroded, is an alluvium soil from mixed sources, found mainly on alluvial fans. It is a moderately well drained, non-saline to slightly saline soil. On the project property, it is restricted to the lower slopes along the southern boundary.

Cieneba sandy loam, eroded, is a residuum soil weathered from igneous rock, found on hills. It is a non-saline, somewhat excessively drained soil. It is restricted to part of the hillside in the north-central area of the property.

Cieneba rocky loam, eroded, is also a residuum soil weathered from igneous rock, found on hills. The grain size in this soil tends to be larger, rock-sized particles. Cieneba rocky loam, eroded, is a non-saline, somewhat excessively drained soil restricted to a short section of the hillside along the western boundary.

Hanford coarse sandy loam, channeled, is an alluvium derived from granite, found on alluvial fans. It is a non-saline, well-drained soil found on the lower flat areas south and north of the Box Springs Canyon channel through the property.

Terrace escarpments are soils made up of alluvium derived from mixed sources, found on terraces. On the property, it is limited to the upper flat areas south of the Hanford coarse sandy loam soils and Box Springs Canyon channel area.

Tujunga loamy sand, channeled, is a sandy alluvium derived from granite, found on floodplains and alluvial fans. It is a non-saline, excessively drained soils. It forms the central portion of the property, dominating the Box Springs Canyon channel and flood area.

4.3 Hydrology

The portion of this property proposed for development, along with most of the rest of the property, has not been used for any purpose historically and has drained naturally to the downstream reservoir. Some of the lowest portions of the property have historically (since the construction of the dam) been routinely maintained by the District. Periodically, large storms have transported debris and sediment from the four square mile watershed upstream of the property. This material is deposited in the lowest portions of the property and is removed to maintain the capacity of the reservoir for flood control purposes.

Due to the small size of the project relative to the entire watershed, and due to onsite storm water management measures that are designed to mimic pre-project flows, there will be a less than significant difference in the pre-project and post-project flows.

4.4 Land Uses

The property is located in a predominately suburban residential development area of Riverside (Figure 2). Central Avenue forms the southern border, and residential housing is on the east and north. A flood control basin forms the western boundary.

4.5 Plant Communities

There are several plant communities within the property (Figure 5). Coastal sage scrub forms the dominant scrub community on the southern and northern hillsides of the project, occupying 6.21 acres (Photo 1). The dominant species in this plant community are California sagebrush (*Artemisia californica*), desert brittlebush (*Encelia farinosa*), and California buckwheat (*Eriogonum fasciculatum*). Overall shrub cover was close to 90 percent.

Information Source: Soil Survey Staff,
Natural Conservation Soil Service

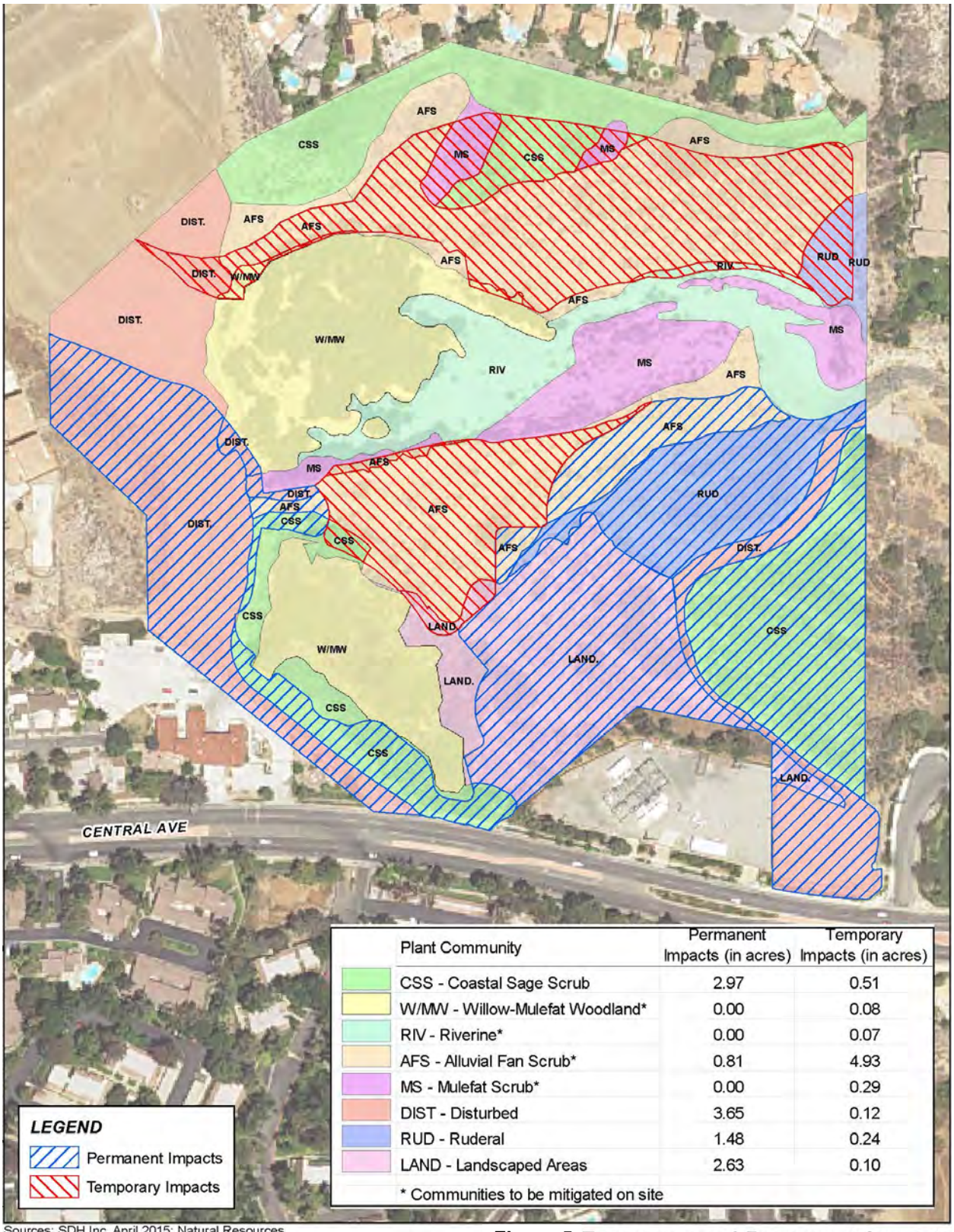
Figure 4. Project Soils

N

Feet
(approximate)

0 113.5 227

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California



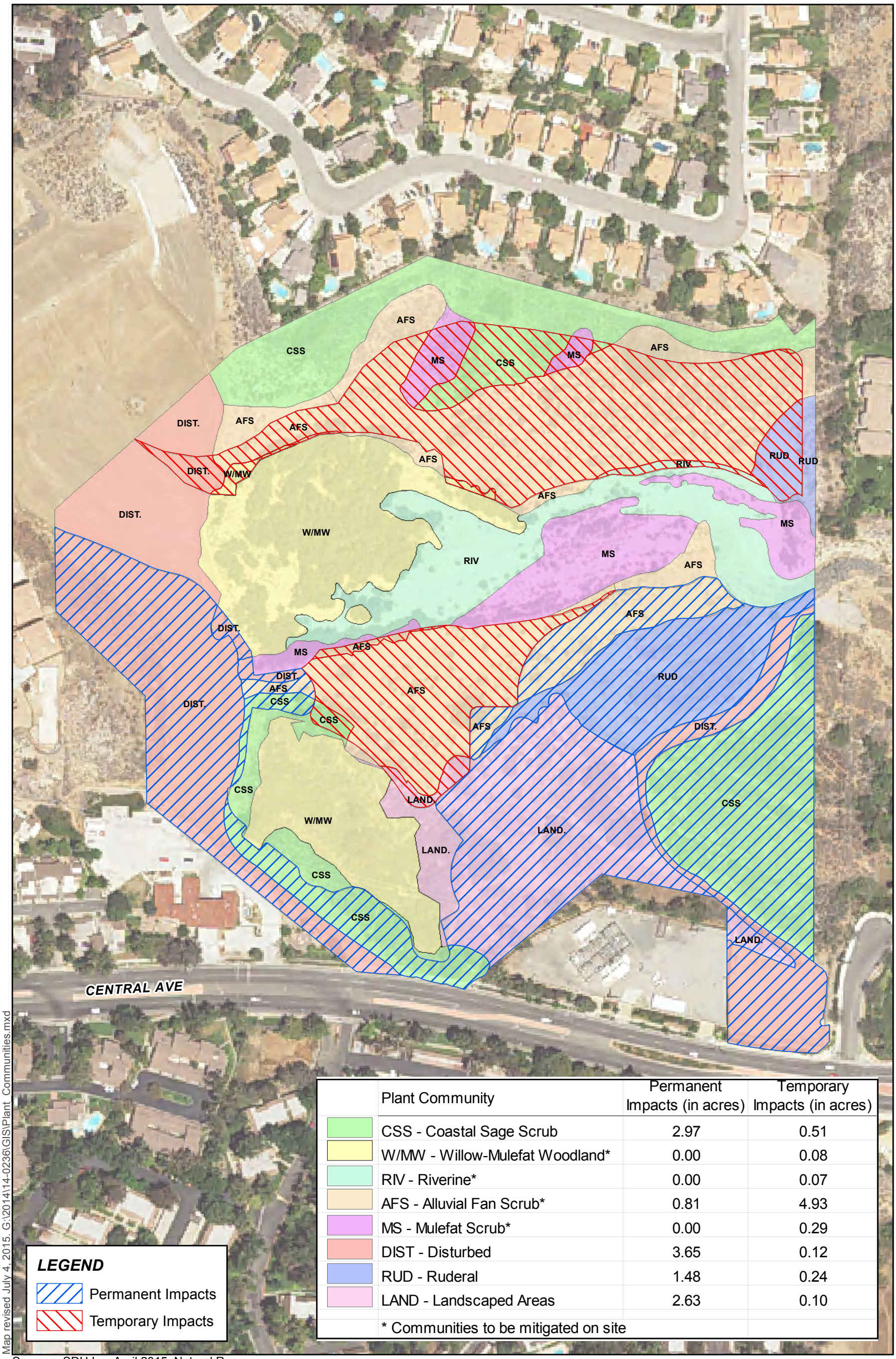
Plant Community	Permanent Impacts (in acres)	Temporary Impacts (in acres)
CSS - Coastal Sage Scrub	2.97	0.51
W/MW - Willow-Mulefat Woodland*	0.00	0.08
RIV - Riverine*	0.00	0.07
AFS - Alluvial Fan Scrub*	0.81	4.93
MS - Mulefat Scrub*	0.00	0.29
DIST - Disturbed	3.65	0.12
RUD - Ruderal	1.48	0.24
LAND - Landscaped Areas	2.63	0.10
* Communities to be mitigated on site		

Sources: SDH Inc, April 2015; Natural Resources Assessment, Inc., June 2015; USDA NAIP, 2014.

0 100 200 300 400 Feet

Figure 5. Temporary and Permanent Impacts and Plant Communities
Quail Run Apartments

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California



Plant Community	Permanent Impacts (in acres)	Temporary Impacts (in acres)
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RIV - Riverine*	0.00	0.07
AFS - Alluvial Fan Scrub*	0.81	4.93
MS - Mulefat Scrub*	0.00	0.29
DIST - Disturbed	3.65	0.12
RUD - Ruderal	1.48	0.24
LAND - Landscaped Areas	2.63	0.10
* Communities to be mitigated on site		

Map revised July 4, 2015. G:\2014\14-0236\GIS\Plant Communities.mxd

Sources: SDH Inc, April 2015; Natural Resources Assessment, Inc., June 2015; USDA NAIP, 2014.

0 100 200 300 400 Feet

Plate 2 - Temporary and Permanent Impacts and Plant Communities

Quail Run Apartments

ALBERT A. WEBB ASSOCIATES

Photo 1. Coastal sage scrub plant community.

The lower terraces of the property on either side of the Box Springs Canyon channel are occupied by alluvial fan scrub composed almost entirely of scalebroom (*Lepidospartum squamatum*) (Photo 2). Other plant species in this include scattered stands of mulefat (*Baccharis salicifolia*) (Photo 3), California buckwheat, Jimson weed (*Datura wrightii*) and castor bean (*Ricinus communis*). Alluvial fan scrub occupies 6.78 acres.

The eastern part of the upper terrace supports a mixed plant community of non-native species such as Peruvian pepper-tree (*Schinus molle*), eucalyptus *(Eucalyptus* sp.) and native species such as tarragon (*Artemisia dracunculus*) and cudweed aster (*Lessingia filaginifolia*) This plant community (identified as Landscaped Areas on Figure 5) occupies 3.04 acres (Photo 4).

The Box Springs Canyon channel is occupied by mulefat stands and at the western end by a willow (*Salix laevigata*) - mulefat (*Baccharis salicifoilia*) plant community. There is also a large mixed stand of cattails (*Typa latifolia*) and a mulefat - willow plant community in the southwestern corner of the project. Mulefat scrub occupies 1.81 acres. Willow-mulefat woodland occupies 3.98 acres (Photos 5 and 6).

A list of all plant species observed is provided in Appendix A.

4.6 Wildlife

Bird species observed included common species such as house sparrow (*Passer domesticus*), house finch (*Carpodacus neomexicanus*) and northern mockingbird (*Mimus polygottos*). Other species observed included California quail (*Callipepla californica*), Say's phoebe (*Sayornis saya*), and northern rough-winged swallow (*Stelgidopteryx ruficollis*) (in migration).

Photo 2. Scale-broom plant community.

Photo 3. Scale-broom mixed with mulefat.

Photo 4. Pepper tree stand.

Photo 5. Dense mulefat stands.

Photo 6. Willow - mulefat woodland.

Reptile species observed included side-blotched lizard (*Uta stanburiana*) and western fence lizard (*Sceloporus occidentalis*). Mammal species observed were limited to Botta's pocket gopher (*Gopherus bottae*), California ground squirrel (*Spermophliud beecheyi*) and Audubon's cottontail (*Sylvilagus audubonii*). No amphibian species were observed.

A list of all wildlife species observed is provided in Appendix A.

4.7 MSHCP Consistency Analysis

The property is located within the MSHCP Conservation Area and is partially within MSHCP Criteria Cell 719. Section 6 of the MSHCP states that all projects must be reviewed for compliance with plan policies pertaining to Riparian/Riverine resources, narrow endemic plant species, urban/wildlands interface, and additional survey needs as applicable.

The Western Riverside County MSHCP identified the project study area has potentially having habitat for three Criteria Area Species. These species are Nevin's barberry (*Berberis nevinii*), smooth tarplant (*Centromadia pungens*) and round-leaved filaree (*Erodium macrophyllum*), as well as habitat for burrowing owl (*Athene cunicularia*). In addition, the Western Riverside County MSHCP requires an assessment of riverine and riparian habitats, as well as vernal pools and the potential for fairy shrimp habitat to be present in the project study area.

Surveys are not required for Narrow Endemic Plant species within the project study area due to a lack of suitable habitat or the absence of the species identified Please see Section 4.7.2.

The project's relationship to the MSHCP Reserve Assembly is discussed in sections 4.7.6 and 5.2.5 of this document.

4.7.1 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2)

4.7.1.1 Riparian/Riverine Areas

Riparian/Riverine Areas are defined by the MSHCP as "*lands which contain Habitat dominated by tress [sic], shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year*".

Project Findings

The Box Springs Canyon channel that crosses through the property (north of the project area) has a stand of willow-mulefat riparian woodland just east of the flood basin, and scattered stands of mulefat scrub riparian along the channel (Figures 1, 5). There is also a dense mixed stand of mulefat-willow riparian near the southwestern corner of the property.

The willow-mulefat riparian woodlands occupies a total of 3.98 acres within the project area, and mulefat scrub riparian occupies a total of 1.81 acres.

Alluvial fan scrub (riparian) occupies a total of 6.78 acres, mostly within the upper terrace area of the property.

Riverine (non-vegetated) occupies a total of 2.0 acres.

Table A provides the acreages per riparian and riverine habitat type.

Table A. Riparian and Riverine Acreages

Habitat Type	Acres
Riparian	
Willow-mulefat woodland	3.98
Mulefat scrub	1.81
Alluvial fan scrub	6.78
Total Riparian	**12.57**
Total Riverine	**2.00**
Total Riparian and Riverine	***14.57***

The riparian habitats on site provide shelter, shade and food for wildlife. The willow-mulefat and mulefat scrub riparian habitats provide food, shade and shelter for riparian bird and mammal species, and provide food resources for upland birds, mammals and reptiles (Faber, et al 1989). They also provide for filtration and cleaning of water that runs along the Box Springs Canyon channel.

The alluvial fan scrub habitat provides food, shelter and shade for upland birds, reptiles and mammals. This habitat does not generally provide filtration of water that runs through the site, except for occasional storms.

The riverine habitat provides water resources for all forms of wildlife, including amphibians. The sandy soils associated with the riverine habitat filter the water that runs along the Box Springs Canyon channel.

Both the riverine and willow-mulefat and mulefat scrub riparian habitats provide for nutrient recycling within the general area. The riparian plants take up and store nutrients from the water flowing through the Box Springs Canyon Channel, as well as occasional runoff from rains and Central Avenue. These plants then return the nutrients to the soil when they die and decay. In addition, the water that flows through the riverine area cycles these nutrients through the soils and downstream.

The Box Spring Canyon channel may at one time have been wider, with the result that flood waters would have been spread over a wider area, resulting in a less focused flow. This would have resulted in a wider area for filtration of the water through the soils, as well as more nutrient recycling.

4.7.1.2 Vernal Pools

Vernal pools are defined by the MSHCP as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season. . . . Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records" (Riverside County Transportation and Land Management Agency, website address: http://www.rctlma.org).

Project Findings

There is no evidence of ponding or areas suitable for ponding of vernal pools within the project boundary. The loamy and rocky soils of the property are not suitable for the development of vernal pools and no vernal pools are expected to occur on site.

4.7.1.3 Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) is found in grasslands in ponded areas such as vernal pools, cattle watering holes, basins, etc. Fairy shrimp are confined to temporary pools that fill in spring and evaporate by late spring to early summer.

In southern California, this species is found primarily in the interior of western Riverside County, central Santa Barbara County, and eastern Orange County and more recently in Los Angeles County.

Since most pools preferred by fairy shrimp are found in flat areas, many have been lost to agricultural activities and residential development. The limited extent of available habitat, plus the ongoing loss has resulted in the vernal pool fairy shrimp being listed as threatened by the USFWS.

Project Findings

As described in the vernal pool section (4.7.1.2) there is no water or evidence of ponding. The soils are unsuitable for the formation of long-term ponds, and no obligate wetland perennial plant species were observed. There are no other sources of standing water, such as cattle ponds or watering holes that would provide suitable habitat for the vernal pool fairy shrimp.

4.7.1.4 Riverside Fairy Shrimp

Riverside fairy shrimp (*Streptocephalus woottoni*) are known only from ephemeral pools in farmlands and similar open, flat terrain. Fairy shrimp are confined to temporary pools that fill in spring and evaporate by late spring to early summer.

The Riverside fairy shrimp is known only from southern Orange and western Riverside and San Diego Counties. Ongoing farming and development in these areas has resulted in the loss and degradation of these habitats. Therefore, the USFWS has listed the Riverside fairy shrimp as endangered.

Graphic courtesy of Riverside County TLMA GIS, 2014.
Aerial Base 2011

Figure 6. Proximity to Criteria Cells

Criteria Cell

N

Feet (approximate)

0 1007 2014

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-060-020
Riverside, California

Project Findings

As described in the vernal pool section (4.7.1.2) there is no water or evidence of ponding. The soils are unsuitable for the formation of long-term ponds, and no obligate wetland perennial plant species were observed. There are no other sources of standing water, such as cattle ponds or watering holes that would provide suitable habitat for the Riverside fairy shrimp.

4.7.2 Additional Survey Needs and Procedures (Section 6.3.2)

Please see Appendix B for the definitions of listing status under the USFWS, California Department of Fish and Wildlife (CDFW) and California Native Plant Society (CNPS) listings.

4.7.2.1 Smooth Tarplant

Smooth tarplant (*Centromadia pungens*) is an annual herb that often grows in disturbed sites near the coast. This species occupies alkaline soils at the edges of marshes, swamps, playas and chenopod scrub. Preferred habitats include riparian areas, valley and foothill grasslands, and sometimes vernal pool margins. It is found throughout southern California and Baja California.

The smooth tarplant blooms from April through September at elevations ranging from sea level to 600 meters (sea level to 1600 feet). Smooth tarplant is not listed by the USFWS or the California Department of Fish and Wildlife (CDFW). It is on list 1B.1 of the CNPS Inventory.

Project Findings

No smooth tarplants were observed during the survey. Suitable alkaline soils do not occur on the site, and this species is not expected to be present.

4.7.2.2 Round-leaved Filaree

Round-leaved filaree (*Erodium macrophylla*) is an annual herb that occurs in clay soils of cismontane woodland and valley and foothill grassland plant communities. Round-leaved filaree is found mostly in foothill areas up and down the coast of California at elevations from 15 to 1200 meters (49 to 4000 feet). It flowers from March to May.

Historical localities from the late 1890s include Menifee and near Temecula. The nearest recent population from 1976 at Lake Perris. Round-leaved filaree is threatened by the loss of habitat to agriculture and conversion to development. It is not listed by the USFWS or the CDFW. It is on List 1B.1 of the CNPS Inventory.

Project Findings

The April 11, 2014, survey was conducted during the flowering period for round-leaved filaree, and it was not observed. The soils on site range from fine to rocky loams, and include little to no clay components. The site does not currently support the habitats preferred by this species. Round-leaved filaree is not expected to be present.

4.7.2.3 Nevin's Barberry

Nevin's barberry (*Berberis nevinii*) is a perennial shrub herb that occurs on clay, sandy and gravelly soils in cismontane woodland, coastal sage scrub chaparral and riparian scrub plant communities. This species is found in scattered populations throughout San Bernardino and Riverside counties, and possibly in Los Angeles County. This plant is a popular cultivar and has been documented from residential areas. Known wild populations include the hills south of Loma Linda in San Bernardino County and in the area around Vail Lake, Riverside County at elevations below 2000 feet. The flowering period is from March through June.

Nevins is threatened by the loss of habitat from fire, erosion and conversion to development. It is listed as endangered by both the USFWS or the CDFW. It is on List 1B.1 of the CNPS Inventory.

Project Findings

Nevin's barberry is observable year round. It was not observed during any of the field surveys. The site does not currently support Nevin's barberry.

4.7.2.4 Burrowing Owl

The burrowing owl (*Athene cunicularia hypogea*) is a resident species in lowland areas of southern California (Garrett & Dunn 1980). It prefers open areas for foraging and burrowing, and is found widely scattered in open desert scrub. This species is scarce in coastal areas, being found mainly in agricultural and grassland habitats. The largest remaining numbers are in the Imperial Valley, where it is common in suitable habitat adjacent to the agricultural fields.

The burrowing owl prefers large flat open areas for nesting and hunting (Garrett & Dunn 1981). This species lives in burrows constructed by other ground-dwelling species in grassy or sparse shrubby habitat. Burrowing owls also take over other types of burrows, including manmade objects such as pipes. This species forages low over the ground surface for insect prey, and seldom flies very high in the air.

As a result of coastal development, the burrowing owl is declining in coastal habitats. The CDFW has designated the burrowing owl as a California Species of Special Concern (CSC). These species are so designated because "declining population levels, limited ranges and/or continuing threats have made them vulnerable to extinction." (California Department of Fish and Wildlife 2012).

Project Findings

The entire project site is within a designated survey area for the burrowing owl as required by the MSHCP. Habitat for burrowing owl was assesssesd over the entire project area and adjacent habitats (out to 500 feet where accessible) in accordance with MSHCP "Burrowing Owl Survey Instructions". The assessment included looking for burrowing owl burows, whitewash, pellets, animal remains and other burrowing owl indicators.

Burrowing owls need sparse shrubby habitat (such as grasslands and desert scrub) to be able to fly low and search for food. The site is mostly covered in dense (more than 50 percent) shrub and tree cover.

The only open areas are existing roads, a small graded pad along Central Avenue, and the bottom of the Box Springs Canyon channel, and the scoured area maintained by the District. None of these three areas had sign or burrows belonging to or available for use by burrowing owl.

The existing roads extend from Central Avenue and down along the bluff along the Box Springs Canyon channel. The surface of the roads are hardpacked and unsuitable for occupancy by burrowing owl. These roads were surveyed and no sign of burrows or sign of burrowing owl were observed.

The small graded pad has a hard-packed surface unsuitable for the development of burrows, and is immediately adjacent to Central Avenue, the existing apartment complex to the east and a power substation to the west. North of this pad is dense coastal sage scrub habitat, unsuitable for use by burrowing owl. No burrows or sign of burrowing owl was observed.

The bottom of the Box Springs Canyon Channel and the scoured flood area maintained by the District are composed of loose sand, also unsuitable for the construction of burrows, as well as being subject to periodic flooding. This area was surveyed and no sign of burrowing owl was observed.

No suitable nesting or foraging habiitat was found and no sign of burrowing owl was found. There were no ground squirrel burrows found that would be suitable for burrowing owl, are no suitable human-built structures that might function as burrows.

No burrowing owls are expected to use the project site because no suitable nesting or foraging habitat is present.

4.7.3 Guidelines Pertaining to the Urban/Wildland Interface (Section 6.1.4)

The Urban/Wildland Interface guidelines of the MSHCP address indirect effects associated with locating development in the MSHCP Conservation Area near wildlands or other open space areas.

Project Findings

The property is surrounded by a variety of land uses, including residential development, utilities and flood control facilities, and open space. The project proponent will need to implement the Interface Guidelines for the project in areas adjacent to the open space.

4.7.4 Covered Activities (Section 7.0)

The Western Riverside County MSHCP includes a number of public and private activities that may or may not be subject to additional requirements, depending upon their location. Covered Activities that are outside Criteria Areas and Public/Quasi-Public Lands as identified in the MSHCP are permitted under the Plan, "subject to consistency with MSHCP policies that apply outside the Criteria Area (such as policies related to Riparian and Riverine Areas and Vernal Pools, Narrow Endemic Plant Species, Additional Survey Needs and Procedures, and Funding/Fee Issues)".

Project Findings

The property is subject to additional policies for those portions of the property outside the Criteria Cell. These requirements are discussed in Section 5.0.

4.7.5 Habitat Conservation Plan for the Stephens Kangaroo Rat

The species objectives for the Stephens kangaroo rat (SKR) in the Western Riverside MSHCP were designed to incorporate the objectives and be consistent with the Long-Term Stephens Kangaroo Rat Habitat Conservation Plan.

Project Findings

The project is located within the SKR fee area.

4.7.6 Project Relationship to Reserve Assembly, Cities of Riverside/Norco (Section 3.3.17)

Approximately 1.42 acres of the project site is located within Subunit 2 (Sycamore Canyon/Box Springs West) of the Cities of Riverside and Norco Area Plan, specifically within Criteria Cell 719 (Figure 6). The MSCHP identified specific areas for protection through the Conservation Area. Section 3.3.17 identifies "target acreages, applicable Cores and Linkages, Area Plan Subunits and Criteria for the Cities of Riverside/Norco."

The MSHCP identifies the goals and issues for Subunit 2 as follows:

- Target acreage range for Additional Reserve Lands within Subunit: 15-40 acres
- There are two Cells within this Subunit: 634 and 719 (note a portion of the project site is within Cell 719)The MSHCP identifies the goals and issues for Subunit 2 as follows:

- Target acreage range for Additional Reserve Lands within Subunit: 15-40 acres
- One Cell within this Subunit: 719
    - Planning Species:
    - Bell's sage sparrow
    - loggerhead shrike
    - Southern California rufous-crowned sparrow
    - bobcat
- Biological Issues and Considerations:
    - Augment Conservation in Subunit 1 of the Highgrove Area Plan.
    - Conserve grasslands adjacent to sage scrub for foraging Habitat for raptors.
    - Maintain linkage area for bobcat.
    - Conserve upland Habitat supporting Bell's sage sparrow and Southern California rufous-crowned sparrow.

Cell Number 719 is located in the northeast quarter of USGS Section 32. Table 3818 of the MSCHP identifies the requirements for this Cell as:

> *Conservation within this Cell will contribute to assembly of Proposed Constrained Linkage 7. Conservation within this Cell will focus on coastal sage scrub and grassland habitat. Areas conserved within this Cell will be connected to coastal sage scrub habitat proposed for conservation in Cell #721 in the Highgrove Area Plan to the east. Conservation within this Cell will range from 15%-25% of the Cell focusing in the southeastern portion of the Cell.*

As noted above, this Cell will contribute to the assembly of Proposed Constrained Linkage 7. This linkage is:

> *Comprised of upland Habitat in the vicinity of Central Avenue. It is the only connection from Sycamore Canyon Park to Box Springs Reserve. This Linkage is important for species dispersal and would reduce the likelihood of species extinction as a result of population isolation. Habitat for Planning Species such as cactus wren and Bell's sage sparrow occurs within this Linkage. This Linkage likely provides for movement of common mammals such as bobcat.*

Project Findings

The 30.9 acre property includes 1.42 acres along the extreme western boundary of Cell 719 (Figure 6). The Constrained Linkage 7 extends from these cells east to the Box Springs Reserve.

4.8 Jurisdictional Waters

4.8.1 Army Corps of Engineers

The Corps regulates discharges of dredged or fill material into waters of the United States. These watersheds include wetlands and non-wetland bodies of water that meet specific criteria. The lateral limit of Corps jurisdiction extends to the Ordinary High Water Mark (OHWM) and to any wetland areas extending beyond the OHWM; thus, the maximum jurisdictional area is represented by the OHWM or wetland limit, whichever is greater.

Corps regulatory jurisdiction pursuant to Section 404 of the Clean Water Act is founded on a connection or nexus between the water body in question and interstate (waterway) commerce. This connection may

be direct, through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce, or may be indirect, through a nexus identified in the Corps regulations.

Project Site Findings

The Box Springs Canyon channel that runs through the center of the property may come under the jurisdiction of the Corps. Currently, flow along this channel is collected into a flood control basin. Prior to development of the region, it appears the Box Springs Canyon channel connected downstream to the Tequesquite Arroyo and from there to the Santa Ana River.

The natural flow of the channel has been affected by the construction of the flood control basin, the Gage Canal, the reservoir in the agricultural fields of the University of California Riverside campus, and being placed in pipes underneath roads and development areas. However, it is likely the flow of water still connects to the Santa Ana River.

The proposed project will not impact the Box Springs Canyon channel.

A second, unnamed area on the property falls within the project development area. This area in the southwestern corner of the site is separate from the Box Springs Canyon drainage, but there is evidence of connection of overland flow. The cattail and mulefat-willow habitat within this area may be wetland habitat.

The presence of this habitat, the mulefat and scale-broom plant community, and the evidence of overland flow indicates that this area has a significant nexus with the Box Springs Canyon drainage and therefore may meet the test of an isolated jurisdictional water.

4.8.2 Regional Water Quality Control Board

The Corps has delegated the authority for use of 404 permits to each individual state. The use of a 404 permit in California is regulated by the State Water Resources Control Board (SWRCB) under Section 401 of the Clean Water Act regulations. The Board has authority to issue a 401 permit that allows the use of a 404 permit in the state, with the authority in the state being vested in regional offices known as Regional Water Quality Control Boards (RWQCB).

Under the Porter-Cologne Act of 2003, the SWRCB has extended its responsibilities to include impacts to water quality from non-point source pollution.

In addition, the SWRCB has the responsibility to require that projects address ground water and water quality issues, which would be evaluated as part of the geotechnical and hydrology studies. Their authority extends to all waters of the State (of California).

Project Findings

Both the Box Springs Canyon channel and the second, unnamed area on the property would come under the jurisdiction of the RWQCB. The Box Springs Canyon channel provides seasonal water resources and some wildlife value, while the unnamed area provides substantial wildlife values.

4.8.3 California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW), through provisions of the State of California Administrative Code, is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may adversely be affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. Lateral limits of jurisdiction are not clearly defined, but generally include any riparian resources associated with a stream

or lake, CDFW regulates wetland areas only to the extent that those wetlands are part of a river, stream or lake as defined by CDFW.

Project Findings

The Box Springs Canyon channel on the property would come under the jurisdiction of the CDFW. The Box Springs Canyon channel is a recognized stream that seasonal water resources and some wildlife value.

The unnamed area may not come under the CDFW. There is a sump area occupied by the willow trees, mulefat shrubs and cattails that would be considered riparian habitat, but no true streambed. However, its overland connection with the Box Springs Canyon channel and nearly continuous plant community cover may result in the CDFW claiming jurisdiction over this area.

Scalebroom is one of several species that make up the alluvial fan scrub plant community. During the field meeting on January 12, the scalebroom-dominated plant community found on the upper terraces of the property was described by the CDFW as meeting the test of an alluvial fan sage scrub plant community that would come under the jurisdiction of the CDFW.

4.9 Raptors, Migratory Birds, and Habitat

Most of the raptor species (eagles, hawks, falcons and owls) are experiencing population declines as a result of habitat loss. Some, such as the peregrine falcon, have also experienced population losses as a result of environmental toxins affecting reproductive success, animals destroyed as pests or collected for falconry, and other direct impacts on individuals. Only a few species, such as the red-tailed hawk and barn owl, have expanded their range in spite of or a result of human modifications to the environment. As a group, raptors are of concern to state and federal agencies.

Raptors and all migratory bird species, whether listed or not, also receive protection under the Migratory Bird Treaty Act (MBTA) of 1918. The MBTA prohibits individuals to kill, take, possess or sell any migratory bird, bird parts (including nests and eggs) except in accordance with regulations prescribed by the Secretary of the Interior Department (16 U. S. Code 703).

Additional protection is provided to all bald and golden eagles under the Bald and Golden Eagle Protection Act of 1940, as amended. State protection is extended to all birds of prey by the CDFW Code, Section 2503.5. No take is allowed under these provisions except through the approval of the agencies or their designated representatives.

Project Findings

There is potential nesting habitat for raptors or migratory birds in the cultivated and native trees on site, as well as within the scrub areas.

Removal of trees and shrub cover, or disturbance in nearby areas, may have an impact on breeding birds attempting to establish nests, or on nesting birds with eggs and young.

4.10 Habitat Fragmentation and Wildlife Movement

Wildlife movement and the fragmentation of wildlife habitat are recognized as important issues that must be considered in assessing impacts to wildlife. In summary, habitat fragmentation is the division or breaking up of larger habitat areas into smaller areas that may or may not be capable of independently sustaining wildlife and plant populations. Wildlife movement (more properly recognized as species movement) is the temporal movement of species along various types of corridors. Wildlife corridors are especially important for connecting fragmented wildlife habitat areas.

Project Findings

The property is in area already fragmented and divided by roads and housing. There are few native habitats left in the nearby surrounding areas, and impacts to wildlife movement and habitat fragmentation have already occurred. There will be no additional fragmentation of habitat.

The Box Springs Canyon channel may provide some wildlife movement locally and possibly regionally upstream to Sycamore Canyon and the Box Springs Mountains. The downstream end is blocked by a mix of residential and commercial development, and probably no longer functions as a substantial wildlife corridor.

The Constrained Linkage 7 identified in the MSHCP extends from these cells east to the Box Springs Reserve. The section of Box Springs Canyon channel within the property limits is not part of this Constraint Linkage.

4.11 Other Issues

Quail Run Park was identified in the comment letter by the Friends of Riverside's Hills as a potential issue. Quail Run Park appears to be located northeast of the property, along the section that is not proposed for development.

5.0 Discussion

5.1 General Biological Resources

Project development will result in the temporary loss of 0.51 acres of coastal sage scrub, and the permanent loss of 2.97 acres (Table B). The project will also result in the temporary loss of 0.10 acres of landscaped plant communities and the permanent loss of 2.63 acres, as well as the associated wildlife habitats (Table B). Coastal sage scrub habitat is common in this area of Riverside County. In addition, the stand of coastal sage scrub is located within an area mostly surrounded by residential and commercial development. This impact is not considered to be significant.

5.2 MSHCP Consistency Analysis

5.2.1 Protection of Species Associated with Riparian/Riverine Areas and Vernal Pools (Section 6.1.2)

The excavation of the borrow site will temporarily impact 0.08 acres of the willow-mulefat woodlands, 0.29 acres of the mulefat scrub and 0.07 acres of riverine habitat (Table B).

The temporary impacts are significant and will mitigated by the replacement of the same habitats on site. The on-site mitigation area is shown on Figure 3 as "Temporary Impacts – Borrow Site and Site of Future Mitigation Areas."

The proposed borrow area and lower portion of the development will temporarily impact 4.93 acres and permanently impact 0.81 acres of alluvial fan scrub (Table B). This impact is significant and will be mitigated by the replacement of the same habitat on site.

The loss of alluvial fan scrub, willow-mulefat woodland, willow scrub and riverine habitat will be mitigated on site as part of the borrow site rehabilitation (Figure 2). The borrow site area will be contoured to maximize surface area for the restoration of these habitats.

All permanent impacts will be the result of the construction of the apartment complex and associated infrastructure. All temporary impacts will be the result of borrow site development and access.

Table B. Impacts to Plant Communities

Plant Communities	Total Acreage	Acreages Impacted		
		Permanently Impacted	***Temporarily Impacted***	***Total Impacts***
Coastal sage scrub	*6.21*	*2.97*	*0.51*	*3.48*
Disturbed	*5.28*	*3.65*	*0.12*	*3.77*
Ruderal	*1.83*	*1.48*	*0.24*	*1.72*
Landscaped	*3.04*	*2.63*	*0.10*	*2.73*
Upland/Disturbed/ Landscape Subtotal	*16.36*	*10.73*	*0.97*	*11.70*
Willow-mulefat woodland	*3.98*	*0.00*	*0.08*	*0.08*
Alluvial fan scrub	*6.78*	*0.81*	*4.93*	*5.74*
Mulefat scrub	*1.81*	*0.00*	*0.29*	*0.29*
Riverine	*2.00*	*0.00*	*0.07*	*0.07*
Wetland/Riparian/ Riverine Subtotal	*14.57*	*0.81*	*5.37*	*6.18*
Totals	***30.93***	***11.54***	***6.34***	***17.88***

A total of 6.18 acres of mitigation will be required for both permanent and temporary impacts to willow-mulefat woodlands, mulefat scrub,riverine habitat, and alluvial fan scrub.

The project developer will work with the resource agencies and qualified consultants to develop a detailed restoration plan for the loss of riparian/riverine resources. The plan shall be based on the following outline, with sufficient detail to ensure the success of the restoration work.

1. Project description
2. Graphics of the proposed construction area and final restoration area.
3. Description of impacts to willow-mulefat woodland, mulefat scrub, riverine and alluvial fan scrub
4. Mitigation ratios of 1:1 for replacement/restoration.
5. Project goals.
6. Project implementation, including recontouring of the borrow site to provide low and high points for natural recovery of willow-mulefat woodland, mulefat scrub, riverine and alluvial fan scrub habitat.
7. Site preparation methods
8. Planting program
9. Monitoring requirements
10. Success criteria and implementing steps to ensure success

11. Reporting requirements
12. Adaptive Management Strategy
13. Protective measures to address indirect impacts
14. Financing
15. Responsible Parties

The restoration area will be placed in a conservation easement to protect the site in perpetuity. The easement shall be recorded with the County Recorder. At this time, the ownership of the easement is proposed to come under the jurisdiction of the property management staff for the development. The project proponent is also pursuing dedication of the conservation easement to either the Riverside Land Conservancy (RCL) or the San Jacinto Basin Resource Conservation District (SJCD).

5.2.2 Additional Survey Needs and Procedures (Section 6.3.2)

There will be no impacts to smooth tarplant, round-leaved filaree, Nevin's barberry, or burrowing owls or burrowing owl habitat from project development.

5.2.3 Guidelines Pertaining to the Urban/Wildlands Interface (Section 6.1.4)

The following Best Management Practices (BMPs) are taken directly from Appendix C of the Western Riverside County MSHCP, modified for this project:

1. Water pollution and erosion control plans shall be developed and implemented in accordance with RWQCB requirements as appropriate.

2. The footprint of disturbance shall be minimized to the maximum extent feasible. Access to sites shall be via pre-existing access routes to the greatest extent possible.

3. The upstream and downstream limits of projects disturbance plus lateral limits of disturbance on along the stream shall be clearly defined and marked in the field and reviewed by the biologist prior to initiation of work.

4. Projects should be designed to avoid the placement of equipment and personnel within the stream channel or on sand and gravel bars, banks, and adjacent upland habitats used by target species of concern.

5. Projects that cannot be conducted without placing equipment or personnel in sensitive habitats should be timed to avoid the breeding season of riparian species identified in MSHCP Global Species Objective No. 7.

6. When stream flows must be diverted, the diversions shall be conducted using sandbags or other methods requiring minimal instream impacts. Silt fencing of other sediment trapping materials shall be installed at the downstream end of construction activity to minimize the transport of sediments offsite. Settling ponds where sediment is collected shall be cleaned out in a manner that prevents the sediment from reentering the stream. Care shall be exercised when removing silt fences, as feasible, to prevent debris or sediment from returning to the stream.

7. Equipment storage, fueling, and staging areas shall be located on upland sites with minimal risks of direct drainage into riparian areas or other sensitive habitats. These designated areas shall be located in such a manner as to prevent any runoff from entering sensitive habitat. Necessary precautions shall be taken to prevent the release of cement or other toxic substances into surface waters. Project related spills of hazardous materials shall be reported to appropriate entities

including but not limited to applicable jurisdictional city, FWS, and CDFW, RWQCB and shall be cleaned up immediately and contaminated soils removed to approved disposal areas.

8. Erodible fill material shall not be deposited into water courses. Brush, loose soils, or other similar debris material shall not be stockpiled within the stream channel or on its banks.

9. The qualified project biologist shall monitor construction activities for the duration of the project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat and species of concern outside the project footprint.

10. The removal of native vegetation shall be avoided and minimized to the maximum extent practicable. Temporary impacts shall be returned to pre-existing contours and revegetated with appropriate native species.

11. Exotic species that prey upon or displace target species of concern should be permanently removed from the site to the extent feasible.

12. To avoid attracting predators of the species of concern, the project site shall be kept as clean of debris as possible. All food related trash items shall be enclosed in sealed containers and regularly removed from the site(s).

13. Construction employees shall strictly limit their activities, vehicles, equipment, and construction materials to the proposed project footprint and designated staging areas and routes of travel. The construction area(s) shall be the minimal area necessary to complete the project and shall be specified in the construction plans. Construction limits will be fenced with orange snow screen. Exclusion fencing should be maintained until the completion of all construction activities. Employees shall be instructed that their activities are restricted to the construction areas

14. The Permittee shall have the right to access and inspect any sites of approved projects including any restoration/enhancement area for compliance with project approval conditions including these BMPs.

5.2.4 Habitat Conservation Plan for the Stephens Kangaroo Rat

The project proponent is required to pay the Stephens kangaroo rat fee required under the Stephens Kangaroo Rat Habitat Conservation Plan.

5.2.5 5 Project Relationship to Reserve Assembly, Cities of Riverside/Norco (Section 3.3.17)

The property includes 1.42 acres of Criteria Cell 719. As shown on Figure 6, the portion of the Criteria Cell under the property ownership is at the western end of the Cell.

All of the 1.42 acres within the proposed development area lie adjacent to the existing Quail Run apartment complex, and are separated from the remainder of the Cell by this development.

The small section of the Criteria Cell within the property limits and the isolation of the section by development on the east and south (Central Avenue) lowers the wildlife value of this area of the Cell.

This is especially true given that the MSHCP recommended that proposed acquisition within the cell concentrate on the southeast, whereas the two Criteria Cell areas on the parcel are on the west.

5.3 Jurisdictional Waters

As shown in Table B, the excavation of the borrow site will temporarily impact 0.08 acres of the willow-mulefat woodlands, 0.29 acres of the mulefat scrub and 0.07 ares of riverine. These impacts are significant and will mitigated by the replacement of the same habitats on site. There are no permanent impacts.

All permanent impacts will be the result of the construction of the apartment complex and associated infrastructure. All temporary impacts will be the result of borrow site development and access.

The proposed borrow area will temporarily impact 4.93 acres and permanently impact 0.81 acres of alluvial fan scrub. This impact is significant and will be mitigated by the replacement of the same habitat on site.

The loss of alluvial fan scrub, willow-mulefat woodland, willow scrub and riverine habitat will be mitigated on site as part of the borrow site rehabilitation. The borrow site area will be contoured to maximize surface area for the restoration of these habitats.

The project developer will work with the resource agencies and qualified consultants to develop a detailed restoration plan for the loss of riparian/riverine resources as described in Section 5.2.1. In addition, NRAI recommends:

1. No trespass beyond that already delimited by construction limits shall occur into jurisdictional waters.
2. No drainage from development will be designed to flow of be directed into this area. All final project design flows will be directed into a formal site collection system.

5.4 Raptors and Nesting Habitats

No nest or nesting behavior was observed during the field survey, but the project site supports numerous tree and scrub habitats that provide nesting habitat. The project will likely have both direct and indirect construction-related impacts to raptor and migratory bird use of the site, as well as any use of the site by other species moving through the area.

It is possible that birds are nesting on site or will be nesting at the time of construction. We recommend the following mitigation measures:

- A breeding bird survey will be required to determine if nesting is occurring. Occupied nests will not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through non-invasive methods that either (a) the adult birds have not begun egg-laying and incubation; or (b) the juveniles from the occupied nests are foraging independently and are capable of independent survival.

- If the biologist is not able to verify one of the above conditions, then no disturbance shall occur within 300 feet of non-raptor nests, and within 500 feet of raptor nests, during the breeding season to avoid abandonment of the young (California Department of Fish and Wildlife 2012b).

5.5 Habitat Fragmentation and Wildlife Movement

The project will not add to the ongoing fragmentation of habitat in this area, nor will it substantially affect wildlife movement in this area of Riverside County.

5.6 Other Issues

The section of the property adjacent to Quail Park is not proposed for development. No impacts will occur and no mitigation will be required.

6.0 References

Borror, D.J. and R.E. White, 1970. *A Field Guide to the Insects*. Houghton Mifflin Company, Boston, New York.

Burt, W. H., 1986. *A Field Guide to the Mammals in North American North of Mexico*. Houghton Mifflin Company, Boston, Massachusetts.

California Department of Fish and Wildlife, 2012. *Special Animals List*.

Faber, P.A., E. Keller, A. Sands, and S.M. Massey, 1989. *The Ecology of Riparian Habitats of the Southern California Coastal Region; A Community Profile*. U.S Fish and Wildlife Service Biological Report, 85(7.27). 152 pp.

Garrett, K. and J. Dunn, 1981. *Birds of Southern California*. Los Angeles Audubon Society. The Artisan Press, Los Angeles, California.

Grenfell, W. E., M. D. Parisi, and D. McGriff, 2003. *A Check-list of the Amphibians, Reptiles, Birds and Mammals of California. California Wildlife Habitat Relationship System*, California Department of Fish and Wildlife, Sacramento, California.

Hall, E. R., 1981. *The Mammals of North America, Volumes I and II*. John Wiley and Sons, New York, New York.

Hickman, J. C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press.

Ingles, L. G., 1965. *Mammals of the Pacific States*. Stanford University Press, Stanford, California.

Kartesz, J.T. 2013. Floristic Synthesis of North America, Version 1.0 Biota of North America Program (BONAP). (in press). http://www/bonap.org/

Munz, P.A., 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.

Smith, D.S. 1996. Composition and Diversity of Diegan Alluvial Scrub. Master's Thesis. San Diego State University.

Smith, R.L.1980. Alluvial Scrub Vegetation of the San Gabriel River Floodplain, California. Madrono vol.27, 3:126-138.

Soil Survey Staff, Natural Resources Conservation Service, 2014. United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 1, 2014.

Williams, D. F., 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Prepared for The Resources Agency, California Department of Fish and Wildlife.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer and M. White, 1990. *California's Wildlife*, Volume III Mammals. The Resources Agency, Department of Fish and Game, Sacramento, California.

Appendix A - Plant and Animal Species Observed

*denotes non-native plants
List does not include some cultivated or landscape plants

ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Adoxaceae	**Elderberry family**
Sambucus mexicana	Mexican elderberry
Amaranthaceae	**Amaranthus family**
**Amaranthus albus*	White tumbleweed
Anacardiaceae	**Sumac family**
**Schinus molle*	Peruvian pepper tree
Apiaceae	**Carrot family**
Bowlesia incana	Hoary bowlesia
Asteraceae	**Sunflower family**
Artemisia californica	California sagebrush
Artemisia douglasiana	Mugwort
Artemisia dracunculus	Tarragon
Baccharis salicifolia	Mulefat
**Cnicus benedictus*	Blessed thistle
Encelia farinosa	Desert brittlebush
Gnaphalium californicum	California everlasting
Helianthus annuus	Annual sunflower
Lepidospartum squamatum	Scale-broom
Lessingia filaginifolia	Cudweed aster
Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Emmenanthe pendulifora	Whispering bells
Nemophila menziesii	Baby blue eyes
Phacelia parryi	Parry's phacelia
Brassicaceae	**Mustard family**
Descurainia pinnata	Western tansy mustard
**Hirschfeldia incana*	Short-podded mustard
**Sisymbrium irio*	London rocket
Cactaceae	**Cactus family**
Cylindropuntia californica	Coastal cholla
Opuntia littoralis	Coastal prickly pear

Chenopodiaceae	**Saltbush family**
**Salsola tragus*	Russian thistle
Convolvulaceae	**Morning glory family**
Calystegia macrostegia	Morning glory
Euphorbiaceae	**Spurge family**
Croton californica	Croton
**Ricinus communis*	Castor bean
Fabaceae	**Pea family**
Cercidium floridum	Palo verde
Lotus scoparius	Deer weed
**Melilotus indicus*	Sourclover
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree
Lamiaceae	**Mint family**
**Marrubium vulgare*	Horehound
Salvia apiana	White sage
Salvia mellifera	Black sage
Stachys ajugoides	Water mint
Myrtaceace	**Myrtle family**
**Eucalyptus* sp.	Eucalyptus
Polygonaceae	**Buckwheat family**
Eriogonum fasciculatum	California buckwheat
Salicaceae	**Willow family**
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Sapindaceae	**Soapberry family**
Koelreturia bipinnata	Chinese flame tree
Solanaceae	**Nightshade family**
Datura wrightii	Jimson weed
Nicotiana glauca	Indian tobacco
Tamaricaeae	**Tamarisk family**
**Tamarix ramosissima*	Salt cedar
Vitaceae	**Grape family**
Vitis girdiana	Wild grape

ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Arecaceae	**Palm family**
Washingtonia californica	Desert fan palm
Poaceae	**Grass family**
**Arundo donax*	Giant reed
**Bromus diandrus*	Ripgut brome
**Bromus madritensis* ssp. *rubens*	Red brome
**Schismus barbatus*	Mediterranean grass
Stipa pulchra	Purple needlegrass
Typhpa latifolia	Broad-leaved cattail

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

Animals

INSECTA	**INSECTS**
Papilionidae	**Swallowtail butterflies**
Papillio rutulus	Western tiger swallowtai
Pieridae	**Whites and sulfur butterflies**
Artogeia rapae	Cabbage white
REPTILIA	**REPTILES**
Phryonosomatidae	**Spiny lizards and their allies**
Sceloporus occidentalis	Western fence lizard
Uta stansburiana	Side-blotched lizard
AVES	**BIRDS**
Phasianidae	**Quails and pheasants**
Callipepla californica	California quail
Accipitridae	**Kites, hawks and eagles**
Buteo jamaicensis	Red-tailed hawk
Columbidae	**Pigeons and doves**
Zenaida macroura	Mourning dove
Trochlidae	**Hummingbirds**
Calypte anna	Anna's hummingbird
Tyrannidae	**Tyrant flycatchers**
Sayornis saya	Say's phoebe

Hirundinidae	**Swallows**
Stelgidopteryx ruficollis	Northern rough-winged swallow
Corvidae	**Crows and ravens**
Corvus brachyrhynchos	American crow
Mimidae	**Mimic thrushes**
Mimus polyglottos	Northern mockingbird
Sturnidae	**Starlings**
Sturnus vulgaris	European starling
Emberizidae	**Sparrows**
Melospiza melodia	Song sparrow
Pipilo crissalis	California towhee
Icteridae	**Blackbirds, orioles and relatives**
Icterus cucullatus	Hooded oriole
Fringillidae	**Finches**
Carpodacus neomexicanus	House finch
Passeridae	**Old World sparrows**
Passer domesticus	House sparrow
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and hares**
Sylvilagus audubonii	Audubon's cottontail
Sciuridae	**Squirrels, chipmunks and marmots**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket gophers**
Thomomys bottae	Botta's pocket gopher
Canidae	**Foxes, wolves and relatives**
Canis latrans	Coyote

Nomenclature follows Borror & White 1970, Hall 1981 and Grenfell et al. 2003.

Appendix B - Definitions of Species Status Classification

FED: Federal Classifications

END Taxa listed as endangered

THR Taxa listed as threatened

PE Taxa proposed to be listed as endangered

PT Taxa proposed to be listed as threatened

C2* The U.S. Fish and Wildlife Service (USFWS) revised its classifications of candidate taxa (species, subspecies, and other taxonomic designations). Species formerly designated as "Category 1 Candidate for listing" are now known simply as "Candidate". The former designation of "Category 2 Candidate for listing" has been discontinued. The USFWS will continue to assess the need for protection of these taxa and may, in the future, designate such taxa as Candidates. NRAI has noted the change in species status by marking with an asterisk (*) those C2 candidates that were removed from the list.

C Candidate for listing. Refers to taxa for which the USFWS has sufficient information to support a proposal to list as Endangered or Threatened and issuance of the proposal is anticipated but precluded at this time.

BCC Bird of Conservation Concern

ND Not designated as a sensitive species

STATE: State Classifications

END Taxa listed as endangered

THR Taxa listed as threatened

CE Candidate for endangered listing

CT Candidate for threatened listing

CFP California Fully Protected. Species legally protected under special legislation enacted prior to the California Endangered Species Act.

SSC Species of Special Concern. Taxa with populations declining seriously or that are otherwise highly vulnerable to human development.

SA Special Animal. Taxa of concern to the California Natural Diversity Data Base regardless of their current legal or protected status.

WL Watch list.

ND Not designated as a sensitive species

CNPS: California Native Plant Society Classifications

1A Plants presumed by CNPS to be extinct in California

1B Plants considered by CNPS to be rare or endangered in California and elsewhere

2P Plants considered by CNPS to be rare, threatened or endangered in California, but which are more common elsewhere.

3 Review list of plants suggested by CNPS for consideration as endangered but about which more information is needed.

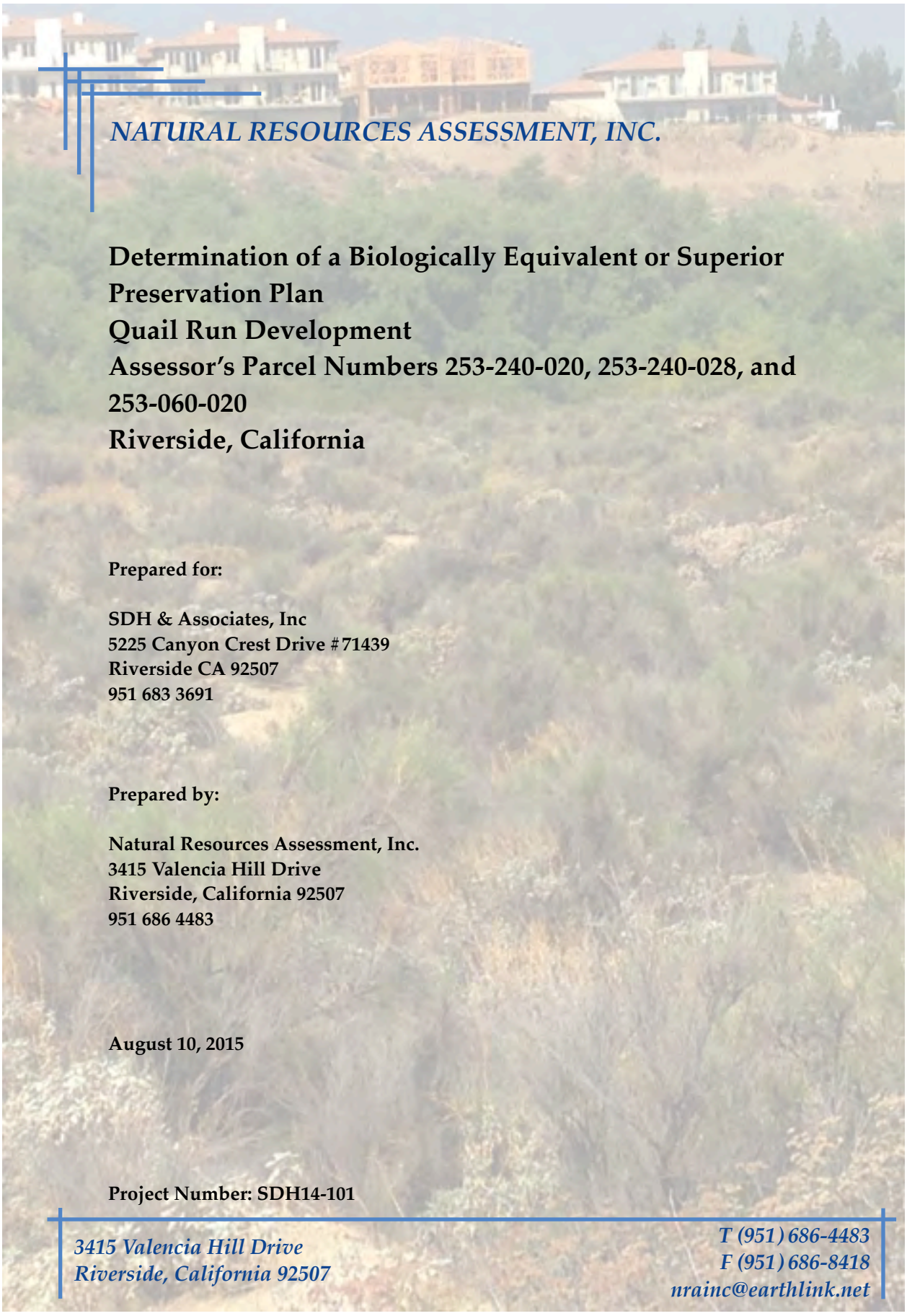
4 Watch list of plants of limited distribution whose status should be monitored

CNPS: Threat Codes

.1 Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 Fairly endangered in California (20-80% occurrences threatened)

.3 Not very endangered in California (<20% of occurrences threatened or no current threats known)



NATURAL RESOURCES ASSESSMENT, INC.

Determination of a Biologically Equivalent or Superior Preservation Plan
Quail Run Development
Assessor's Parcel Numbers 253-240-020, 253-240-028, and 253-060-020
Riverside, California

Prepared for:

SDH & Associates, Inc
5225 Canyon Crest Drive #71439
Riverside CA 92507
951 683 3691

Prepared by:

Natural Resources Assessment, Inc.
3415 Valencia Hill Drive
Riverside, California 92507
951 686 4483

August 10, 2015

Project Number: SDH14-101

3415 Valencia Hill Drive
Riverside, California 92507

T (951) 686-4483
F (951) 686-8418
nrainc@earthlink.net

CERTIFICATION

I hereby certify that the statements furnished below and in the attached exhibits present data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

August 10, 2015

Karen Kirtland
Natural Resources Assessment, Inc.

Date

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Figures

Tables

1.0 Definition of the Project Area

The project area consists of 30.09 acres located northwest of the corner of Quail Run Road and Central Avenue in Riverside, California (Figures 1 and 2). It is in Section 1, Township 3 south, Range 5 west, San Bernardino base and meridian (Figure 2).

2.0 Project Description and Discussion of Alternatives

The proposed project is composed of two components. The first is the development of the southeastern portion into thirteen apartment buildings and common areas. The second component is the construction of a borrow site to provide dirt for the apartment pads and roads. The dirt amounts will be balanced on site.

There are no proposed alternatives for the project. The project impacts to riverine/riparian resources result almost entirely from the construction of the borrow site. Any proposed alternative to the current design would result in an imbalance of soil on site, requiring the import of fill materials from offsite. Presumably, having to borrow fill from elsewhere would at a minimum result in increased traffic and air quality impacts, and may have other unidentified impacts.

There are no other feasible alternatives for offsite locations for the project.

3.0 Riverine/Riparian Resources of the Project Site

There are several plant communities within the property (Figure 3). This report focuses on the Riverine/Riparian plant communities.

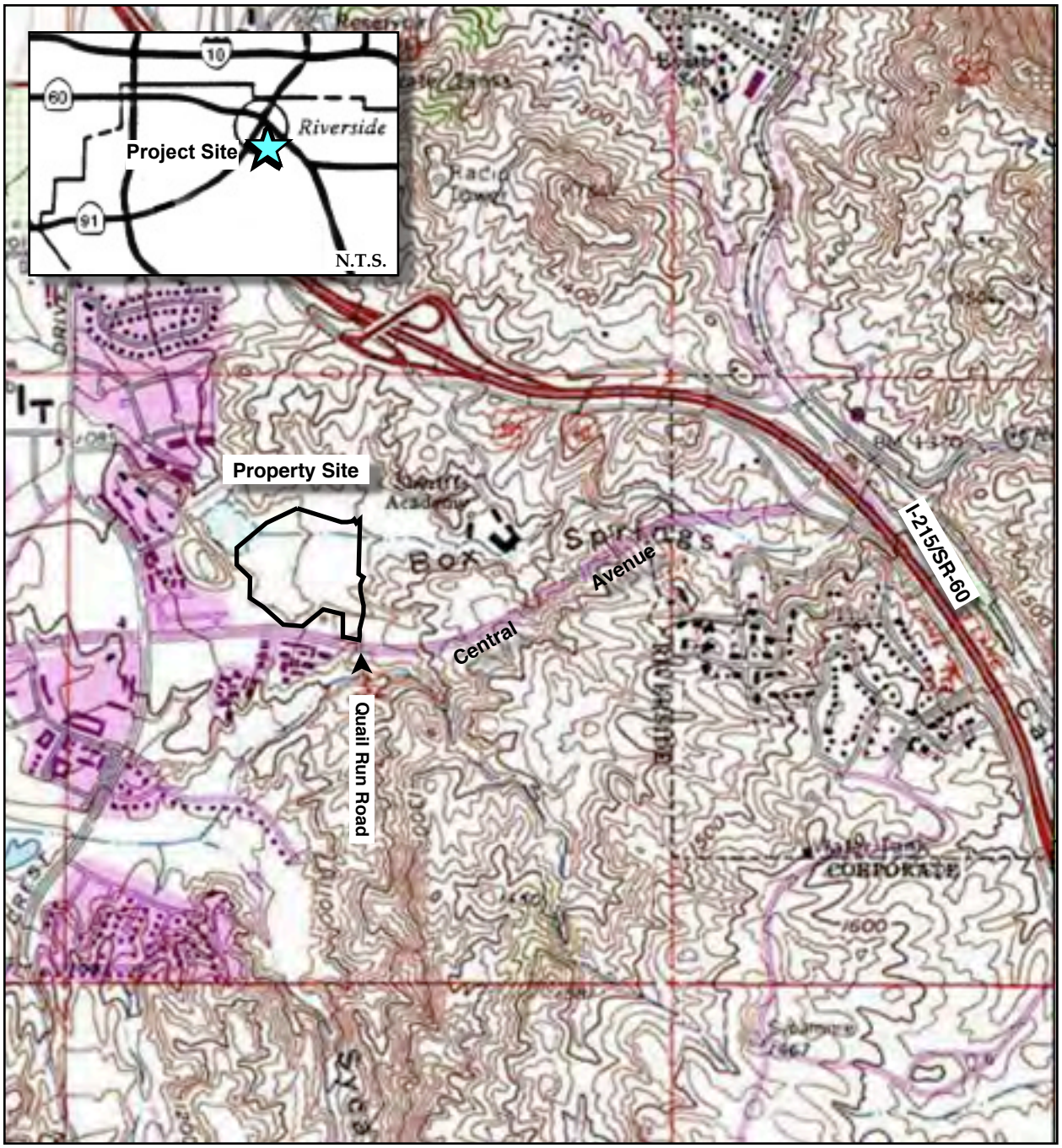
The Box Springs Canyon channel that crosses through the property (north of the project area) has a stand of willow-mulefat riparian woodland just east of the flood basin, and scattered stands of mulefat scrub riparian along the channel. There is also a dense mixed stand of mulefat-willow riparian near the southwestern corner of the property.

The lower terraces of the property on either side of the Box Springs Canyon channel are occupied by alluvial fan scrub composed almost entirely of scalebroom (*Lepidospartum squamatum*) (Photo 2). Other plant species in this include scattered stands of mulefat (*Baccharis salicifolia*) (Photo 3), California buckwheat, Jimson weed (*Datura wrightii*) and castor bean (*Ricinus communis*).

Table A provides the acreages per riparian and riverine habitat type.

Table A. Riparian and Riverine Acreages

Habitat Type	Acres
Riparian	
Willow-mulefat woodland	3.98
Mulefat scrub	1.81
Alluvial fan scrub	6.78
Total Riparian	**12.57**
Total Riverine	**2.00**
Total Riparian and Riverine	***14.57***



Map Base: Riverside East 1980 7.5′
USGS topographic quadrangle
Inset Map: Thomas Bros 2006

Figure 1. Project Location and Site Vicinity

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-060-020
Riverside, California

Map Base: Google Earth 2015

Figure 2. Project Aerial

Property Boundary

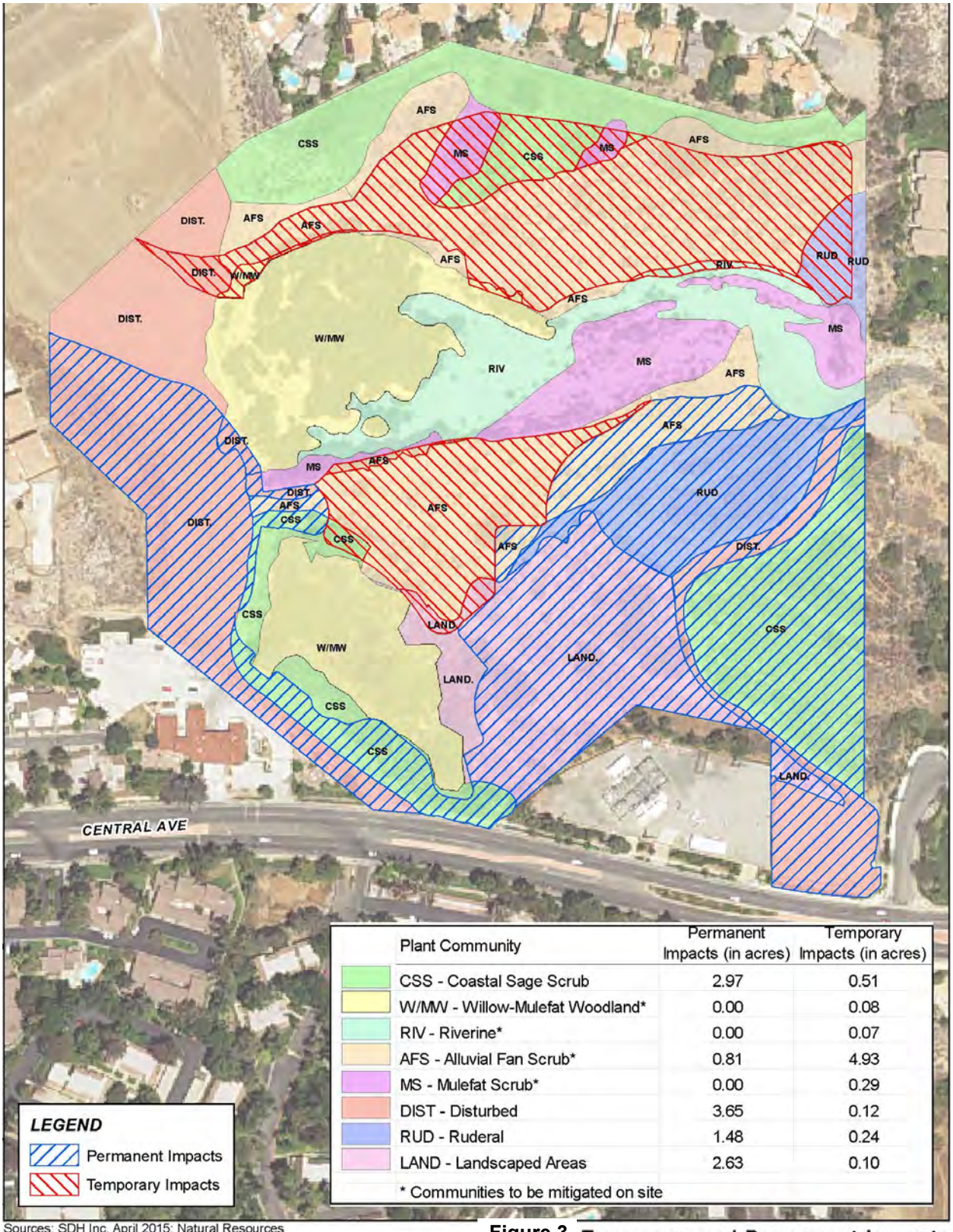
Box Springs Canyon Channel

N

Feet
(approximate)

0 103 206

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-060-020
Riverside, California



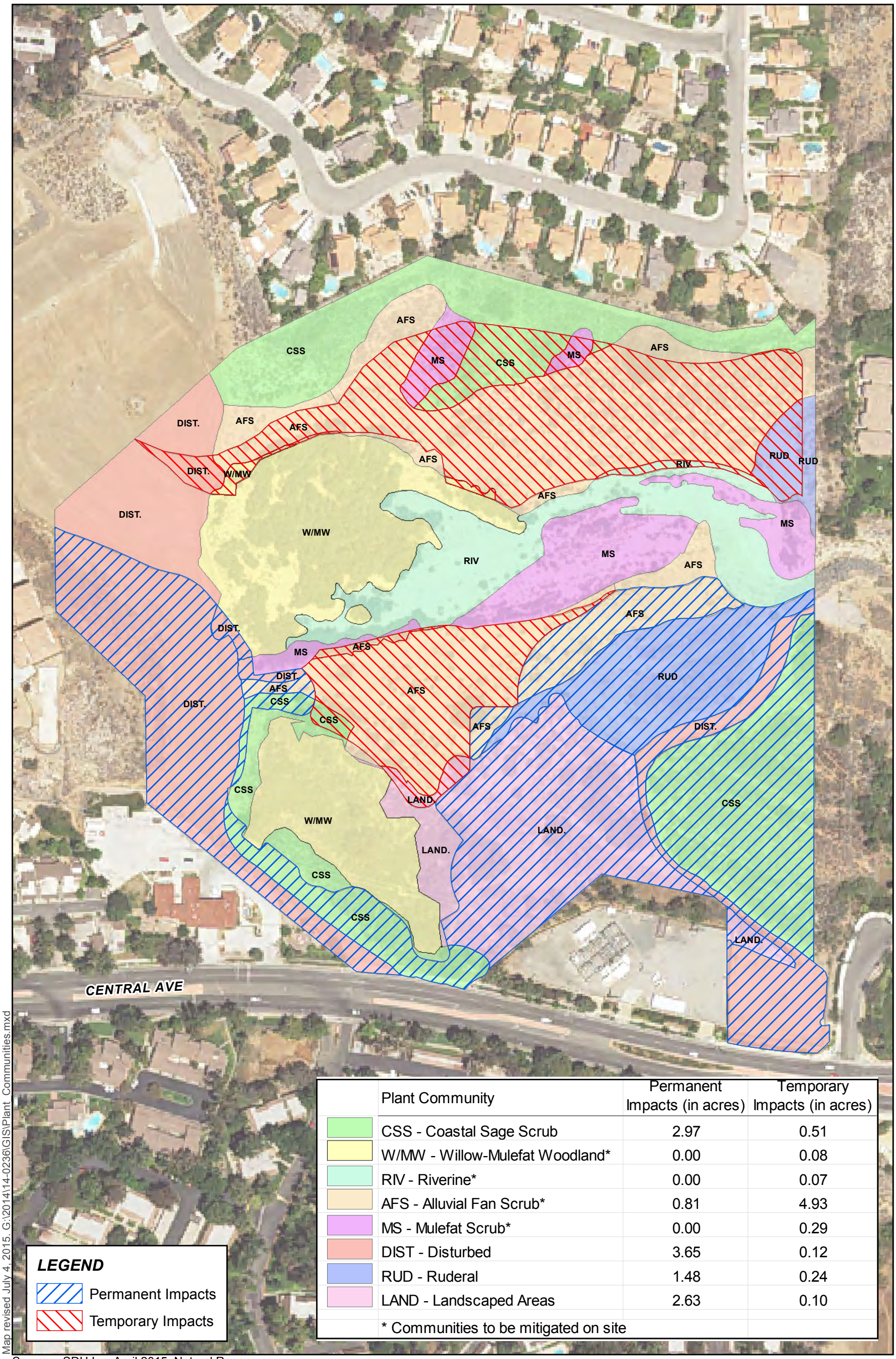
Plant Community	Permanent Impacts (in acres)	Temporary Impacts (in acres)
CSS - Coastal Sage Scrub	2.97	0.51
W/MW - Willow-Mulefat Woodland*	0.00	0.08
RIV - Riverine*	0.00	0.07
AFS - Alluvial Fan Scrub*	0.81	4.93
MS - Mulefat Scrub*	0.00	0.29
DIST - Disturbed	3.65	0.12
RUD - Ruderal	1.48	0.24
LAND - Landscaped Areas	2.63	0.10
* Communities to be mitigated on site		

Sources: SDH Inc, April 2015; Natural Resources Assessment, Inc., June 2015; USDA NAIP, 2014.

0 100 200 300 400 Feet

Figure 3. Temporary and Permanent Impacts and Plant Communities
Quail Run Apartments

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California



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MS - Mulefat Scrub*	0.00	0.29
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RUD - Ruderal	1.48	0.24
LAND - Landscaped Areas	2.63	0.10
* Communities to be mitigated on site		

Map revised July 4, 2015. G:\2014\14-0236\GIS\Plant Communities.mxd

Sources: SDH Inc, April 2015; Natural Resources Assessment, Inc., June 2015; USDA NAIP, 2014.

0 100 200 300 400 Feet

Plate 1 - Temporary and Permanent Impacts and Plant Communities

Quail Run Apartments

ALBERT A. WEBB ASSOCIATES

4.0 Impacts to Riparian/Riverine Areas and Vernal Pools

Riparian/Riverine Areas are defined by the MSHCP as "*lands which contain Habitat dominated by tress [sic], shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby fresh water source; or areas with fresh water flow during all or a portion of the year.*"

The riparian habitats on site provide shelter, shade and food for wildlife. The willow-mulefat and mulefat scrub riparian habitats provide food, shade and shelter for riparian bird and mammal species, and provide food resources for upland birds, mammals and reptiles (Faber, et al 1989). They also provide for filtration and cleaning of water that runs along the Box Springs Canyon Channel.

The alluvial fan scrub habitat provides food, shelter and shade for upland birds, reptiles and mammals. This habitat does not generally provide filtration of water that runs through the site, except for occasional storms.

The riverine habitat provides water resources for all forms of wildlife, including amphibians. The sandy soils associated with the riverine habitat filter the water that runs along the Box Springs Channel.

Both the riverine and willow-mulefat and mulefat scrub riparian habitats provide for nutrient recycling within the general area. The riparian plants take up and store nutrients from the water flowing through the Box Springs Canyon Channel, as well as occasional runoff from rains and Central Avenue. These plants then return the nutrients to the soil when they die and decay. In addition, the water that flows through the riverine area cycles these nutrients through the soils and downstream.

The Box Spring Canyon channel may at one time have been wider, with the result that flood waters would have been spread over a wider area, resulting in a less focused flow. This would have resulted in a wider area for filtration of the water through the soils, as well as more nutrient recycling.

Vernal pools are defined by the MSHCP as "seasonal wetlands that occur in depression areas that have wetlands indicators of all three parameters (soils, vegetation and hydrology) during the wetter portion of the growing season but normally lack wetlands indicators of hydrology and/or vegetation during the drier portion of the growing season . . . . Evidence concerning the persistence of an area's wetness can be obtained from its history, vegetation, soils, and drainage characteristics, uses to which it has been subjected, and weather and hydrologic records" (Riverside County Transportation and Land Management Agency, website address: http://www.rctlma.org).

There is no evidence of ponding or areas suitable for ponding of vernal pools within the project boundary. The loamy and rocky soils of the property are not suitable for the development of vernal pools and no vernal pools are expected to occur on site.

The excavation of the borrow site will temporarily impact 0.08 acres of the willow-mulefat woodlands, and 0.29 acres of the mulefat scrub (Table B). There will be no permanent loss of willow-mulefat woodlands ormulefat scrub (Table B). These impacts are significant and will mitigated by the replacement of the same habitats on site.

The excavation of the borrow site will temporarily impact 0.07 acres of riverine habitat, which will be replaced during the recontouring of the borrow site area (Table B).

The proposed borrow area will temporarily impact 4.93 acres and the development of the apartment complex will permanently impact 0.81 acres of alluvial fan scrub (Table B). This impact is significant and will be mitigated by the replacement of the same habitat on site.

Figure 4. Development and Borrow Site Areas

Temporary and Permanent Impacts

Quail Run Apartments

Quail Run Development
APNs 253-240-020, 253-240-028 and 253-260-020
Riverside, California

ALBERT A. WEBB

Map revised June 26, 2015. G:\2014\14-0236\GIS\Impact Areas aerial.mxd

Sources: SDH Inc, April 2015;
USDA NAIP, 2014.

0 100 200 300 400 Feet

Plate 2 - Temporary and Permanent Impacts

Quail Run Apartments

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Table B. Impacts to Plant Communities				
Plant Communities	**Total Acreage**	**Acreages Impacted**		
		Permanently Impacted	***Temporarily Impacted***	***Total Impacts***
Coastal sage scrub	*6.21*	*2.97*	*0.51*	*3.48*
Disturbed	*5.28*	*3.65*	*0.12*	*3.77*
Ruderal	*1.83*	*1.48*	*0.24*	*1.72*
Landscaped	*3.04*	*2.63*	*0.10*	*2.73*
Upland/Disturbed/ Landscape Subtotal	*16.36*	*10.73*	*0.97*	*11.70*
Willow-mulefat woodland	*3.98*	*0.00*	*0.08*	*0.08*
Alluvial fan scrub	*6.78*	*0.81*	*4.93*	*5.74*
Mulefat scrub	*1.81*	*0.00*	*0.29*	*0.29*
Riverine	*2.00*	*0.00*	*0.07*	*0.07*
Wetland/Riparian/ Riverine Subtotal	*14.57*	*0.81*	*5.37*	*6.18*
Totals	***30.93***	***11.54***	***6.34***	***17.88***

A total of 6.18 acres of mitigation will be required for both permanent and temporary impacts to willow-mulefat woodlands, mulefat scrub,riverine habitat, and alluvial fan scrub.

5.0 Project Design Features and Mitigation Measures

The loss of alluvial fan scrub, willow-mulefat woodland, willow scrub and riverine habitat will be mitigated on site as part of the borrow site rehabilitation (Figure 4). The borrow site area will be contoured to maximize surface area for the restoration of these habitats.

The project developer will work with the resource agencies and qualified consultants to develop a detailed restoration plan for the loss of riparian/riverine resources. The plan shall be based on the following outline, with sufficient detail to ensure the success of the restoration work.

1. Project description
2. Graphics of the proposed construction area and final restoration area.
3. Description of impacts to willow-mulefat woodland, mulefat scrub, riverine and alluvial fan scrub
4. Mitigation ratios of 1:1 for replacement/restoration.
5. Project goals.
6. Project implementation, including recontouring of the borrow site to provide low and high points for natural recovery of willow-mulefat woodland, mulefat scrub, riverine and alluvial fan scrub habitat.

7. Site preparation methods
8. Planting program
9. Monitoring requirements
10. Success criteria and implementing steps to ensure success
11. Reporting requirements
12. Adaptive Management Strategy
13. Protective measures to address indirect impacts
14. Financing
15. Responsible Parties

The restoration area will be placed in a conservation easement to protect the site in perpetuity. The easement shall be recorded with the County Recorder. At this time, the ownership of the easement is proposed to come under the jurisdiction of the property management staff for the development. The project proponent is also pursuing dedication of the conservation easement to either the Riverside Land Conservancy (RCL) or the San Jacinto Basin Resource Conservation District (SJCD).

6.0 Findings on Conserved Habitats, Riparian Linkages and Functions

There will be no net loss of riparian/riverine habitats after mitigation has been implemented.

The loss of alluvial fan scrub, willow-mulefat woodland, willow scrub and riverine habitat will be mitigated on site as part of the borrow site rehabilitation. The borrow site area will be contoured to maximize surface area for the restoration of these habitats.

There will be no permanent change to the linkage of Box Springs Channel upstream or downstream from existing conditions. The flow of Box Springs Channel will be widened to increase the availability of riparian habitat. This will also increase available water.

The project developer will work with the resource agencies and qualified consultants to develop a detailed restoration plan for the loss of riparian/riverine resources. In addition, NRAI recommends:

1. No trespass beyond that already delimited by construction limits shall occur into jurisdictional waters.
2. No drainage for subsequent development will be designed to flow or be directed into this area. All final project design flows will be directed into a formal site collection system.

The project as currently designed impacts willow-mulefat woodland, mulefat scrub, riverine and alluvial fan sage scrub habitat. However, project design and the proposed mitigation measures as defined in Section 4.0 will result in a biologically equivalent or superior project relative to alternative design projects. The proposed project would:

1. Mitigate fully on site for impacts to willow-mulefat woodland, mulefat scrub, riverine and alluvial fan sage scrub habitat

2. Have no direct or indirect impact on proposed Riparian Linkages or Functions in adjacent Criteria Cells 719 or 634 or the larger MSHCP Conservation Area.

6.0 References

Hickman, J. C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press.

Faber, P.A., E. Keller, A. Sands, and S.M. Massey, 1989. *The Ecology of Riparian Habitats of the Southern California Coastal Region; A Community Profile*. U.S Fish and Wildlife Service Biological Report, 85(7.27). 152 pp.

Kartesz, J.T. 2013. Floristic Synthesis of North America, Version 1.0 Biota of North America Program (BONAP). (in press). http://www/bonap.org/

Munz, P.A., 1974. *A Flora of Southern California*. University of California Press, Berkeley, California.

Soil Survey Staff, Natural Resources Conservation Service, 2014. United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed May 1, 2014.

Williams, D. F., 1986. *Mammalian Species of Special Concern in California*. Wildlife Management Division Administrative Report 86-1. Prepared for The Resources Agency, California Department of Fish and Wildlife.

Zeiner, D. C., W. F. Laudenslayer, Jr., K. E. Mayer and M. White, 1990. *California's Wildlife*, Volume III Mammals. The Resources Agency, Department of Fish and Game, Sacramento, California.