Visual Impact Assessment

San Diego River Trail: Carlton Oaks Golf Course Segment

Project Description

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide path with 2-foot-wide shoulders. The main surface of the trail would be an all-weather firm surface, such as concrete, asphalt, heavily compacted and emulsified decomposed granite, compacted chipped stone, or concrete soils in natural colors so as not to appear dark like standard asphalt. Shoulders would be of compacted decomposed granite or compacted natural soils. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, tree replanting and restoration of disturbed areas within the golf course, including the relocation of the Fifth Hole Tee Box, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and would avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

The final design of walls, fencing, lighting and landscape treatments is not known at this time. This study identifies performance standards related to design and visual quality that would be followed final design.

Visual Setting

The proposed trail alignment extends from West Hills Parkway to Carlton Hills Boulevard along the south side of the Carlton Oaks Golf Course, north of the San Diego River, and through a portion of Mast Park West.

The visual setting of the area around the trail (the "study area") mostly consists of relatively large open spaces formed by the existing golf course and flood plain of the San Diego River. View from the existing trail and berm to the northeast are expansive, interrupted only by occasional mature trees found on the golf course. Northward views extend to an existing residential development made up of one and two story homes bordering the golf course. The upper portions of these houses are visible from many portions of the existing berm, but the residential structures are not prominent. Distant hills make up the horizon line behind the residential area to the north.

Views to the southwest from the berm are more restricted due to the thicker and taller vegetation growing within the San Diego River and its associated natural habitats. The river vegetation effectively blocks views of SR-52 which extends east-west along the south side of the river, within approximately 500 feet of the golf course. Refer to Photographs 1 and 2, which are views looking westward along the existing path, with the golf course on the right and river riparian vegetation on the left.

Within the eastern portion of the project site, the existing trail extends northward, then eastward toward Carlton Hills Boulevard, through San Diego River riparian areas, and alongside a seasonal pond. The trail in this area is edged on both sides with a post and rail fence, and dense riparian vegetation occurs both north and south of the trail, blocking far views. Refer to Photographs 3 and 4.

The existing trail within the project area varies in width, and some portions are more developed than others. The trail within photographs 1 and 2 is a narrow, informal footpath, while the trail in Photographs 3 and 4 is a more defined, graded trail. The portion that of the trail that exists within Mast Park, as shown in Photograph 4, is bordered on both sides with a post and rail fence.

At the west end of the project area, State Route 52 crosses over the river and golf course open space areas, and over West Hills Parkway, which creates the western boundary of the project area. SR-52 vaults over the area on a concrete viaduct supported by tall concrete pillars. Refer to Photographs 5 and 6.

The existing setting visual setting is mostly intact on the south and southwest side of the berm, with natural vegetation patterns formed by riparian based trees and mature shrubs that fill in between the pockets of larger trees. The setting north and northeast of the berm is more varied, but is harmonious and consistent in its patterns of open turf greens of the golf course punctuated with tree massings. These views are not of a visually intact natural area, but the undulating golf course landforms and groups of trees are supportive of a naturalized open space.



Photograph 1: Footpath next to the golf course.



Photograph 2: Footpath next to the golf course.



Photograph 3: Looking eastward along the existing trail next to the golf course.



Photograph 4: Looking eastward along the existing trail east of the golf course.



Photograph 5: SR-52 over San Diego River near the southwest corner of the project site.



Photograph 6: SR-52 over West View Parkway near the southwest corner of the project site.

West Hills Parkway creates a visual boundary to the golf course and open space within the project area on the northwest side, since it is higher in elevation than the golf course. The road is supported by a sparsely vegetated slope, screened from most views by trees within the golf course and the river. The SR-52 viaduct creates a strong horizontal line high above the road, the hill, and the golf course. The visual environment of the west end of the project, therefore, is less intact due to the contrast created by the strong horizontal lines of the roadways.

Similarly, the northwest corner of the project area abuts the residential lots, which also are higher in elevation than the golf course. Most of the residential lots are supported by sparsely vegetated slopes. The lots are lined with chain link fences, and the lot at the western edge of the neighborhood, next to West Hills Parkway, has a prominent concrete masonry unit wall visible from the golf course and the proposed trail location. The contrast between the golf course open spaces and the fences, houses, and the wall reduces the intactness of the visual environment of the project area.



Photograph 7: Northward from the northwest corner of the golf course



Photograph 8: Westward from the northwest corner of the golf course, toward West View Parkway.



Photograph 9: Southward toward the existing berm and retaining wall at Sixteenth Tee Box



Photograph 10: Northwestward toward the existing berm from the Sixteenth Tee Box.

Analysis of Visual Change

For the most part, the proposed project changes would not contrast with the existing visual environment, since the implantation of a hard-surface trail where a soft-surface trail currently existing would not create much visual change. The widening of the berm to accommodate the trail would require the removal of up to approximately 100 mature trees along either side of the existing berm, within the grading footprint. While golfers and trail users would see this change, only those already familiar with the area would notice the tree removal. Most of the golf course trees would remain, and most of the vegetation within the San Diego River open space would not be disturbed. Temporary disturbances to riparian vegetation along the San Diego River would occur in select areas along the berm to repair existing areas where substantial erosion is present, and in the western portion of the alignment for construction access. Construction activities would include erosion control and slope protection measures, and revegetation to replace riparian vegetation. Minor permanent impacts to riparian vegetation would occur in select areas on the San Diego River side of the berm as a result of drainage improvements, drainage crossings, and trail intersection geometry (i.e., connection to the existing dirt trail just west of the Carlton Hills Boulevard bridge).

Trees removed from the golf course would be replaced at a 1:1 ratio with native or locally appropriate trees species that match the current golf course tree palette. All replaced trees would be a mix of sizes at installation to mimic natural succession and the variety of trees in the area: approximately 25 percent would be 24-inch-boxes, approximately 50 percent would be 15-gallon containers, and approximately 25 percent would be 5-gallon containers. The golf course trees would be placed with consideration to several factors, including

1) Protecting trail users from errant golf balls
2) Providing shade and a windbreak for trail users;
3) Replacing native trees in masses along the river side of the berm;
4) Providing native trees and trees appropriate to the golf course along the golf course side of the berm; and
5) Replacing trees within the golf course that may be disturbed by construction.

Turf within the golf course disturbed by construction would be replaced in kind. The proposed project would not use invasive trees, shrubs, or ground covers. Because of the proposed tree planting and revegetation efforts, distant views from the trail would not substantially change, and views to the trail area also would be similar to existing conditions.

The trail surface would be wider, more refined and consistent along its length than the current gravel and compacted soil surface of the varying width trail. The landform changes of the berm itself would be noticeable during construction, but the final configuration of the berm would be mostly consistent with the current forms, and would not create a substantial visual contrast with the existing visual environment. The berm also would be vegetated, and the small degree of visual contrast created by new grading would be reduced over time as the vegetation grows.

Several low retaining walls, up to four feet high – one near the Fifth Hole Tee Box, and three near the Fifteenth Hole Tee Box – would be used in place of the berm where golf course features abut the trail. Two other walls, from one to seven feet tall, would be placed along the trail where it turns northward

near the Sixteenth Hole Tee Box. A small, key-stone style wall existing in this area would be removed (refer to Photograph 9 and 10 for views of the existing locations where the new walls would be placed). The proposed retaining walls would be approximately as tall as the existing berm, and would face toward the golf course. They would be visible by golfers, but not by trail users. The new walls would be constructed with color and texture selected to resemble features within the golf course. Several short retaining walls currently exist within the golf course along the trail berm and edging ponds, sand traps, and water hazards. Designs to be considered include plantable concrete blocks; textured concrete; post and timber walls; and wooden planks. New walls could include texture and natural colors, and could include poured-in-place concrete (with formliners), textured block (such as split-face CMU), shotcrete or other sand-blasted surfaces. None of the new walls would be unfinished, smooth concrete or block, since these would contrast with the existing visual environment and would encourage graffiti. Careful design consideration to the materials and colors of the new walls would ensure the visual similarity of the new walls to the existing golf course and to ensure that the new retaining walls would not create a substantial visual contrast.

The Fifth Hole Tee Box would be shifted slightly northward, the Fifteenth Hole Tee Box would be temporarily reduced in size then reconstructed to its existing configuration. The existing golf cart path near the Fifth, Fifteenth, and Sixteenth Hole Tee Boxes would be shifted northward during construction of the project. The cart path would be reconstructed near its current alignment after project construction. The changes to the paths and Tee Boxes would not be highly visible because the final configuration would be visually similar to the existing golf course.

The project includes the installation of a post and rail fence system, such as illustrated in the isometric view of a typical segment of the trail, and in the cross-sections along both sides of its entire length. The fencing would consist of a post and rail or post and cable system, using natural or synthetic materials that resemble wood in color and texture. This fence would resemble the existing fence along the eastern portion of the trail (as shown in Photograph 4). Where necessary for safety reasons, a six- to ten-foot tall safety fence would be installed along some short sections of the trail near the Third, Fourth, Fifth, and Fifteenth Fairways to protect trail users from errant golf balls. The safety fence could be constructed from a variety of materials, such as wood framed, welded wire mesh, or chain link. Galvanized materials should not be used as the final finish, rather a black, brown, or dark green coating of the fence fabric would be used since galvanized materials are more noticeable and create higher contrast than darker colors. Several other options could be used to reduce the visibility of the safety fence, including angling the top of the fence, which would reduce the required height (an angled top is shown in Section B). Whichever material is used, the taller safety fence would be the most visible element of the fencing system, both from the trail itself and from the golf course. Color and material could reduce the visibility of the safety fence, as could vegetation. Remaining mature trees in the area would be, for the most part, taller than the proposed fence, which would ensure that the fence would not be out of scale with the visual environment of the area. Additionally, new trees planted to replace trees removed during construction would be located to screen the safety fencing. The following cross-sections illustrate the existing and proposed trail configurations and fencing. Figures 1a and 1b show the location of each cross-section.

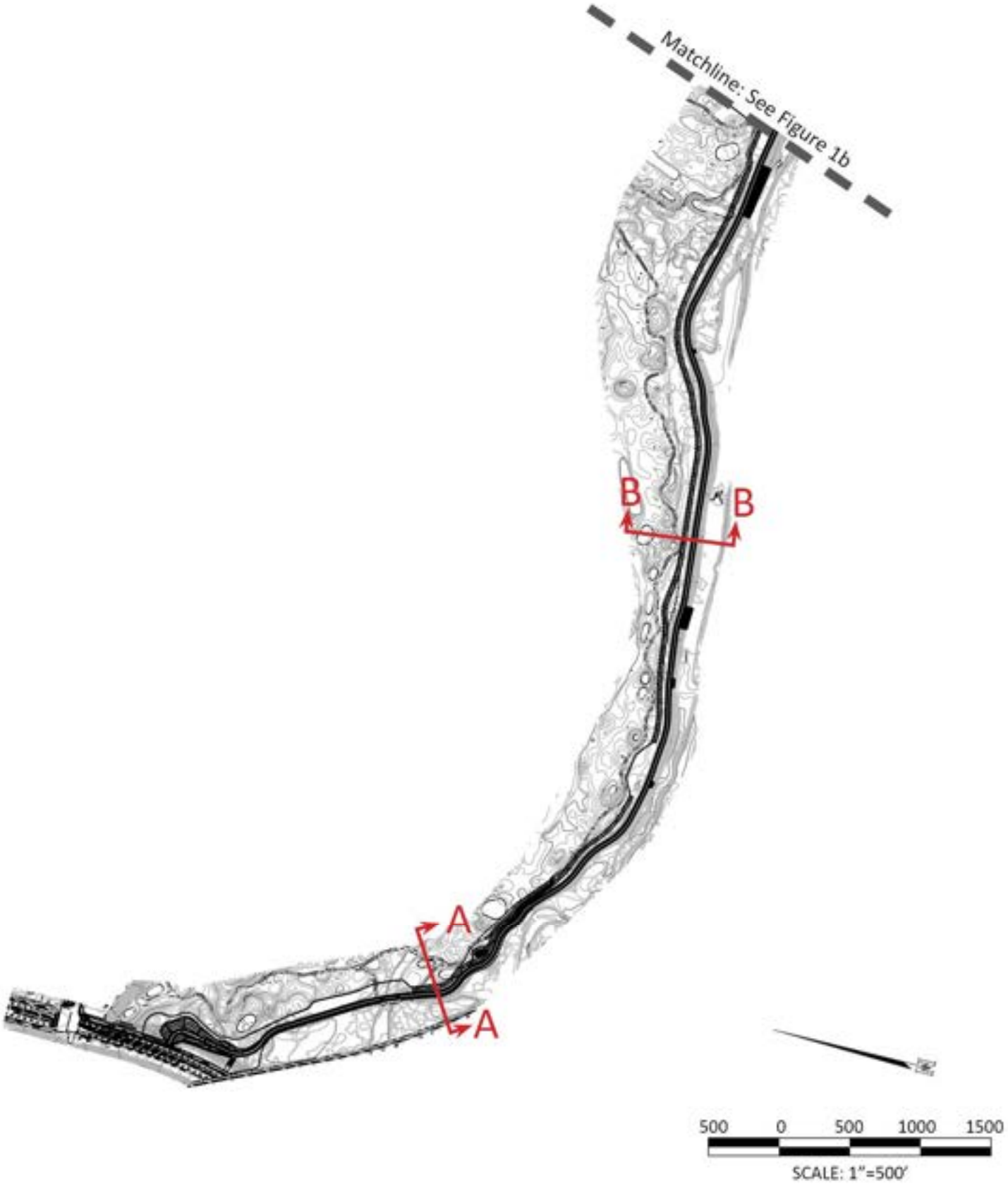


Figure 1a: Section Location Map

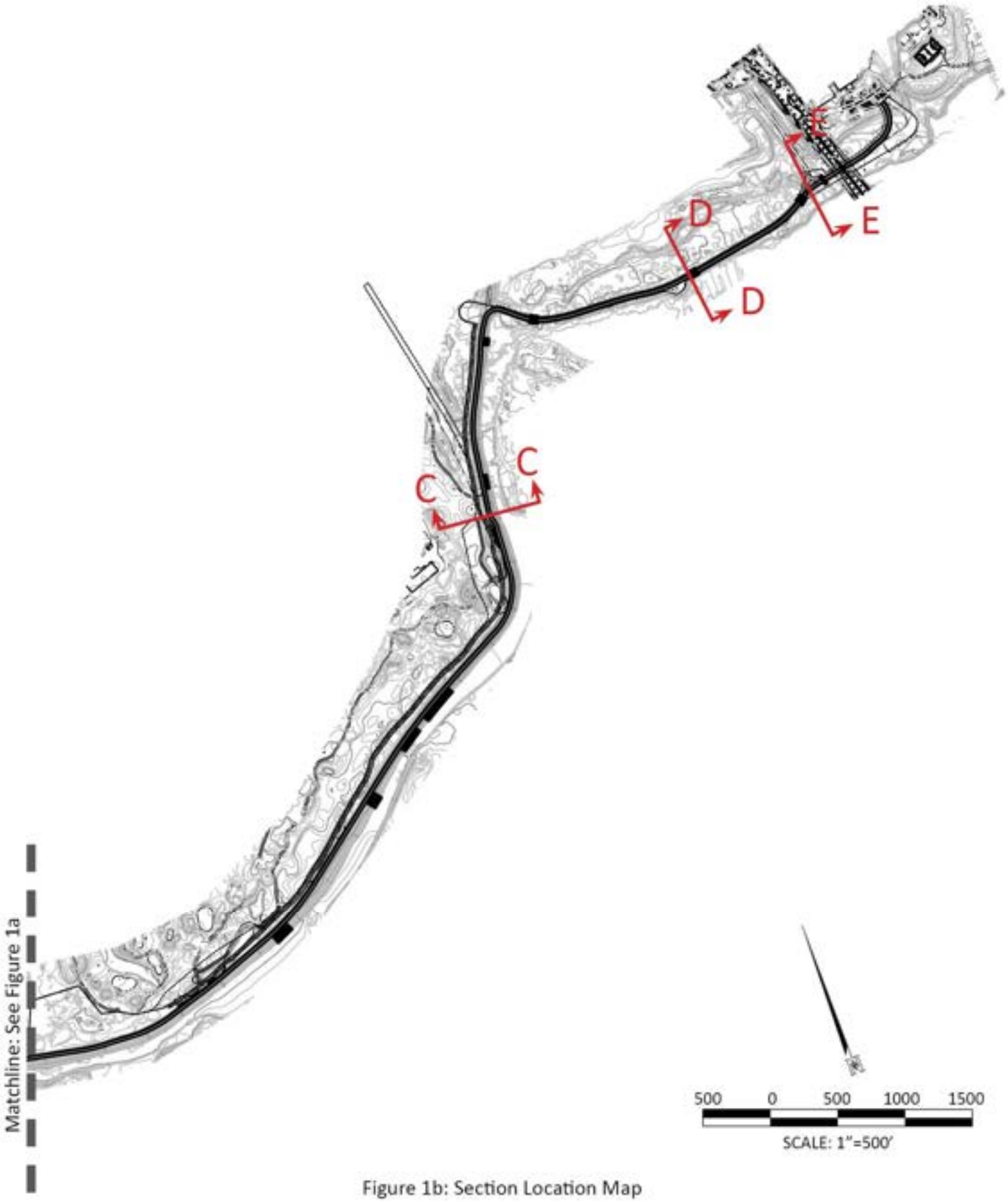


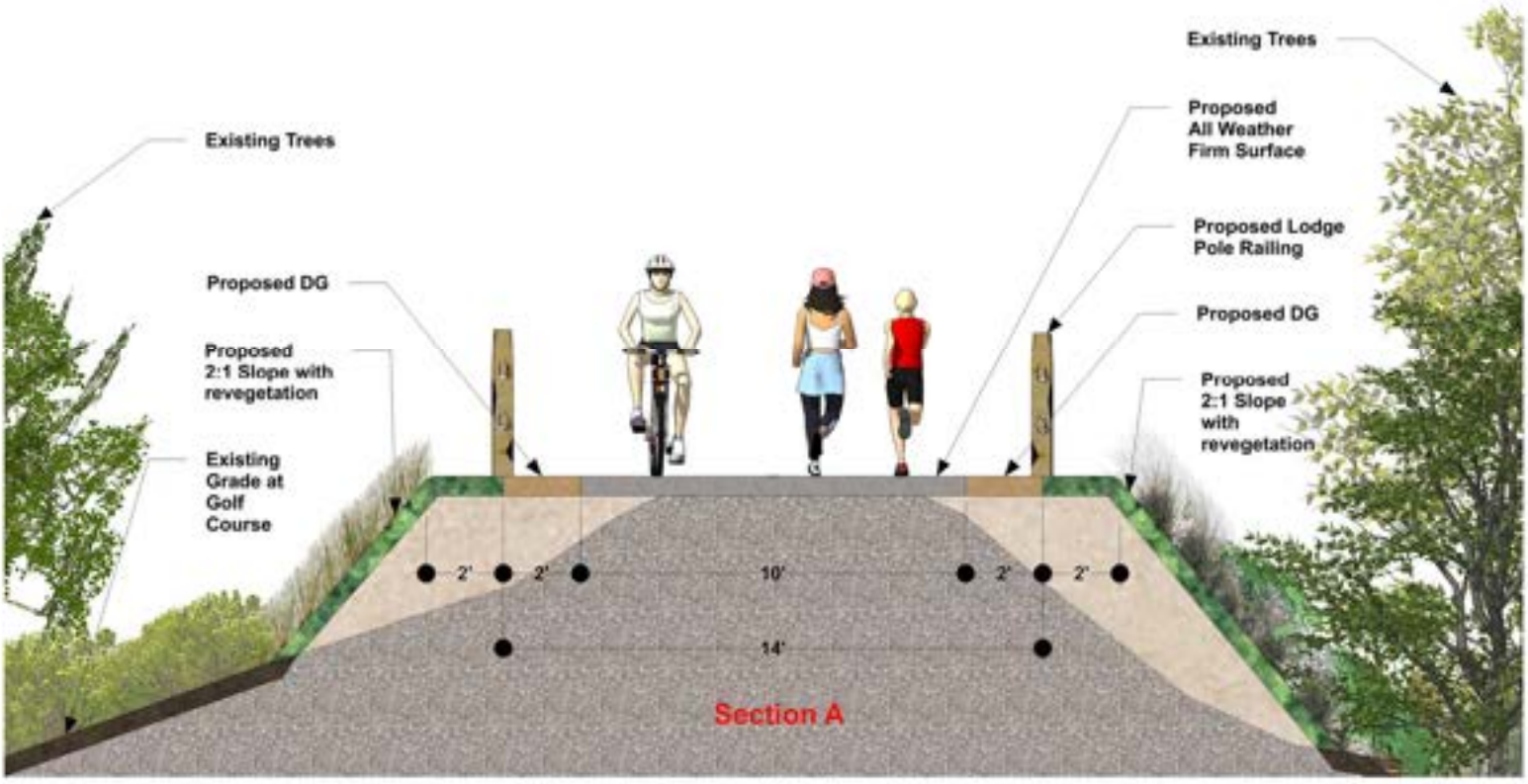
Figure 1b: Section Location Map



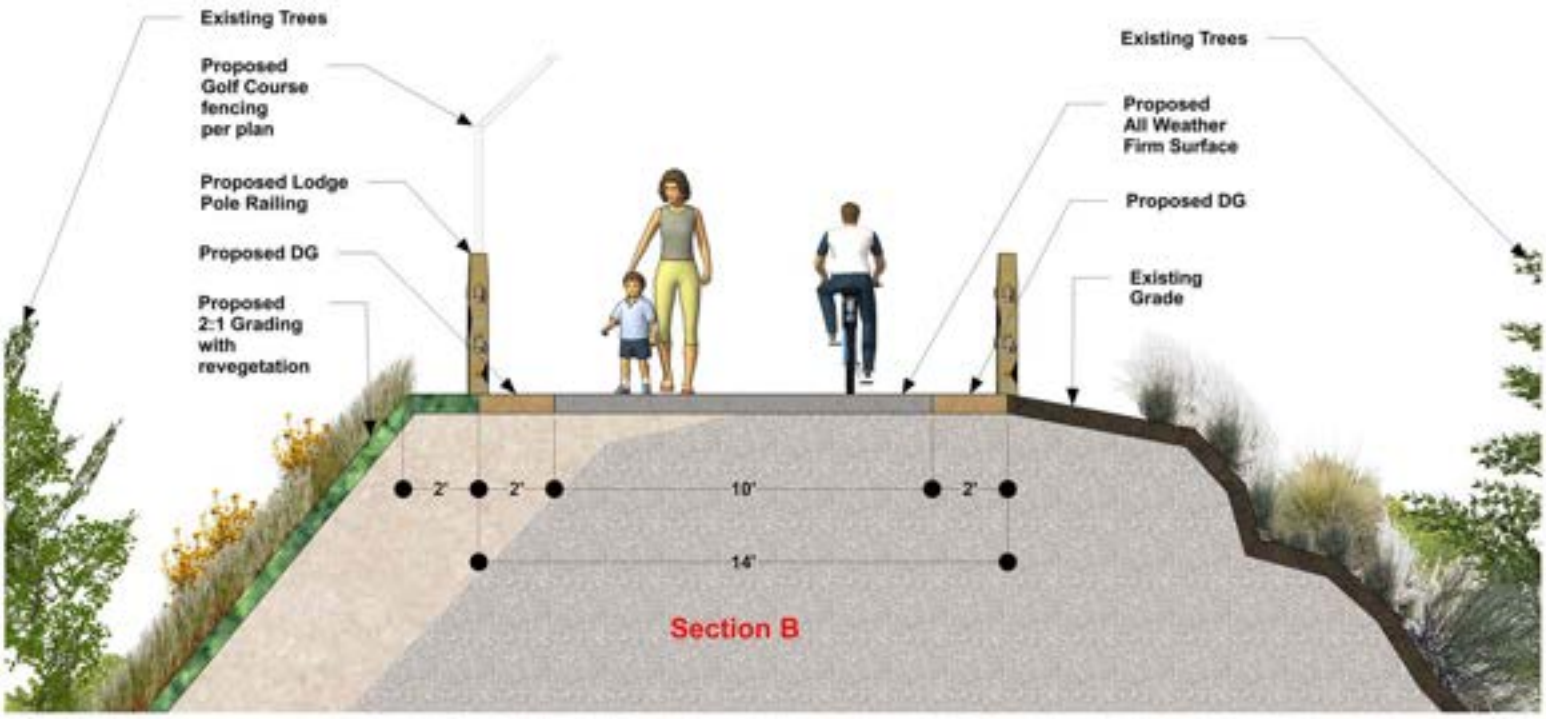
Isometric view - Typical Berm and Trail configuration

<< Carlton Oaks Golf Course

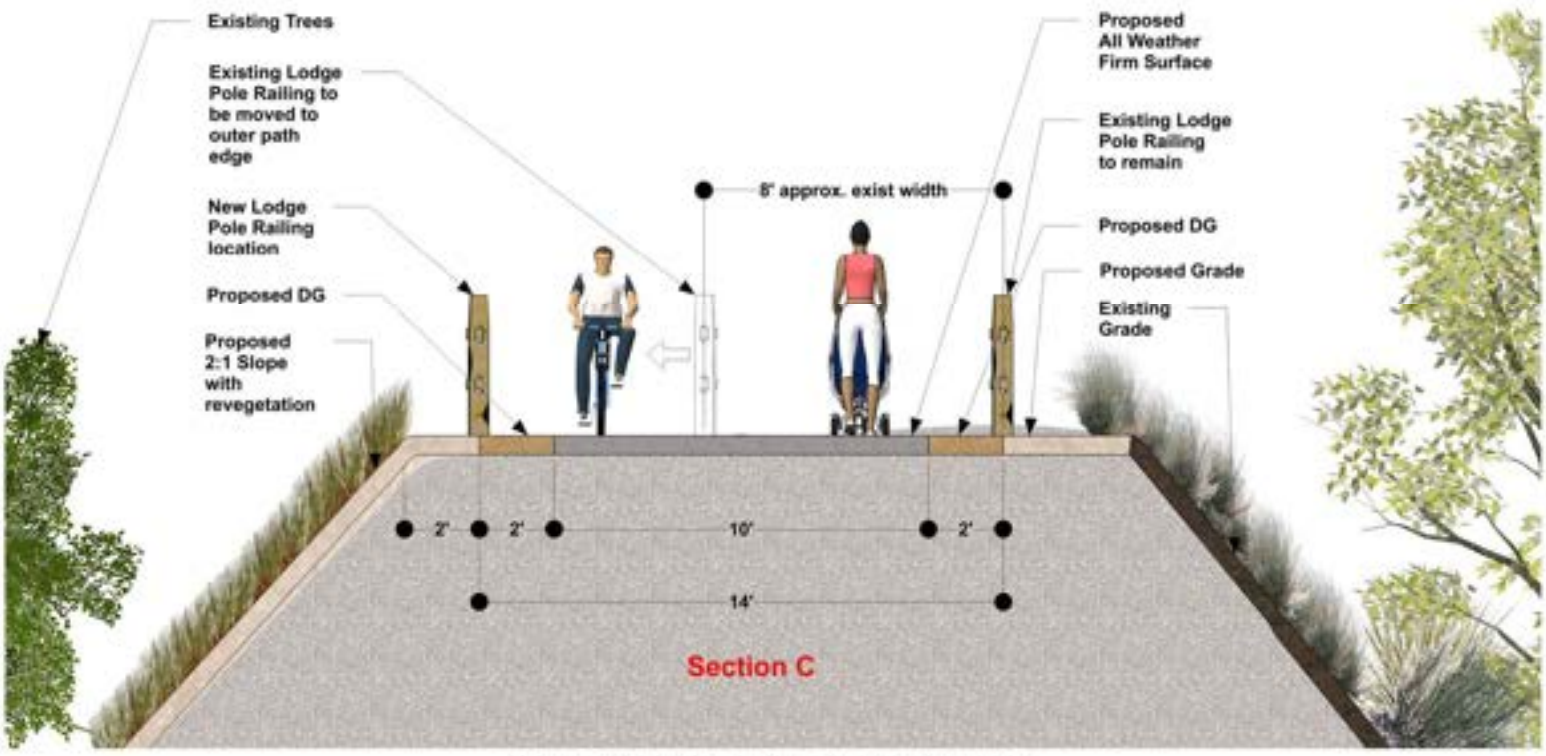
San Diego River >>



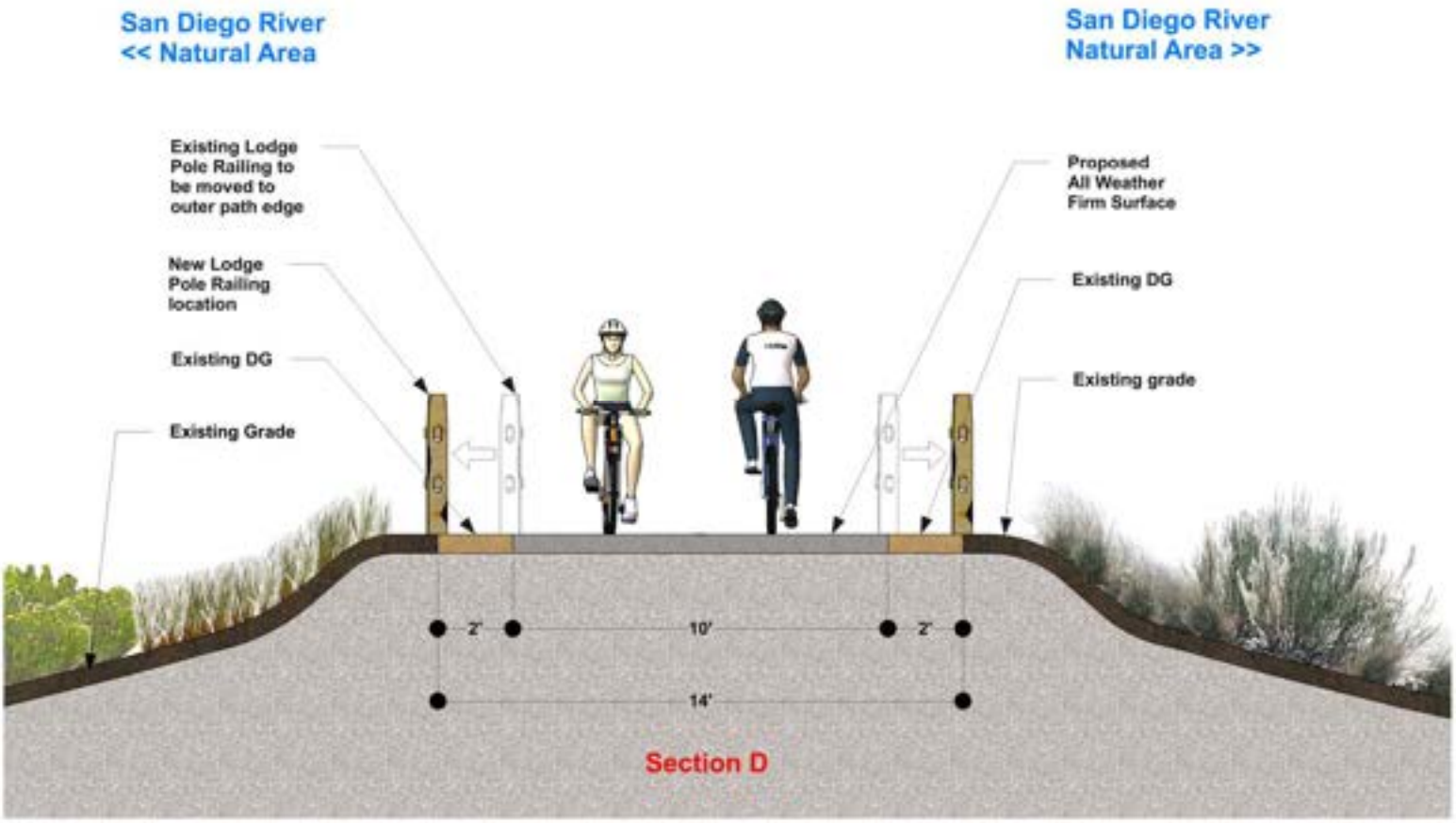
Section A - Berm and Trail configuration



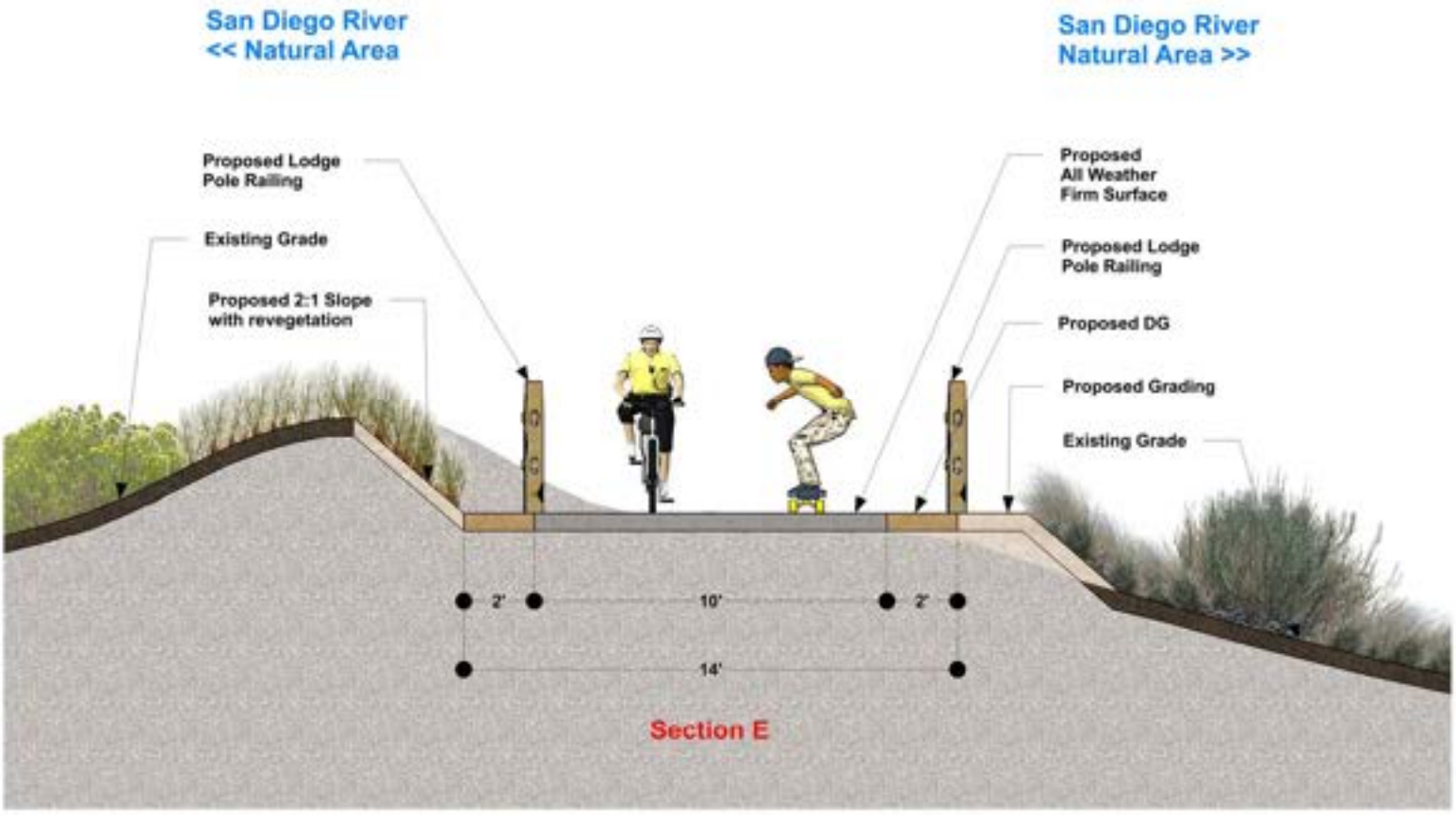
Section B - Berm and Trail configuration



Section C - Berm and Trail configuration



Section D - Berm and Trail configuration



Section E - Berm and Trail configuration

The proposed project could include lighting. If so, lighting would be in conformance with the San Diego River Park Master Plan or City of Santee Parks Standards. The lighting would be fixtures on 8- to 12-foot tall poles, shielded to avoid light spillover into the sensitive habitat areas. The poles and fixtures would be natural colors, such as sand color, and the fixtures would be triangular in shape. The design of the lighting should ensure that a consistent level of lighting is provided for safety purposes, avoiding abrupt bright and dark areas along the trail. A system sensing trail users to turn on and off the lighting also will be considered.

Grading activities associated with the connection to West Hills Parkway also would create a visible change in the project area. Three options are available for the configuration of this connection. Each includes a staircase that would connect the trail to West Hills Parkway just north of the SR-52 overpass, a ramp, and slopes at a 2:1 (horizontal: vertical) steepness. Refer to Figures 2a through 2c and Sections F through H for illustrations of these options.

In the first option (Figure 2a and Section F) the trail ramp would connect to West Hills Parkway approximately 500 feet south of Carlton Oaks Drive. It also includes proposed minor roadway reconfigurations on West Hills Parkway to accommodate a bike lane from the trail connection northward to Carlton Oaks Drive. The first option does not have a retaining wall.

The second option (Figure 2b and Section G) would have a switch-back ramp that would connect the trail to the top of the staircase, and would connect to West Hills Parkway just north of the SR-52 overpass. A retaining wall up to seven feet tall would be needed to support the ramp.

The third option (Figure 2c and Section H) would have a wall ramp that would meet West Hills Parkway about 100 feet south of Carlton Oaks Drive. This option also includes a retaining wall that would be up to 15 feet tall.

Each of these options would require a slope to support the path and would be up to 20 feet tall. The slope would be similar in configuration and height to the existing slope below West Hills Parkway, but would be located about 75 feet east of the existing slope. Before completion of construction, exposed slopes would be planted with vegetation to lessen the contrast with the surrounding visual environment. The small degree of contrast upon completion of construction would continue to dissipate over time as the vegetation grows and matures. Vegetation and wall design treatments also would lessen the contrast the retaining wall may create in the visual environment of the area.

The changes would not be visible from the roadway, except the first option's bike lanes, which would require some reconfiguration of the existing lanes. The other two options would utilize the existing bike lane on West Hills Parkway. The proposed bike lane would not be highly visible, since it would be substantially similar in appearance to the existing roadway configuration.

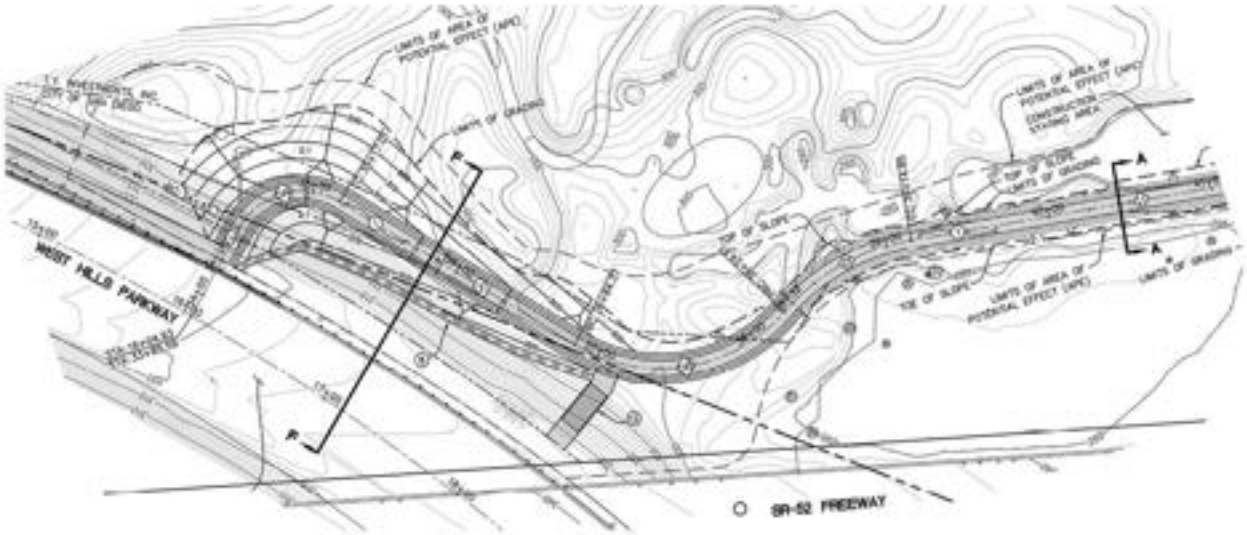


Figure 2a - Connection to West Hills Parkway Option 1

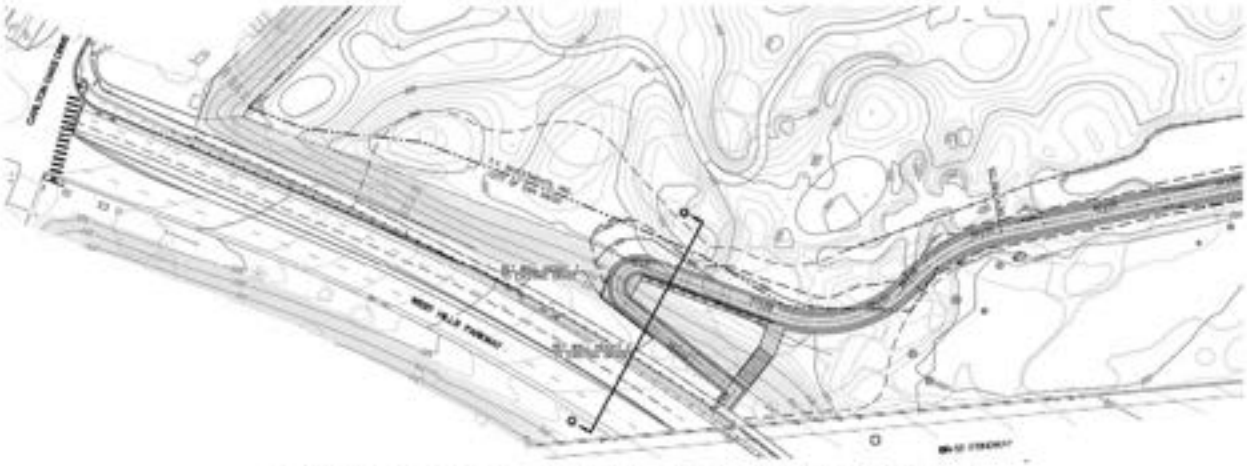


Figure 2b - Connection to West Hills Parkway Option 2

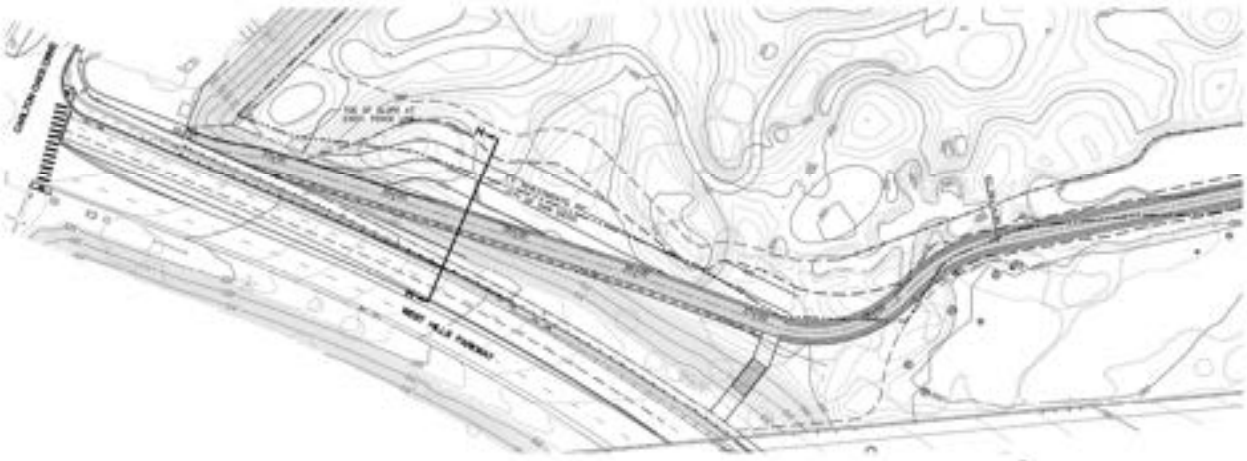
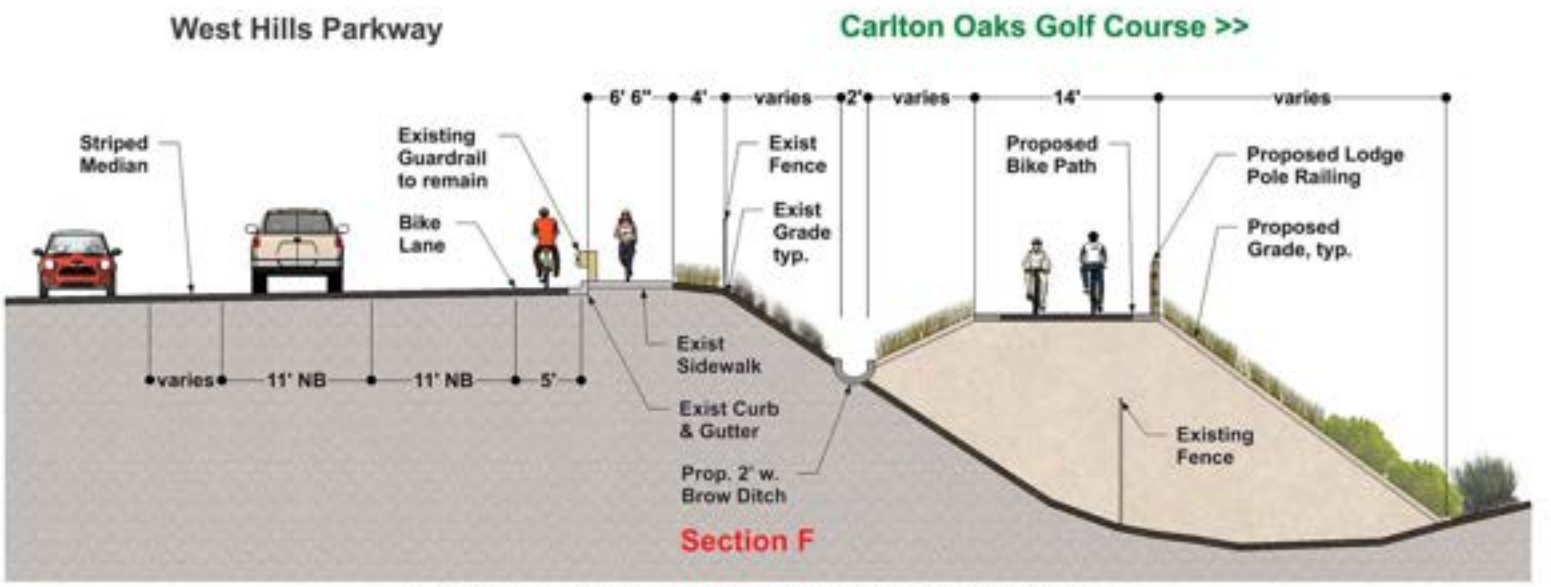


Figure 2c - Connection to West Hills Parkway Option 3

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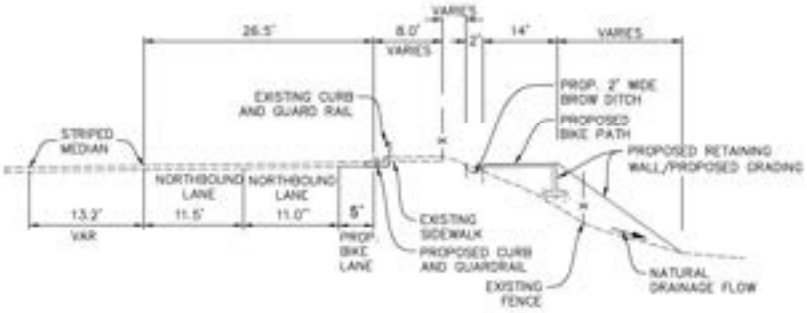
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Section F - Connection to West Hills Parkway Option 1



Section G - Connection to West Hills Parkway Option 2



Section H - Connection to West Hills Parkway Option 3

Viewer Groups

The existing viewer groups consist of trail users, who are mostly hikers and nature observers, along with the occasional runner or mountain biker. Other users in the proximity of the proposed project include golfers and the more distant residential inhabitants. Approximately 60 houses are aligned along the north edge of the golf course. Their back yards look over the course, and they may have some limited views of the trail and the proposed trail areas if walls along the back edge of their properties or vegetation in their yards or within the golf course don't block views southward. The westernmost dozen residents may see the proposed connections to West Hills Parkway, where walls and vegetation along southwest to western views. Some limited views of the area exist along West Hill Parkway and State Route 52, which would provide views to drivers on these roadways.

Contrast with Existing Setting

The proposed changes, as shown on the cross sections, would moderately contrast with the current setting. This contrast would occur initially with the removal of some mature trees and the overall width increase of the trail. However, without a before and after direct comparison, a user of the golf course or trail, is not likely to be aware of the changes, or to perceive them as being in stark contrast to the existing setting. With tree planting to replace removed trees and growth of trees and ground cover on the slopes, this contrast would be substantially reduced. Over a longer time, the visual contrast would be minor.

The fences lining the trail would be a noticeable element within the study area, visible both from the trail and from the surrounding area. The minimal height of the proposed fence and its similarity to the fence lining the trail within Mast Park, however, would ensure that the fence would not highly contrast with the visual environment within the study area. Minimal use of a safety fence in strategic areas along the north side of the trail to protect users from errant golf balls, on the other hand, has the potential to create a high level of contrast. It would briefly screen views from the trail, and may be noticeable from the golf course, as a tall, manufactured element in an area currently consisting of natural elements.

Additionally, the retaining walls along the trail at the southern edge of the golf course and retaining walls that would support the trail connection to West Hills Parkway at the west end of the project have the potential to create noticeable contrast visible by trail users, golfers, and residents. A retaining wall may be visually similar to the existing walls associated with a neighboring residential lot at the top of the slope in this area, however the walls, which would be between two and seven feet tall, may be stark, vertical surfaces, that would moderately contrast with the existing slopes north and west of the golf course. The slopes currently are sparsely vegetated, with some variety of color and texture, where a retaining wall, unless it accommodates vegetation, would provide less visual variety.

Likely Response from Viewer Groups

Overall, while the proposed project would cause some noticeable changes to the visual environment of the study area, the proposed project elements would moderately contrast with the existing visual environment and the change would not be highly noticeable to most viewers. The visual change would be reduced over time as vegetation matures, and the long-term visual change to the project area would be minor.

Hiker and nature observers are the viewer group that would be the most sensitive to changes in the visual environment of the area. However, the contrast of the proposed changes, as discussed above, would not be enough to suggest that the most users would respond negatively. In fact, some of the edges of the trail system would be improved to a more consistent and higher quality view that is more organized than the current situation. In addition, more individuals would be provided access to areas of high scenic quality of both the natural river flood plain and the opens space aspects of the golf course. Golfers would see an edge to their golf course that is slightly less natural and wild in appearance, particularly where retaining walls are proposed and where the chain link protection fence would be located. However, their perception of the intactness of the berm and the natural areas behind the berm are not likely to be negative.

The proposed retaining walls would be visible mostly to golfers and trail users. Drivers would not see the new walls, although residents along the north edge of the golf course may see the walls from their back yards. Construction of the walls with materials similar to those in use at the golf course currently would ensure that the walls would not highly contrast with the existing visual environment, and the viewers would not have a negative reaction.

Findings

Construction of the proposed project would necessitate the removal of existing mature trees along the length of the trail, but also would replace trees on the golf course to provide visual screening of the proposed safety fences. The slopes of the enlarged berm would also be vegetated. The initial contrast caused by vegetation removal and grading of the berms and the connection to West Hills Parkway would be moderate, and would dissipate over time as the trees and vegetation planted by the project matures. The long-term change to the visual environment due to vegetation removal would be minor.

The post and rail fence treatments would not be considered a contrast or negative impact on the existing character of the area; it would be consistent with the existing fence along the eastern portion of the trail. The use of carefully designed safety fences would ensure that the potential contrast and brightness of a metallic chain link fence would be avoided. Additionally, new trees placed to screen the proposed safety fence from views for golfers and residents would ensure that the resulting visual contrast caused by safety fences would be minor.

Most of the proposed retaining walls would only be seen by golfers, particularly if trees and shrubs are used to screen walls from more distant views from residences. Trail users would not see most of the wall, since they would be below the trail and facing the golf course. The use of retaining wall

materials that are visually similar to existing retaining walls within the golf course also would reduce the potential visual contrast created by the introduction of walls along the trail edge. The overall contrast caused by the walls would be moderate.

The inclusion of lighting would create some visual contrast within the project area. Currently, limited lighting exists in the area. The only area of the golf course that currently has lighting is the club house and parking lot. The introduction of lighting in an area that currently has none would be noticeable from residential areas north of the site and from nearby roadways. The light standards and fixtures would conform to the San Diego River Park Master Plan or City of Santee Park Standards, and the use of shielded fixtures would ensure that the lighting would create a moderate level of visual contrast at night. The use of natural colors and shielded light would reduce the potential visual contrast of the features during the daytime, and the light poles and fixtures would create a minor visual contrast.

Overall, the project's incorporation of slope revegetation, tree replanting, fence treatments, and use of retaining wall materials similar to existing walls would ensure that the overall visual change and contrast would be low and the existing character of the area would be maintained.

January 10, 2017

Stephan Vance, Senior Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Subject: Air Quality and Greenhouse Gas Emissions Technical Analysis for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Mr. Vance:

This letter summarizes the air quality and greenhouse gas (GHG) emissions analysis for the proposed San Diego River Trail (SDRT) – Carlton Oaks Golf Course Segment Project (project). The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, a portion of the Carlton Oaks Golf Course, and adjacent to the southern edge of the golf course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/ agreement from property owners before they could be used for construction access. Project grading would require approximately 10,000 cubic yards of fill to be imported to the site.

Methodology and Assumptions

Criteria air pollutant and GHG emissions resulting from construction of the proposed project were quantified using the Road Construction Emissions Model (Roadway Model) Version, 8.1.0, developed by the Sacramento Metropolitan Air Quality Management District (SMAQMD). The Roadway Model contains OFFROAD2011 emission factors and EMFAC2014 emission factors from the California Air Resources Board's (CARB's) models for off-road equipment and on-road vehicles (SMAQMD 2016). Emissions modeling conservatively assumes construction of the east Phase and west Phase would occur simultaneously. Because the proposed project is a bikeway that would support walking and biking, it would not increase long-term air pollutant or GHG emissions in the project area, and therefore operational emissions were not modeled. By supporting walking and biking, the proposed project would contribute to lower air pollutant and GHG emissions by decreasing passenger vehicle use and vehicle miles traveled.

The analysis assumes that total construction duration would be approximately one year and project grading would require approximately 10,000 cubic yards of fill material to be imported to the project site. For purposes of calculating air and GHG emissions during construction of the proposed project, construction of the east phase and west phase is divided into the following types of construction activities: grubbing/land clearing, grading/excavation, drainage/utilities/sub-grade, and paving. Sources of construction air pollutant and GHG emissions include: off-road diesel equipment exhaust, construction worker commuting and soil hauling vehicle exhaust, re-entrained paved road dust, and fugitive dust from land clearing.

Table 1 presents the type and amount of construction equipment and vehicles that would be used during each type of construction activity for the east phase and west phase of project construction. A complete listing of the assumptions used in the analysis and the model outputs are provided in Attachment A.

Table 1
CONSTRUCTION EQUIPMENT ASSUMPTIONS BY PHASE

Construction Activity and Equipment/Vehicle Type	Number of Pieces[1]		Horsepower[2]
	East Phase	West Phase	
Grubbing/Land Clearing			
Crawler Tractors	1	1	208
Excavators	1	1	163
Signal Boards	2	2	20
Grading/Excavation			
Cranes	1	1	226
Crawler Tractors	1	1	208
Excavators	2	2	163
Rollers	1	1	81
Rubber Tired Loaders	1	1	200
Signal Boards	2	2	20
Tractors/Loaders/Backhoes	2	2	98

Table 1 (cont.)
CONSTRUCTION EQUIPMENT ASSUMPTIONS BY PHASE

Construction Activity and Equipment/Vehicle Type	Number of Pieces[1]		Horsepower[2]
Drainage/Utilities/Subgrade			
Air Compressors	1	1	106
Generator Sets	1	1	66
Plate Compactors	1	1	8
Pumps	1	1	53
Signal Boards	2	2	20
Tractors/Loaders/Backhoes	2	2	98
Paving			
Pavers	1	1	126
Paving Equipment	1	1	131
Rollers	1	1	81
Signal Boards	2	2	20
Tractors/Loaders/Backhoes	1	1	98

Notes:
[1] Amount of equipment was received from Nasland Engineering, the project's design engineer (pers. comm. 2016).
[2] Equipment horsepower contained in Roadway Model.

Criteria Air Pollutant Emissions

Construction of the proposed project would generate short-term criteria air pollutant emissions, including Reactive Organic Gases (ROG), Oxides of Nitrogen (NO_X), carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$). An estimate of the maximum daily emissions of each criteria air pollutant during each proposed project construction phase is presented in Table 2.

The San Diego Air Pollution Control District (SDAPCD) does not provide quantitative thresholds for determining the significance of construction or mobile source-related air quality or GHG impacts under the California Environmental Quality Act (CEQA). However, the district does specify Air Quality Impact Analysis (AQIA) trigger levels for new or modified stationary sources (APCD Rules 20.2 and 20.3). If these incremental levels for stationary sources are exceeded, an AQIA must be performed for the proposed new or modified source. Although these trigger levels do not generally apply to mobile sources or general land development projects, for comparative purposes these levels may be used to evaluate the increased emissions which would be discharged to the San Diego Air Basin from proposed land development projects.

SDAPCD Rule 20.2, which outlines these screening level thresholds, states that any project "which results in an emissions increase equal to or greater than any of these levels, must:

> *"demonstrate through an AQIA … that the project will not (A) cause a violation of a State or national ambient air quality standard anywhere that does not already exceed such standard, nor (B) cause additional violations of a national ambient air quality standard anywhere the standard is already being exceeded, nor*

> *(C) cause additional violations of a State ambient air quality standard anywhere the standard is already being exceeded, nor (D) prevent or interfere with the attainment or maintenance of any State or national ambient air quality standard."*

For projects whose stationary-source emissions are below these criteria, no AQIA is typically required.

While these thresholds were intended for stationary sources of emissions, SANDAG has determined that they are appropriate to use for evaluating the proposed project's construction air pollutant emissions (e.g., stationary and fugitive emissions, as well as emissions from mobile sources). The hourly and yearly screening level thresholds are most appropriately used in situations when temporary emissions like emergency generators or other stationary sources are proposed as a part of a project. The daily screening level thresholds are most appropriately used for the standard construction and operational emissions. When project emissions have the potential to approach or exceed the screening level thresholds, additional air quality modeling may need to be prepared to demonstrate that ground level concentrations resulting from project emissions (with background levels) will be below Federal and State Ambient Air Quality Standards. Therefore, emissions associated with construction of the proposed project were compared to SDAPCD's AQIA Trigger Levels as contained within SDAPCD Regulation II, Rule 20.2. As shown in Table 2, criteria pollutant emissions associated with project construction would be below these levels.

Table 2
ESTIMATED MAXIMUM DAILY CONSTRUCTION EMISSIONS

Construction Activity	Pollutant Emissions (pounds per day)				
	ROG	**NOx**	**CO**	**PM_{10}**	**$PM_{2.5}$**
Grubbing/Land Clearing	2.4	28.0	15.1	3.7	1.6
Grading/Excavation	7.3	82.4	45.0	6.6	4.2
Drainage/Utilities/Sub-Grade	4.9	38.4	33.0	5.2	3.2
Paving	2.9	28.2	22.4	1.7	1.6
Maximum Daily Emissions	**7.3**	**82.4**	**45.0**	**6.6**	**4.2**
SDAPCD Trigger Levels	137	250	550	100	55

Source: Roadway Model emissions modeling by HELIX 2016 (output data is provided in Attachment A).

Greenhouse Gas Emissions

In addition to criteria air pollutants, proposed project construction also would generate GHG emissions associated with off-road diesel equipment exhaust, and from worker and truck trips to and from the project site. The primary emissions would be CO_2 from gasoline and diesel combustion, with more limited vehicle tailpipe emissions of N_2O and CH_4. Emissions of GHG are presented in carbon dioxide equivalents (CO_2e), which is a metric used to compare the emissions from various GHGs based on their global warming potential. The CO_2e of a gas is determined by multiplying the tons of that gas by its global warming potential. Total GHG

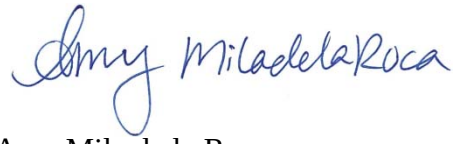
emissions during project construction (east phase and west phase) are presented in Table 3. These construction GHG emissions estimates will be used to support preparation of the proposed project's CEQA documentation.

Table 3
CONSTRUCTION GHG EMISSIONS (MT/yr)

Construction Activity	CO_2e
Grubbing/Land Clearing	40.7
Grading/Excavation	511.8
Drainage/Utilities/Sub-Grade	191.5
Paving	66.0
TOTAL	**810.0**

Source: Roadway Model emissions modeling by HELIX 2016 (output data is provided in Attachment A).

Sincerely,



Amy Mila de la Roca
Air Quality Specialist
HELIX Environmental Planning, Inc.

Attachment

Attachment A: Roadway Model Emissions

References

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January. Available at: http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf.

Nasland Engineering. 2016. Email communication between Waisbord, S. and Belzman, T. of HELIX Environmental Planning, Inc. October 10.

Sacramento Metropolitan Air Quality Management District (SMAQMD). 2016. Road Construction Emissions Model, Version 8.1.0. Available: http://www.airquality.org/LandUseTransportation/Documents/RoadConstructionEmissionsModelVer8_1_0_locked_05262016.xls. May.

San Diego Association of Governments (SANDAG). 2015. *San Diego Forward: The Regional Plan.* Available at: http://www.sdforward.com.

2010 *Riding to 2050, the San Diego Regional Bicycle Plan.*

Attachment A

ROADWAY MODEL EMISSIONS

Road Construction Emissions Model, Version 8.1.0

Daily Emission Estimates for -> SDRT - Carlton Oaks Golf Course

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	2.41	15.11	27.99	3.70	1.20	2.50	1.60	1.08	0.52	0.03	3,364.84	0.85	0.04	3,396.74
Grading/Excavation	7.32	44.97	82.39	6.59	4.09	2.50	4.24	3.72	0.52	0.09	9,404.67	2.48	0.10	9,498.00
Drainage/Utilities/Sub-Grade	4.91	33.02	38.36	5.24	2.74	2.50	3.16	2.64	0.52	0.06	5,296.52	0.72	0.05	5,329.13
Paving	2.87	22.40	28.17	1.70	1.70	0.00	1.55	1.55	0.00	0.04	3,640.40	0.93	0.04	3,675.13
Maximum (pounds/day)	7.32	44.97	82.39	6.59	4.09	2.50	4.24	3.72	0.52	0.09	9,404.67	2.48	0.10	9,498.00
Total (tons/construction project)	0.72	4.62	7.34	0.68	0.40	0.28	0.43	0.37	0.06	0.01	884.88	0.21	0.01	892.82

Notes:

Project Start Year ->	2017
Project Length (months) ->	12
Total Project Area (acres) ->	15
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	400	40
Grading/Excavation	200	0	200	0	400	40
Drainage/Utilities/Sub-Grade	0	0	0	0	400	40
Paving	0	0	0	0	400	40

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> SDRT - Carlton Oaks Golf Course

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.03	0.20	0.37	0.05	0.02	0.03	0.02	0.01	0.01	0.00	44.42	0.01	0.00	40.68
Grading/Excavation	0.43	2.67	4.89	0.39	0.24	0.15	0.25	0.22	0.03	0.01	558.64	0.15	0.01	511.82
Drainage/Utilities/Sub-Grade	0.19	1.31	1.52	0.21	0.11	0.10	0.13	0.10	0.02	0.00	209.74	0.03	0.00	191.45
Paving	0.06	0.44	0.56	0.03	0.03	0.00	0.03	0.03	0.00	0.00	72.08	0.02	0.00	66.01
Maximum (tons/phase)	0.43	2.67	4.89	0.39	0.24	0.15	0.25	0.22	0.03	0.01	558.64	0.15	0.01	511.82
Total (tons/construction project)	0.72	4.62	7.34	0.68	0.40	0.28	0.43	0.37	0.06	0.01	884.88	0.21	0.01	809.96

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

Road Construction Emissions Model Version 8.1.0

Data Entry Worksheet

Note: Required data input sections have a yellow background.
Optional data input sections have a blue background. Only areas with a yellow or blue background can be modified. Program defaults have a white background.
The user is required to enter information in cells D10 through D24, E28 through G35, and D38 through D41 for all project types.
Please use "Clear Data Input & User Overrides" button first before changing the Project Type or begin a new project.

To begin a new project, click this button to clear data previously entered. This button will only work if you opted not to disable macros when loading this spreadsheet.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Input Type

Project Name	SDRT - Carlton Oaks Golf Course	
Construction Start Year	2017	Enter a Year between 2014 and 2025 (inclusive)
Project Type	1	1) New Road Construction : Project to build a roadway from bare ground, which generally requires more site preparation than widening an existing roadway 2) Road Widening : Project to add a new lane to an existing roadway 3) Bridge/Overpass Construction : Project to build an elevated roadway, which generally requires some different equipment than a new roadway, such as a crane 4) Other Linear Project Type: Non-roadway project such as a pipeline, transmission line, or levee construction
Project Construction Time	12.00	months
Working Days per Month	22.00	days (assume 22 if unknown)
Predominant Soil/Site Type: Enter 1, 2, or 3 (for project within "Sacramento County", follow soil type selection instructions in cells E18 to E20 otherwise see instructions provided in cells J18 to J22)	2	1) Sand Gravel : Use for quaternary deposits (Delta/West County) 2) Weathered Rock-Earth : Use for Laguna formation (Jackson Highway area) or the lone formation (Scott Road, Rancho Murieta) 3) Blasted Rock : Use for Salt Springs Slate or Copper Hill Volcanics (Folsom South of Highway 50, Rancho Murieta)
Project Length	2.10	miles
Total Project Area	15.00	acres
Maximum Area Disturbed/Day	0.25	acres
Water Trucks Used?	1	1. Yes 2. No

Please note that the soil type instructions provided in cells E18 to E20 are specific to Sacramento County. Maps available from the California Geologic Survey (see weblink below) can be used to determine soil type outside Sacramento County.

http://www.conservation.ca.gov/cgs/information/geologic_mapping/Pages/googlemaps.aspx#regionalseries

Material Hauling Quantity Input

Material Type	Phase	Haul Truck Capacity (yd^3) (assume 20 if unknown)	Import Volume (yd^3/day)	Export Volume (yd^3/day)
Soil	Grubbing/Land Clearing			
	Grading/Excavation	20.00	200.00	
	Drainage/Utilities/Sub-Grade			
	Paving			
Asphalt	Grubbing/Land Clearing			
	Grading/Excavation			
	Drainage/Utilities/Sub-Grade			
	Paving			

Mitigation Options

On-road Fleet Emissions Mitigation		Select "2010 and Newer On-road Vehicles Fleet" option when the on-road heavy-duty truck fleet for the project will be limited to vehicles of model year 2010 or newer
Off-road Equipment Emissions Mitigation		Select "20% NOx and 45% Exhaust PM reduction" option if the project will be required to use a lower emitting off-road construction fleet. The SMAQMD Construction Mitigation Calculator can be used to confirm compliance with this mitigation measure (http://www.airquality.org/ceqa/mitigation.shtml). Select "Tier 4 Equipment" option if some or all off-road equipment used for the project meets CARB Tier 4 Standard

The remaining sections of this sheet contain areas that can be modified by the user, although those modifications are optional.

Note: The program's estimates of construction period phase length can be overridden in cells D50 through D53, and F50 through F53.

Construction Periods	User Override of Construction Months	Program Calculated Months	User Override of Phase Starting Date	Program Default Phase Starting Date
Grubbing/Land Clearing		1.20		1/1/2017
Grading/Excavation		5.40		2/7/2017
Drainage/Utilities/Sub-Grade		3.60		7/22/2017
Paving		1.80		11/9/2017
Totals (Months)		12		

Note: Soil Hauling emission default values can be overridden in cells D61 through D64, and F61 through F64.

Soil Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation	20.00	30.00		10	200.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Grading/Excavation (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Paving (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,603.55	0.00	0.05	1,619.35
Hauling Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.03	0.16	0.68	0.05	0.02	0.01	707.36	0.00	0.02	714.32
Tons per const. Period - Grading/Excavation	0.00	0.01	0.04	0.00	0.00	0.00	42.02	0.00	0.00	42.43
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.01	0.04	0.00	0.00	0.00	42.02	0.00	0.00	42.43

Note: Asphalt Hauling emission default values can be overridden in cells D87 through D90, and F87 through F90.

Asphalt Hauling Emissions User Input	User Override of Miles/Round Trip	Program Estimate of Miles/Round Trip	User Override of Truck Round Trips/Day	Default Values Round Trips/Day	Calculated Daily VMT
Miles/round trip: Grubbing/Land Clearing		30.00		0	0.00
Miles/round trip: Grading/Excavation		30.00		0	0.00
Miles/round trip: Drainage/Utilities/Sub-Grade		30.00		0	0.00
Miles/round trip: Paving		30.00		0	0.00

Emission Rates	ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Grubbing/Land Clearing (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Grading/Excavation (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Paving (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,603.55	0.00	0.05	1,619.35
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pounds per day - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total tons per construction project	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Note: Worker commute default values can be overridden in cells D113 through D118.

Worker Commute Emissions	User Override of Worker Commute Default Values	Default Values		
User Input				
Miles/ one-way trip		20	Calculated	Calculated
One-way trips/day		2	Daily Trips	Daily VMT
No. of employees: Grubbing/Land Clearing	10	9	20	400.00
No. of employees: Grading/Excavation	10	22	20	400.00
No. of employees: Drainage/Utilities/Sub-Grade	10	19	20	400.00
No. of employees: Paving	10	15	20	400.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.04	1.51	0.17	0.05	0.02	0.00	403.73	0.01	0.01	406.12
Grading/Excavation (grams/mile)	0.04	1.51	0.17	0.05	0.02	0.00	403.73	0.01	0.01	406.12
Draining/Utilities/Sub-Grade (grams/mile)	0.04	1.51	0.17	0.05	0.02	0.00	403.73	0.01	0.01	406.12
Paving (grams/mile)	0.04	1.50	0.17	0.05	0.02	0.00	403.24	0.01	0.01	405.61
Grubbing/Land Clearing (grams/trip)	1.28	3.62	0.30	0.00	0.00	0.00	89.60	0.02	0.01	93.79
Grading/Excavation (grams/trip)	1.28	3.62	0.30	0.00	0.00	0.00	89.60	0.02	0.01	93.79
Draining/Utilities/Sub-Grade (grams/trip)	1.28	3.62	0.30	0.00	0.00	0.00	89.60	0.02	0.01	93.79
Paving (grams/trip)	1.28	3.60	0.30	0.00	0.00	0.00	89.51	0.02	0.01	93.67
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.09	1.49	0.16	0.04	0.02	0.00	359.98	0.01	0.01	362.27
Tons per const. Period - Grubbing/Land Clearing	0.00	0.02	0.00	0.00	0.00	0.00	4.75	0.00	0.00	4.78
Pounds per day - Grading/Excavation	0.09	1.49	0.16	0.04	0.02	0.00	359.98	0.01	0.01	362.27
Tons per const. Period - Grading/Excavation	0.01	0.09	0.01	0.00	0.00	0.00	21.38	0.00	0.00	21.52
Pounds per day - Drainage/Utilities/Sub-Grade	0.09	1.49	0.16	0.04	0.02	0.00	359.98	0.01	0.01	362.27
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.06	0.01	0.00	0.00	0.00	14.26	0.00	0.00	14.35
Pounds per day - Paving	0.09	1.48	0.16	0.04	0.02	0.00	359.54	0.01	0.01	361.82
Tons per const. Period - Paving	0.00	0.03	0.00	0.00	0.00	0.00	7.12	0.00	0.00	7.16
Total tons per construction project	0.01	0.20	0.02	0.01	0.00	0.00	47.51	0.00	0.00	47.81

Note: Water Truck default values can be overridden in cells D145 through D148, and F145 through F148.

Water Truck Emissions	User Override of	Program Estimate of	User Override of Truck	Default Values	Calculated
User Input	Default # Water Trucks	Number of Water Trucks	Miles Traveled/Vehicle/Day	Miles Traveled/Vehicle/Day	Daily VMT
Grubbing/Land Clearing - Exhaust		1		40.00	40.00
Grading/Excavation - Exhaust		1		40.00	40.00
Drainage/Utilities/Subgrade		1		40.00	40.00
Paving		1		40.00	40.00

Emission Rates	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Grubbing/Land Clearing (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Grading/Excavation (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Draining/Utilities/Sub-Grade (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,604.26	0.00	0.05	1,620.06
Paving (grams/mile)	0.07	0.35	1.54	0.10	0.04	0.02	1,603.55	0.00	0.05	1,619.35
Emissions	**ROG**	**CO**	**NOx**	**PM10**	**PM2.5**	**SOx**	**CO2**	**CH4**	**N2O**	**CO2e**
Pounds per day - Grubbing/Land Clearing	0.01	0.03	0.14	0.01	0.00	0.00	141.47	0.00	0.00	142.86
Tons per const. Period - Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	1.89
Pounds per day - Grading/Excavation	0.01	0.03	0.14	0.01	0.00	0.00	141.47	0.00	0.00	142.86
Tons per const. Period - Grading/Excavation	0.00	0.00	0.01	0.00	0.00	0.00	8.40	0.00	0.00	8.49
Pounds per day - Drainage/Utilities/Sub-Grade	0.01	0.03	0.14	0.01	0.00	0.00	141.47	0.00	0.00	142.86
Tons per const. Period - Drainage/Utilities/Sub-Grade	0.00	0.00	0.01	0.00	0.00	0.00	5.60	0.00	0.00	5.66
Pounds per day - Paving	0.01	0.03	0.14	0.01	0.00	0.00	141.41	0.00	0.00	142.80
Tons per const. Period - Paving	0.00	0.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.83
Total tons per construction project	0.00	0.00	0.02	0.00	0.00	0.00	18.67	0.00	0.00	18.86

Note: Fugitive dust default values can be overridden in cells D171 through D173.

Fugitive Dust	User Override of Max Acreage Disturbed/Day	Default Maximum Acreage/Day	PM10 pounds/day	PM10 tons/per period	PM2.5 pounds/day	PM2.5 tons/per period
Fugitive Dust - Grubbing/Land Clearing		0.25	2.50	0.03	0.52	0.01
Fugitive Dust - Grading/Excavation		0.25	2.50	0.15	0.52	0.03
Fugitive Dust - Drainage/Utilities/Subgrade		0.25	2.50	0.10	0.52	0.02

Off-Road Equipment Emissions

Grubbing/Land Clearing	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Crawler Tractors	1.36	5.50	18.17	0.69	0.64	0.02	1,576.92	0.48	0.01	1,593.02
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Excavators	0.73	6.88	8.08	0.40	0.37	0.01	1,089.21	0.33	0.01	1,100.33
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	5		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02	0.00	198.26
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Tractors/Loaders/Backhoes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Grubbing/Land Clearing	pounds per day		2.31	13.58	27.69	1.15	1.06	0.03	2,863.38	0.84	0.02	2,891.60
	Grubbing/Land Clearing	tons per phase		0.03	0.18	0.37	0.02	0.01	0.00	37.80	0.01	0.00	38.17

Grading/Excavation Override of Default Number of Vehicles	Default Number of Vehicles *Program-estimate*	Mitigation Option Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default Equipment Tier	Type	ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	0		Model Default Tier	Cranes	1.30	5.51	15.39	0.69	0.63	0.01	1,154.48	0.35	0.01	1,166.26
2.00	1		Model Default Tier	Crawler Tractors	1.36	5.50	18.17	0.69	0.64	0.02	1,576.92	0.48	0.01	1,593.02
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	3		Model Default Tier	Excavators	1.46	13.77	16.17	0.80	0.73	0.02	2,178.41	0.67	0.02	2,200.66
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	2		Model Default Tier	Rollers	0.63	4.03	5.88	0.43	0.39	0.01	543.03	0.17	0.00	548.57
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Rubber Tired Loaders	0.95	3.60	12.08	0.41	0.38	0.01	1,259.58	0.39	0.01	1,272.46
0.00	2		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	5		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02	0.00	198.26
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	2		Model Default Tier	Tractors/Loaders/Backhoes	1.28	9.67	12.30	0.92	0.85	0.01	1,286.19	0.39	0.01	1,299.30
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment Number of Vehicles	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab Equipment Tier	Type		ROG pounds/day	CO pounds/day	NOx pounds/day	PM10 pounds/day	PM2.5 pounds/day	SOx pounds/day	CO2 pounds/day	CH4 pounds/day	N2O pounds/day	CO2e pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation		pounds per day		7.19	43.29	81.41	3.99	3.68	0.08	8,195.86	2.47	0.07	8,278.53
Grading/Excavation		tons per phase		0.43	2.57	4.84	0.24	0.22	0.00	486.83	0.15	0.00	491.74

Drainage/Utilities/Subgrade	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Air Compressors	0.89	4.98	5.83	0.46	0.46	0.01	750.53	0.08	0.01	754.19
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Generator Sets	1.14	7.55	8.93	0.60	0.60	0.01	1,246.07	0.10	0.01	1,251.38
0.00	1		Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pavers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Paving Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Plate Compactors	0.08	0.42	0.50	0.02	0.02	0.00	68.96	0.01	0.00	69.31
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Pumps	1.20	7.66	9.06	0.63	0.63	0.01	1,246.07	0.11	0.01	1,251.55
			Model Default Tier	Rollers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	1		Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	2		Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	5		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02	0.00	198.26
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	2		Model Default Tier	Tractors/Loaders/Backhoes	1.28	9.67	12.30	0.92	0.85	0.01	1,286.19	0.39	0.01	1,299.30
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Drainage/Utilities/Sub-Grade	pounds per day	4.81	31.49	38.06	2.69	2.62	0.05	4,795.07	0.71	0.04	4,823.99
Drainage/Utilities/Sub-Grade	tons per phase	0.19	1.25	1.51	0.11	0.10	0.00	189.88	0.03	0.00	191.03

Paving	Default Number of Vehicles	Mitigation Option: Override of Default Equipment Tier (applicable only when "Tier 4 Mitigation" Option Selected)	Default		ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Override of Default Number of Vehicles	*Program-estimate*		Equipment Tier	Type	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
			Model Default Tier	Aerial Lifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Air Compressors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Bore/Drill Rigs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cement and Mortar Mixers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Concrete/Industrial Saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Cranes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crawler Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Crushing/Proc. Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Excavators	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Generator Sets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Graders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Tractors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Off-Highway Trucks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Construction Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other General Industrial Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Other Material Handling Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	1		Model Default Tier	Pavers	0.72	5.72	8.07	0.40	0.37	0.01	930.70	0.29	0.01	940.22
2.00	1		Model Default Tier	Paving Equipment	0.56	5.11	6.42	0.32	0.29	0.01	826.35	0.25	0.01	834.81
			Model Default Tier	Plate Compactors	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pressure Washers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Pumps	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2.00	3		Model Default Tier	Rollers	0.62	4.03	5.83	0.42	0.39	0.01	542.60	0.17	0.00	548.14
			Model Default Tier	Rough Terrain Forklifts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Dozers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Rubber Tired Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Scrapers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4.00	5		Model Default Tier	Signal Boards	0.23	1.20	1.44	0.06	0.06	0.00	197.25	0.02	0.00	198.26
			Model Default Tier	Skid Steer Loaders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Surfacing Equipment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Sweepers/Scrubbers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2			Model Default Tier	Tractors/Loaders/Backhoes	0.64	4.83	6.11	0.46	0.42	0.01	642.54	0.20	0.01	649.09
			Model Default Tier	Trenchers	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			Model Default Tier	Welders	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

User-Defined Off-road Equipment	If non-default vehicles are used, please provide information in 'Non-default Off-road Equipment' tab			ROG	CO	NOx	PM10	PM2.5	SOx	CO2	CH4	N2O	CO2e
Number of Vehicles	Equipment Tier	Type		pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day	pounds/day
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	N/A		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

	Paving	pounds per day	2.77	20.88	27.87	1.65	1.53	0.03	3,139.45	0.92	0.03	3,170.51
	Paving	tons per phase	0.05	0.41	0.55	0.03	0.03	0.00	62.16	0.02	0.00	62.78
Total Emissions all Phases (tons per construction period) =>			0.70	4.41	7.26	0.39	0.37	0.01	776.68	0.20	0.01	783.72

Equipment default values for horsepower and hours/day can be overridden in cells D391 through D424 and F391 through F424.

Equipment	User Override of Horsepower	Default Values Horsepower	User Override of Hours/day	Default Values Hours/day
Aerial Lifts		63		8
Air Compressors		78		8
Bore/Drill Rigs		206		8
Cement and Mortar Mixers		9		8
Concrete/Industrial Saws		81		8
Cranes		226		8
Crawler Tractors		208		8
Crushing/Proc. Equipment		85		8
Excavators		163		8
Forklifts		89		8
Generator Sets		84		8
Graders		175		8
Off-Highway Tractors		123		8
Off-Highway Trucks		400		8
Other Construction Equipment		172		8
Other General Industrial Equipment		88		8
Other Material Handling Equipment		167		8
Pavers		126		8
Paving Equipment		131		8
Plate Compactors		8		8
Pressure Washers		13		8
Pumps		84		8
Rollers		81		8
Rough Terrain Forklifts		100		8
Rubber Tired Dozers		255		8
Rubber Tired Loaders		200		8
Scrapers		362		8
Signal Boards		6		8
Skid Steer Loaders		65		8
Surfacing Equipment		254		8
Sweepers/Scrubbers		64		8
Tractors/Loaders/Backhoes		98		8
Trenchers		81		8
Welders		46		8

END OF DATA ENTRY SHEET

BIOLOGICAL TECHNICAL REPORT

for the

San Diego River Trail

Carlton Oaks Golf Course Segment Project

~~March~~ June 2017

Prepared for:

San Diego Association of Governments
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EXECUTIVE SUMMARY

This biological technical report provides a project-specific analysis of the effects on biological resources from construction of the San Diego Association of Governments' (SANDAG's) San Diego River Trail – Carlton Oaks Golf Course Segment Project (herein referred to as "proposed project"). The Biological Study Area (BSA) for the proposed project encompasses approximately 80.94 acres, while the proposed project impact footprint (the area where surface-disturbing activities would occur) covers approximately 18.59 acres, including permanent and temporary impacts. The BSA was delineated to capture areas with potential to be directly and indirectly affected by the proposed project.

The San Diego River Trail (SDRT) is a collaborative effort between SANDAG, the San Diego River Conservancy, and the cities of San Diego and Santee. The San Diego River Park Foundation also provides support for development of the trail. The San Diego River Park Master Plan, which was adopted by the City of San Diego (City) in 2013, envisions a continuous trail along the San Diego River as it passes through the City, with the trail ultimately connecting from the river's headwaters to the Pacific Ocean. SANDAG is leading the effort to complete the Carlton Oaks Golf Course segment of the SDRT, which is a component of the Regional Bike Network that stretches from the ocean east through the City of Santee.

The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and along the southern edge of the Carlton Oaks Golf Course.

The proposed project would impact sensitive vegetation communities/habitat types, as well as areas potentially under the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Department of Fish and Wildlife (CDFW). The USACE, RWQCB, and CDFW make the final determination of wetland and water resources within their jurisdiction. The project also has the potential to impact special status plant and animal species as recognized by the U.S. Fish and Wildlife Service (USFWS) and/or CDFW.

The following sensitive vegetation communities/habitat types would be affected by the proposed project: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, broom baccharis-dominated sage scrub, flat-topped buckwheat scrub, and non-native grassland.

The following potential USACE, RWQCB, and/or CDFW jurisdictional habitats or features would be affected by the proposed project: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, and non-wetland waters of the U.S./unvegetated streambed.

The project would impact the following special status plant species: two San Diego marsh-elder (*Iva hayesiana*) individuals.

The project has potential to impact the following species status animal species: least Bell's vireo (*Vireo bellii pusillus*), Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*).

Impacts to sensitive vegetation communities/habitat types and potential USACE, RWQCB, and/or CDFW jurisdictional habitats or features would be mitigated through a combination of revegetation, re-establishment, enhancement and/or preservation, and establishment, as determined through consultation with the resource agencies.

Direct effects on habitat for least Bell's vireo, yellow warbler, yellow-breasted chat, Cooper's hawk, and white-tailed kite would be mitigated through mitigation for impacts to southern riparian forest and southern willow scrub, which will be finalized during consultation with the USACE, RWQCB, CDFW, and/or USFWS. Direct effects on these species will be avoided by grubbing and clearing vegetation outside the breeding season whenever feasible, and conducting pre-construction breeding season surveys and establishing setbacks from active nests if clearing must occur during the breeding season.

Potential indirect effects resulting from noise during construction would be avoided by conducting pre-construction breeding season surveys and establishing setbacks from active nests. Potential indirect effects from invasive plant species would be avoided by ensuring that invasive species are not included in the landscape or erosion control plans and revegetating all temporary disturbance areas with native plant species or non-invasive ornamental plant species. Indirect effects from night lighting would not occur as the only lighting associated with the project would be low-voltage safety lighting that would be selectively placed, shielded, and directed away from sensitive habitats.

1.0 INTRODUCTION

This report provides a project-specific analysis of the effects on biological resources from construction of the San Diego River Trail – Carlton Oaks Golf Course Segment Project (herein referred to as "proposed project"). The Biological Study Area (BSA) for the proposed project encompasses approximately 80.94 acres, while the proposed project impact footprint (the area where surface-disturbing activities would occur) covers approximately 18.59 acres, including permanent and temporary impacts. The BSA was delineated to capture areas with potential to be directly and indirectly affected by the proposed project.

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2.0 PROPOSED PROJECT

The San Diego River Trail (SDRT) is a collaborative effort between SANDAG, the San Diego River Conservancy, and the cities of San Diego and Santee. The San Diego River Park Foundation also provides support for development of the trail. The San Diego River Park Master Plan (City of San Diego 2013), which was adopted by the City of San Diego (City) in 2013, envisions a continuous trail along the San Diego River as it passes through the City, with the trail ultimately connecting from the river's headwaters to the Pacific Ocean. SANDAG is leading the effort to complete the Carlton Oaks Golf Course segment of the SDRT, which is a component of the Regional Bike Network that stretches from the ocean east through the City of Santee. The project would contribute to the vision of the San Diego Regional Bike Plan (SANDAG 2010), which is to make riding a bicycle a useful form of transportation for everyday travel. This vision includes building a regional system of interconnected bicycle corridors, support facilities, and programs to enable residents to ride with greater safety and convenience within and between major activity centers. The Regional Bike Plan supports the implementation of San Diego Forward: The Regional Plan (SANDAG 2015a), which calls for more transportation choices and a balanced regional transportation system that supports smart growth and a more sustainable region. The bike plan provides a critical component of that balanced system, as well as the programs that are necessary to support it..

2.1 PROJECT LOCATION AND DESCRIPTION

The project site is located within the cities of San Diego and Santee in western San Diego County, California (Figure 1). The BSA is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues along the southern edge of the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park, just east of Carlton Hills Boulevard (Figure 2). The southern boundary of the BSA is bordered by State Routes 52 and 125, and by Mission Trails Regional Park to the west. The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 3). The proposed project occurs partially within the boundaries of the City of San Diego's adopted Multiple Species Conservation Program (MSCP) Subarea Plan, within portions of the Multi-Habitat Planning Area (MHPA [Figure 4]). The project also is partially within the boundaries of the City of Santee's MHPA pursuant to the City's Draft MSCP Subarea Plan, which is not approved or adopted. The project alignment is located outside the Coastal Zone (CZ).

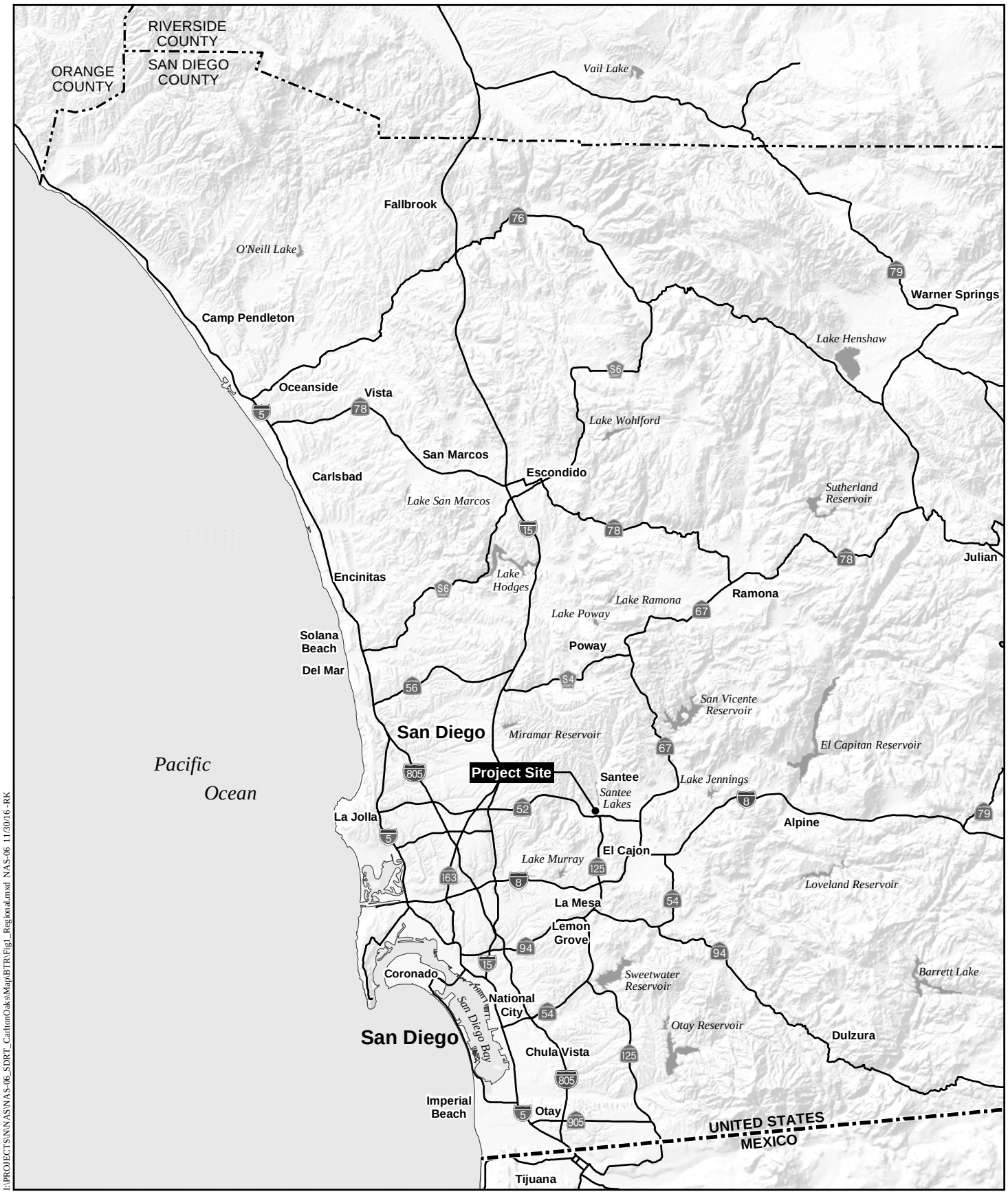
The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing decomposed granite (DG) trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing DG trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk

along West Hills Parkway. In general, the proposed project would include a 10-foot-wide all-weather paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of affected golf course play facilities (e.g., tee boxes), retaining walls, and other minor improvements.

There are three options being considered for the connection to West Hills Parkway at the western end of the bike path alignment. One option entails a switchback ramp that would ascend north and then south along the slope adjacent to the roadway, with a connection point to the sidewalk near the westbound SR-52 overcrossing structure (herein referred to as Switchback Ramp Option). Another option would include construction of a curvilinear ramp that would ascend northward along the slope and then curve west to connect perpendicularly to the sidewalk. This option (herein referred to as Curvilinear Ramp Option) could also be used for construction access. The third option consists of a linear ramp along the western edge of the golf course that would gradually ascend northward and connect to the sidewalk just south of the intersection of West Hills Parkway and Carlton Oaks Drive (herein referred to as Linear Ramp Option). Each of these options would include a staircase at the bottom of the ramp that would connect to the West Hills Parkway sidewalk on the west.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive (herein referred to as Padre Dam Easement Construction Access); and/or from the parking lot at Mast Park, which could require excavation to a depth of approximately three feet under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before they could be used for construction access.



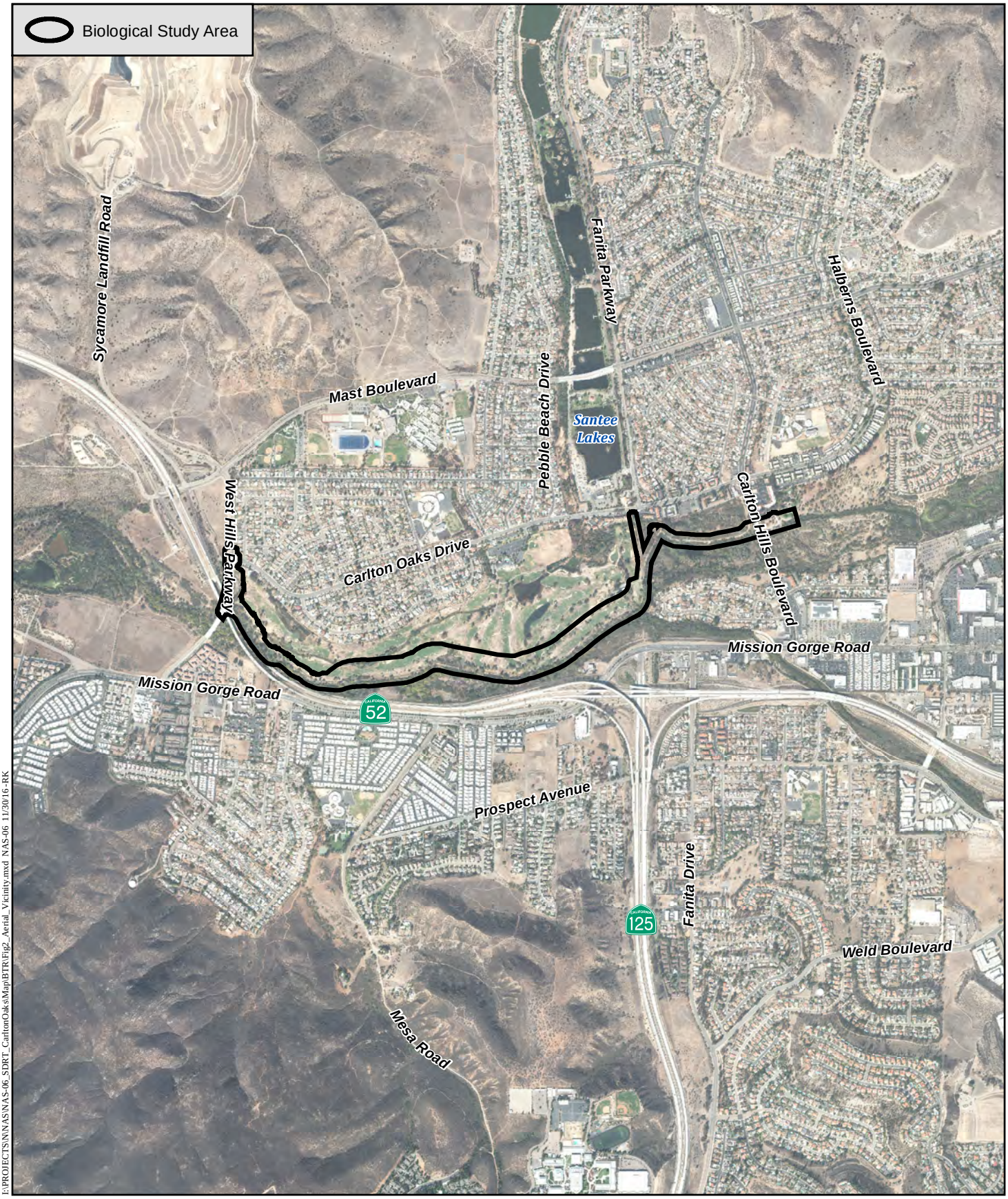
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Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 8 Miles

Figure 1



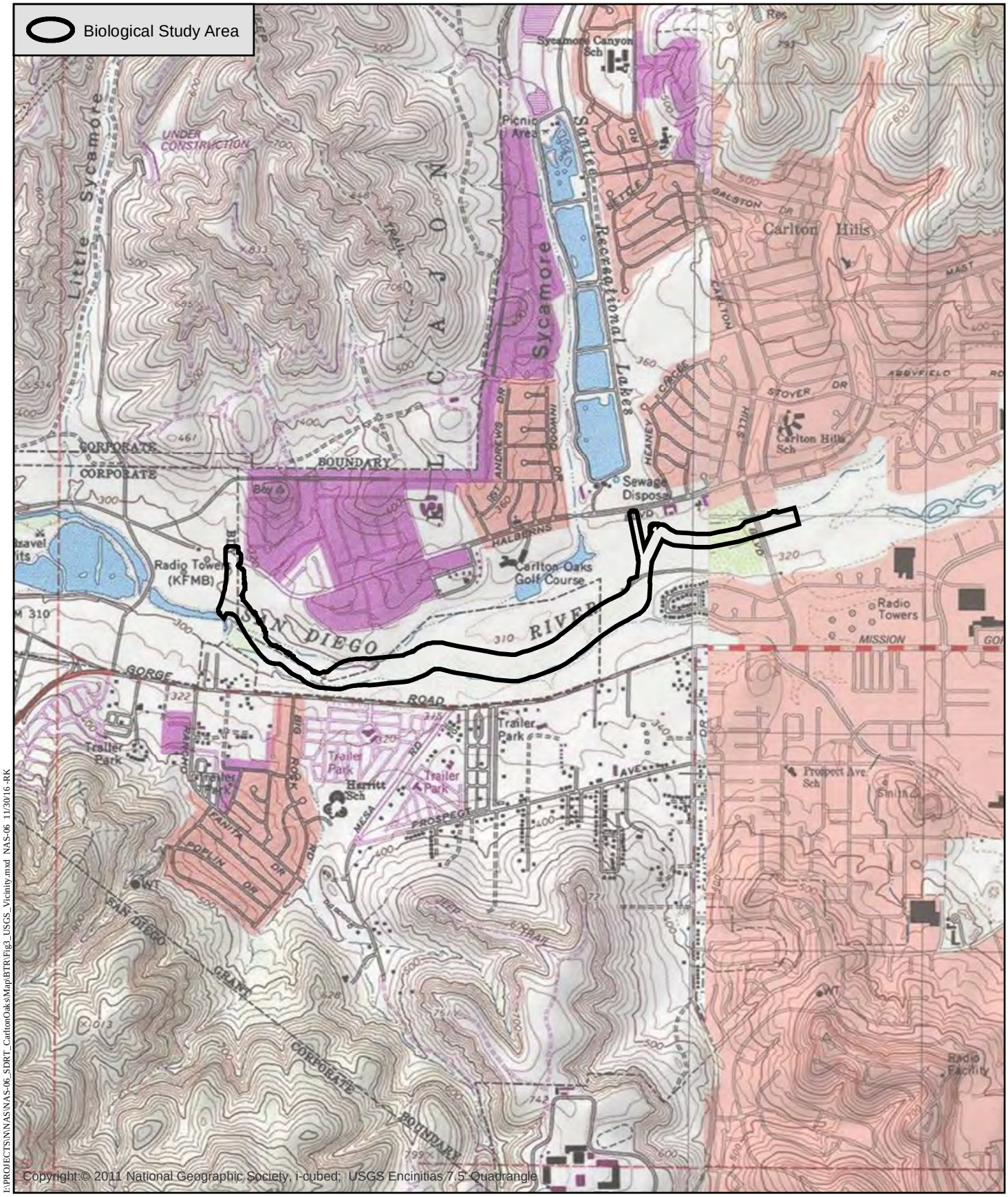
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Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 2



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Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 3



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Regional Conservation Planning Context

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 4

3.0 STUDY METHODS

This chapter discusses the methods used to document general biological resources and special status species potentially occurring within the BSA.

3.1 LITERATURE AND BIOLOGICAL DATABASE REVIEW

Prior to conducting biological field surveys, HELIX conducted a search of sensitive species and habitats databases for information regarding sensitive species known to occur within two miles of the project site, including the U.S. Fish and Wildlife Service (USFWS) species records (USFWS 2016), California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB; CDFW 2016a), and California Native Plant Society (CNPS) Electronic Inventory (CNPS 2016). Recent aerial imagery, topographic maps, soils maps (Natural Resource Conservation Service [NRCS] 2016 and Bowman 1973), and other maps of the project site and vicinity were acquired and reviewed to obtain updated information on the natural environmental setting. In addition, an alignment study for the project (SANDAG 2015b) was reviewed prior to conducting surveys.

Nomenclature for this report is from Holland (1986) and Oberbauer (2008) for vegetation communities; Baldwin et al. (2012) and the CNPS (2016) for plants, Collins and Taggart (2006) for reptiles and amphibians; American Ornithologists' Union (2014) for birds; and Baker et al. (2003) for mammals. Sensitive plant species status is taken from CNPS (2016). Sensitive animal species status is taken from CDFW's CNDDB (2016).

3.2 GENERAL BIOLOGICAL SURVEY AND VEGETATION MAPPING

A general biological survey of the BSA was conducted on June 22 and 23, 2016. Biological resources mapped for the 2015 alignment study were used as a baseline for the updated 2016 HELIX vegetation mapping. Vegetation was mapped on a 1"=100'-scale aerial photograph. The BSA was surveyed on foot with the aid of binoculars, and all observed or detected plant and animal species were recorded in field notes and/or on the aerial photograph. Animal identifications were made in the field by direct, visual observation, or indirectly by detection of calls, burrows, tracks, or scat. All plant identifications were made in the field or in the lab through comparison with voucher specimens or photographs. Data from the field maps were digitized into a geographic information system (GIS) using ArcGIS 9.2. Survey personnel and dates are summarized in Table 1. Representative site photographs are presented in Appendix A.

Table 1
BIOLOGICAL SURVEYS

SURVEY TYPE	DATE	PERSONNEL[1]
Year 2016		
General biological survey, vegetation mapping, jurisdictional delineation	June 22	Stacy Nigro, Talaya Rachels
	June 23	
Coastal California gnatcatcher	May 20	Erica Harris, Summer Schlageter[2]
	May 26	Erica Harris
	June 3	Erica Harris
	June 10	Jason Kurnow
	June 17	Jason Kurnow
	June 24	Erica Harris
Least Bell's vireo	May 4	Laura Moreton
	May 16	Katie Bellon
	May 26	Laura Moreton
	June 6	Laura Moreton
	June 16	Laura Moreton
	June 27	Ben Rosenbaum
	July 7	Summer Schlageter
	July 18	Laura Moreton
Southwestern willow flycatcher	May 26	Bonnie Peterson[3]
	June 6	
	June 16	
	June 27	
	July 7	
Rare plant	May 23	Talaya Rachels, Hannah Sadowski
	June 24	Talaya Rachels

[1]All HELIX biologists unless otherwise noted
[2]Supervised individual
[3]Subcontracted biologist

3.3 JURISDICTIONAL DELINEATION

A jurisdictional delineation was conducted on June 22 and June 23, 2016. Prior to beginning fieldwork, aerial photographs (1"=100' scale), topographic maps (1"=100' scale), the local soil survey, U.S. Geological Survey (USGS) quadrangle maps, and previous vegetation mapping (SANDAG 2015b) were reviewed to determine the location of potential jurisdictional areas that may be affected by the proposed project. The delineation was conducted to identify and map water and wetland resources potentially subject to USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), RWQCB pursuant to Section 401 of the CWA, and riparian and streambed habitats potentially subject to CDFW jurisdiction pursuant to Sections 1600 *et seq.* of the California Fish and Game Code (CFG Code). Areas generally

characterized by depressions, drainage features, and riparian and wetland vegetation were evaluated. The USACE, RWQCB, and CDFW make the final determination of wetland and water resources within their jurisdiction.

3.3.1 U.S. Army Corps of Engineers Jurisdiction

Potential USACE-jurisdictional waters of the U.S. (WUS) were delineated in accordance with the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Sampling points were located within representative uplands and wetlands, and mapping of drainage features was performed in the field based on the ordinary high water mark (OHWM) and surface indications of hydrology. Areas were determined to be potential wetland WUS if there was a dominance of hydrophytic vegetation, hydric soils, and wetland hydrology indicators. Areas were determined to be non-wetland WUS if there was evidence of regular surface flow within an OHWM, but the vegetation and/or soils criterion were not met.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. Potential RWQCB jurisdiction and waters of the State found within the BSA have the same boundaries as potential WUS under USACE jurisdiction.

3.3.2 California Department of Fish and Wildlife Jurisdiction

Potential CDFW-jurisdictional waters of the State were determined based on the presence of riparian vegetation or regular surface flow. Streambeds within CDFW jurisdiction were delineated based on the definition of streambed as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream.

3.4 RARE PLANT SURVEY

Rare plant surveys were conducted in the BSA on May 23 and June 24, 2016. Opportunistic inspections for rare plant species were also made during the other biological surveys performed to date (Table 1). Searches were made for those species that are listed as threatened or endangered by the USFWS or CDFW, and those with a Rare Plant Rank 1 through 4 designated by the CNPS. The surveys were conducted on foot and all habitat areas were inspected for the presence of rare plant species. Special status plant species encountered were mapped using a hand-held Global Positioning System (GPS) unit and/or on an aerial photograph. The 2016 focused survey report for rare plants is presented in Appendix G.

3.5 COASTAL CALIFORNIA GNATCATCHER

HELIX biologists conducted a survey for the coastal California gnatcatcher in accordance with the *Coastal California Gnatcatcher Presence/Absence Survey Protocol* (USFWS 1997). The survey consisted of six one-day site visits made from May 20 through June 24, 2016 (Table 1). The survey area consisted of all potential coastal California gnatcatcher habitats occurring on site (i.e., Diegan coastal sage scrub-disturbed, flat-topped buckwheat scrub, and broom baccharis-dominated sage scrub). The survey was conducted by walking through the vegetation or on adjacent paths, and viewing birds with the aid of binoculars, where necessary. If the coastal California gnatcatcher was not detected passively, a digital coastal California gnatcatcher call-prompt was briefly played. The 2016 focused survey report for coastal California gnatcatcher is presented in Appendix H.

3.6 LEAST BELL'S VIREO

Surveys for least Bell's vireo were conducted in accordance with *Least Bell's Vireo Survey Guidelines* (USFWS 2001). The survey consisted of eight site visits made from May 4 through July 18, 2016 (Table 1). The survey area consisted of potential least Bell's vireo riparian habitat (i.e., southern riparian forest, southern willow scrub, and mule fat scrub), and covered all areas of potential habitat within the BSA. The survey was conducted by walking along the edges of, as well as within, potential least Bell's vireo habitat while listening for least Bell's vireo vocalizations and while viewing birds with the aid of binoculars. All least Bell's vireo locations, along with other special status riparian bird species locations (and those of the brown-headed cowbird [*Molothrus ater*; a nest parasite]) were mapped on an aerial photograph. The 2016 focused survey report for least Bell's vireo is presented in Appendix I.

3.7 SOUTHWESTERN WILLOW FLYCATCHER

HELIX subcontractor Bonnie Peterson conducted a survey for the southwestern willow flycatcher in accordance with USFWS-approved survey protocol (Sogge et al. 2010). The survey consisted of five site visits made from May 26 through July 7, 2016 (Table 1). The survey area consisted of potential southwestern willow flycatcher riparian habitat (i.e., southern riparian forest, southern willow scrub, and mule fat scrub), and covered all areas of potential habitat within the BSA. The survey was conducted by walking along the edges of, as well as within, potential southwestern willow flycatcher habitat while listening for flycatcher vocalizations and viewing birds with the aid of binoculars. All flycatcher locations, along with other special status riparian bird species locations (and those of the brown-headed cowbird, a nest parasite) were mapped on an aerial photograph. The 2016 focused survey report for southwestern willow flycatcher is presented in Appendix J.

4.0 EXISTING CONDITIONS

4.1 BIOLOGICAL STUDY AREA

The 80.94-acre BSA consists of a linear corridor varying in width from approximately 100 feet (ft) to 400 ft along its approximately two-mile length from West Hills Parkway to Mast Park. The San Diego River flows from east to west through the BSA, and is bordered by the Carlton Oaks Golf Course along the western two-thirds of its length. Sycamore Creek flows through the golf course, and two short reaches of the creek occur within the BSA. The BSA is located partially within the City of San Diego's and City of Santee's MHPA (Figure 4). The MHPA is the planned habitat preserve within the MSCP Subarea for each City. The City of Santee's draft Subarea Plan has not been adopted. Nearly all of the BSA is identified as USFWS-designated critical habitat for least Bell's vireo.

The BSA consists of ornamental, disturbed, and developed lands associated with the golf course and existing roads, which together make up 48.62 acres (60 percent) of the BSA, and riparian habitats that make up 31.82 acres (39 percent) of the BSA. The remaining 0.50 acre (one percent) consists of small patches of native and naturalized upland habitats. Ornamental vegetation is the most prevalent habitat type in the BSA within the golf course, while riparian forest is dominant along the San Diego River. Native habitats within the BSA are associated primary with the San Diego River, which supports a riparian corridor that is constrained by development on both sides, including the golf course, SR 52 and other roadways, and single-family residential development.

There is an existing dirt trail through Mast Park West and directly east of the golf course, and there is an informal dirt trail along the top of the berm that separates the golf course from the San Diego River along much of the BSA. Hikers, walkers, and bicyclists have been observed using these trails.

General land use within the BSA includes the Carlton Oaks Golf Course, paved public roads, a dirt trail, a portion of Mast Park, and undeveloped lands along the San Diego River. General land uses adjacent to the BSA include residential and commercial development and roads. The portion of this segment generally between the Carlton Hills Boulevard bridge and the Carlton Oaks Golf Course is subject to a conservation easement held by the California Department of Fish and Wildlife (CDFW). Among other things, the conservation easement governs allowable uses of this property.

4.2 PHYSICAL CONDITIONS

Elevations within the BSA range from approximately 296 to 334 ft above mean sea level (amsl). Nine soil types representing six soil series (Grangeville, Redding-Urban land, Riverwash, Salinas, Tujunga, and Visalia) are mapped in the BSA (NRCS 2016).

The BSA is located within the 440-square mile San Diego Hydrologic Unit (HU), one of 12 HUs identified in San Diego County by the RWQCB. It is further located within portions of the Santee Hydrologic Subarea (HSA) in the Lower San Diego Hydrologic Area (HA; [Hydrologic

Unit Code 907.12]). The San Diego River conveys flows westward from the BSA to the Pacific Ocean near the community of Ocean Beach.

4.3 BIOLOGICAL CONDITIONS

4.3.1 Vegetation Communities/Land Use Types

A total of 13 vegetation communities or land use types were mapped within the BSA: southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, disturbed Diegan coastal sage scrub, broom baccharis dominated sage scrub, flat-topped buckwheat scrub, non-native grassland, ornamental, disturbed habitat, and developed lands (Table 2; Figures 5a through 5e).

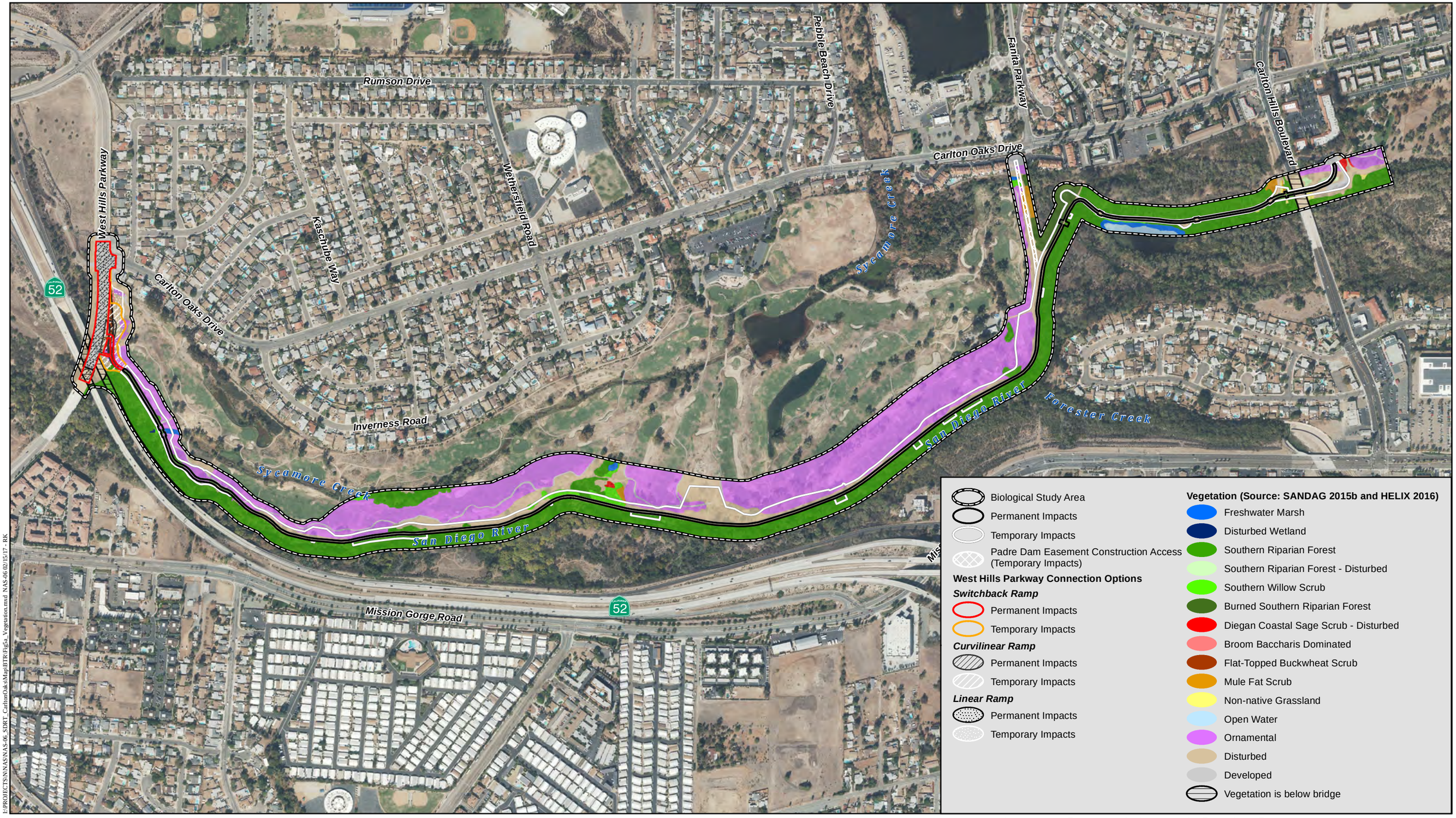
Table 2
EXISTING VEGETATION COMMUNITIES/LAND USE TYPES IN THE BIOLOGICAL STUDY AREA

VEGETATION COMMUNITY/LAND USE TYPE	ACREAGE
Southern Riparian Forest (including disturbed and burned)	29.14
Southern Willow Scrub	1.10
Mule Fat Scrub	0.51
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Open Water	0.52
Diegan Coastal Sage Scrub - disturbed	0.13
Broom Baccharis-dominated Sage Scrub	0.06
Flat-topped Buckwheat Scrub	0.16
Non-native Grassland	0.15
Ornamental	29.22
Disturbed Habitat	15.47
Developed	3.93
TOTAL	**80.94**

Southern Riparian Forest (including disturbed and burned)

Southern riparian forest (including southern riparian woodlands) is composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species in this habitat in the BSA include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), western cottonwood (*Populus fremontii*), box-elder (*Acer negundo*),

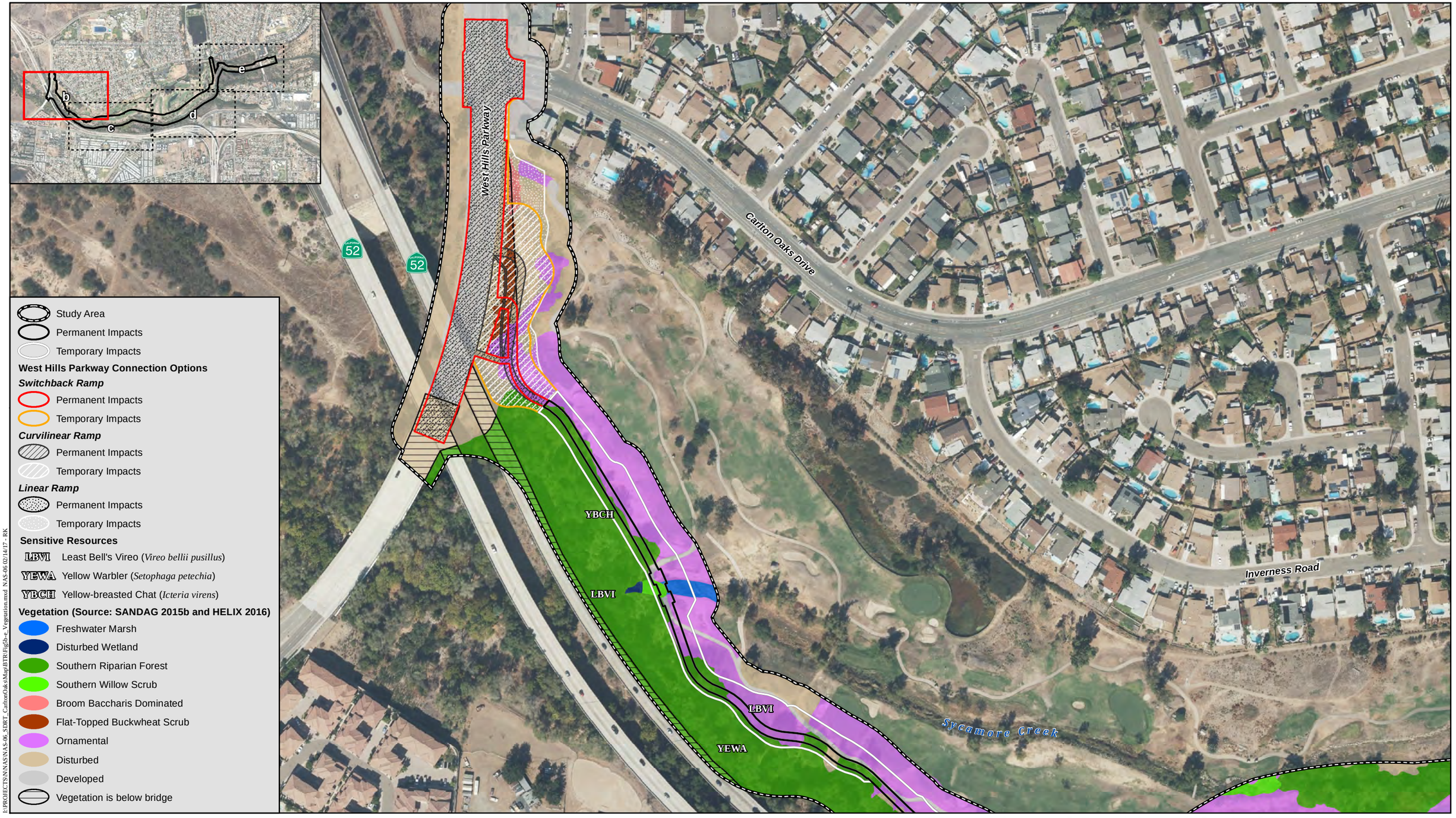


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Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 5a



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Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5b

Inverness Road

Sycamore Creek

San Diego River

YEWA

YBCH

COHA

YEWA

52

52

Mission Gorge Road

b

c

d

e

Study Area

Permanent Impacts

Temporary Impacts

Sensitive Resources

COHA Cooper's Hawk (*Accipiter cooperii*)

YEWA Yellow Warbler (*Setophaga petechia*)

YBCH Yellow-breasted Chat (*Icteria virens*)

Vegetation (Source: SANDAG 2015b and HELIX 2016)

Freshwater Marsh

Southern Riparian Forest

Southern Willow Scrub

Diegan Coastal Sage Scrub - Disturbed

Mule Fat Scrub

Ornamental

Disturbed

Developed

N

0 200 Feet

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Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 5c



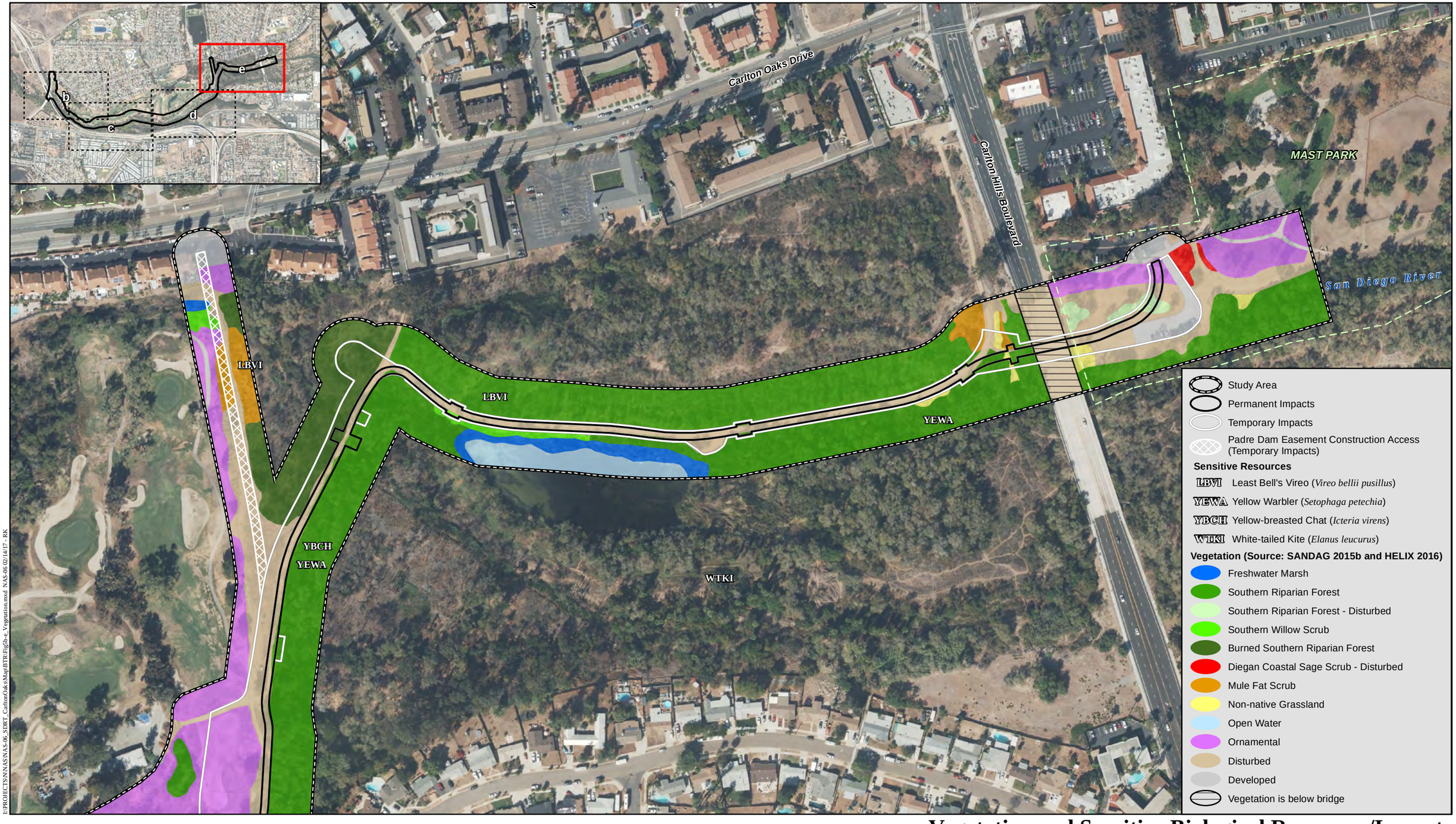
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Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5d



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Vegetation and Sensitive Biological Resources/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 5e

and wild grape. Burned southern riparian forest was affected by fire in 2014. Disturbed southern riparian forest is composed of two small stands of western cottonwood trees that have been cleared of understory species by maintenance activities conducted within Mast Park. These two stands are immediately east of Carlton Hills Boulevard. Southern riparian forest is the dominant vegetation community along the San Diego River and Sycamore Creek within the BSA. A total of 29.14 acres of southern riparian forest occurs within the BSA. Of this, 0.14 acre is disturbed and 1.40 acres burned in 2014.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows.

Southern willow scrub within the BSA consists of small stands of arroyo willow, black willow, and sandbar willow (*Salix exigua*). These stands are located in the south-central portion of the BSA north of the berm separating the San Diego River from the golf course, as well as in scattered locations east of the golf course as well as along Sycamore Creek in the north-central portion of the BSA. A total of 1.10 acres of southern willow scrub occur within the BSA.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table.

Small stands of mule fat scrub occur in the south-central portion of the BSA, where it occurs in association with stands of southern willow scrub, and in the eastern portion of the BSA just west of Carlton Hills Boulevard and along the eastern edge of the golf course. A total of 0.51 acre of mule fat scrub occurs within the BSA.

Freshwater Marsh

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots, five to 13 ft tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.), along with umbrella sedges (*Cyperus* sp.), rushes (*Juncus* sp.), and spike-sedge.

Small stands of freshwater marsh occur in four locations within the BSA. One stand occurs along Sycamore Creek in the western portion of the BSA, one stand occurs north of the berm separating the San Diego River from the golf course in the central portion of the BSA, the third stand occurs in the northeastern corner of the golf course, and the fourth stand occurs along the fringes of the open water pond in the eastern portion of the BSA. Cattails are the dominant

species in this habitat within the BSA. A total of 0.54 acre of freshwater marsh occurs within the BSA.

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora.

Disturbed wetland occurs as a single stand of habitat in the western portion of the BSA, adjacent to southern riparian forest. Water primrose (*Ludwigia grandiflora*) is the dominant species present. A total of 0.01 acre of disturbed wetland occurs within the BSA.

Open Water

Open water in the BSA consists of a portion of a pond excavated within the San Diego River in the eastern portion of the BSA. A total of 0.52 acre of open water occurs within the BSA.

Diegan Coastal Sage Scrub – disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect.

Disturbed Diegan coastal sage scrub occurs as three small stands of habitat in the BSA, one of which is in the central portion of the BSA, and the other two are within Mast Park in the eastern portion of the BSA. The habitat supports sparse shrub cover with a high proportion of non-native annual species. Characteristic species observed include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), California encelia (*Encelia californica*), and broom baccharis (*Baccharis sarothroides*). A total of 0.13 acre of disturbed Diegan coastal sage scrub occurs within the BSA.

Broom Baccharis Dominated Sage Scrub

Broom baccharis dominated sage scrub is an upland community dominated by broom baccharis (*Baccharis sarothroides*). It is considered a subtype of coastal sage scrub. Broom baccharis scrub occurs as a single small stand in the northwestern portion of the BSA. A total of 0.06 acre of broom baccharis dominated sage scrub occurs within the BSA.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a subtype of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and

foothill areas of San Diego County. A small narrow stand of this habitat is located in the far western portion of the BSA near West Hills Parkway. A total of 0.16 acre of flat-topped buckwheat scrub occurs within the BSA.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual, introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County.

This habitat occurs as several small, scattered patches in the easternmost portion of the BSA. Dominant species present include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*). A total of 0.15 acre of non-native grassland occurs within the BSA.

Ornamental

Ornamental plantings within the BSA consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Similar areas also occur within Mast Park in the eastern portion of the BSA. A total of 29.22 acres of ornamental vegetation occur within the BSA.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Disturbed habitat within the BSA includes dirt roads and trails, and areas made up of non-native, weedy vegetation such as shortpod mustard (*Hirschfeldia incana*), white sweet clover (*Melilotus albus*), Russian thistle (*Salsola tragus*), and common sow thistle (*Sonchus oleraceus*). A total of 15.47 acres of disturbed habitat occur within the BSA.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained.

Developed land within the BSA includes paved golf cart paths, buildings, and roads. A total of 3.93 acres of developed land occur within the BSA.

4.3.2 Plant Species

A total of 80 plant species were observed within the BSA during surveys, of which 34 (43 percent) are non-native. Appendix B contains a comprehensive list of all plant species encountered within the BSA.

4.3.3 Animal Species

A total of 70 animal species were observed or detected within the BSA during surveys: 10 invertebrates including eight butterfly, one amphibian, three reptile, 51 bird, and five mammal species. Appendix C contains a comprehensive list of all animal species observed or otherwise detected within the BSA.

4.3.4 Jurisdictional Waters and Wetlands

Potential jurisdictional wetlands, habitats, and other resources observed in the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, and ephemeral and perennial streams. Depictions of resources within the BSA potentially subject to USACE, RWQCB, and/or CDFW jurisdiction are presented in Figures 6a through 6e and 7a through 7e.

U.S. Army Corps of Engineers Jurisdiction

Potential WUS under the jurisdiction of the USACE in the BSA total 10.40 acres, made up of 8.14 acres of wetland and approximately 2.26 acres of non-wetland waters (Figures 6a through 6e; Table 3).

Table 3
POTENTIAL USACE JURISDICTION
WITHIN THE BIOLOGICAL STUDY AREA

POTENTIAL USACE JURISDICTION	ACREAGE*
Wetland Waters of the U.S.	
Southern Riparian Forest (including burned)	7.50
Southern Willow Scrub	0.09
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Subtotal	***8.14***
Non-wetland Waters of the U.S.	
Open Water	0.52
Ephemeral Stream	0.03
Perennial Stream	1.71
Subtotal	***2.26***
TOTAL	**10.40**

*Acreage is rounded to the nearest 0.01 acre.



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Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N

0 600 Feet

Figure 6a

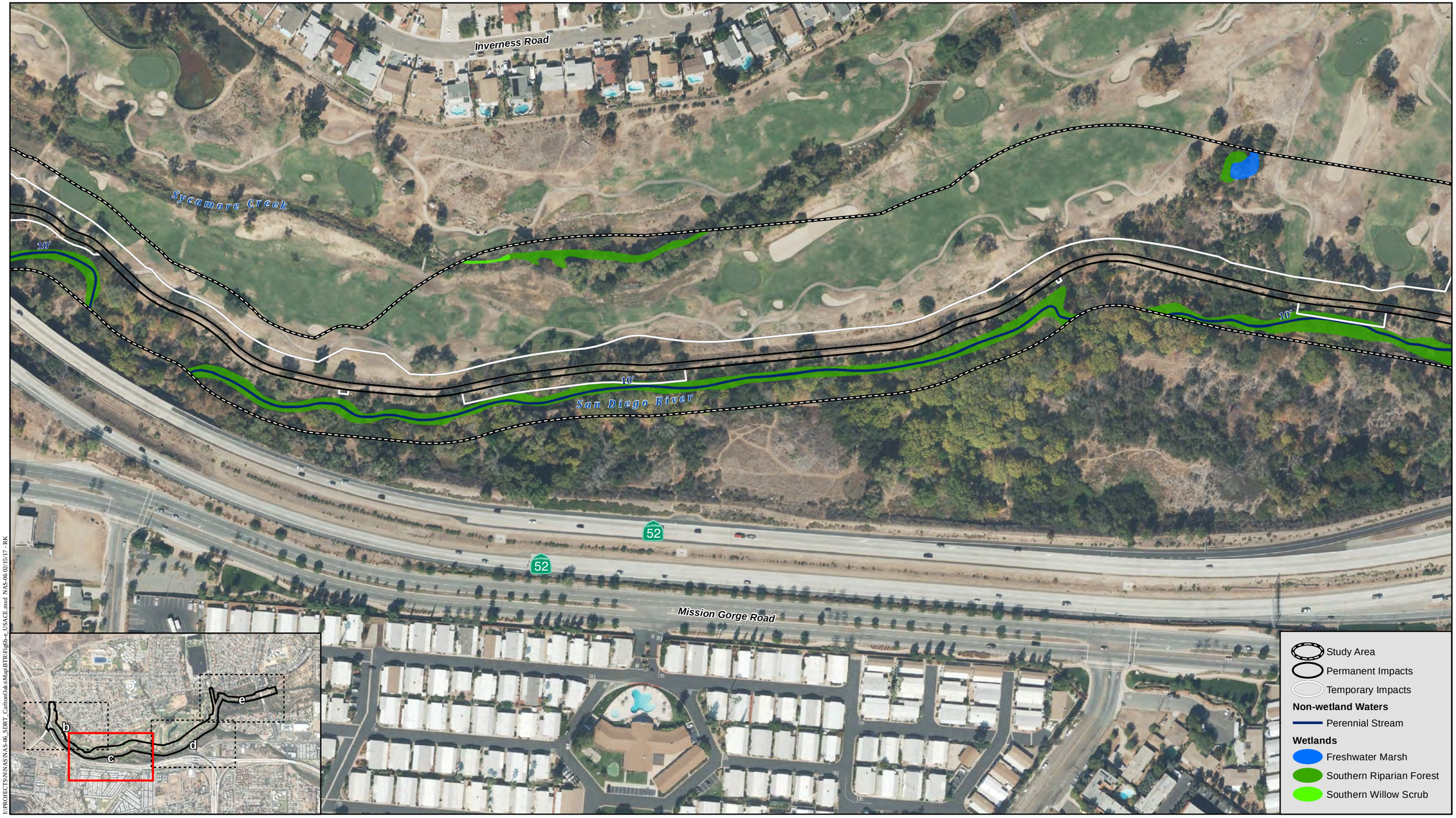


Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6b



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Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 6c



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Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6d

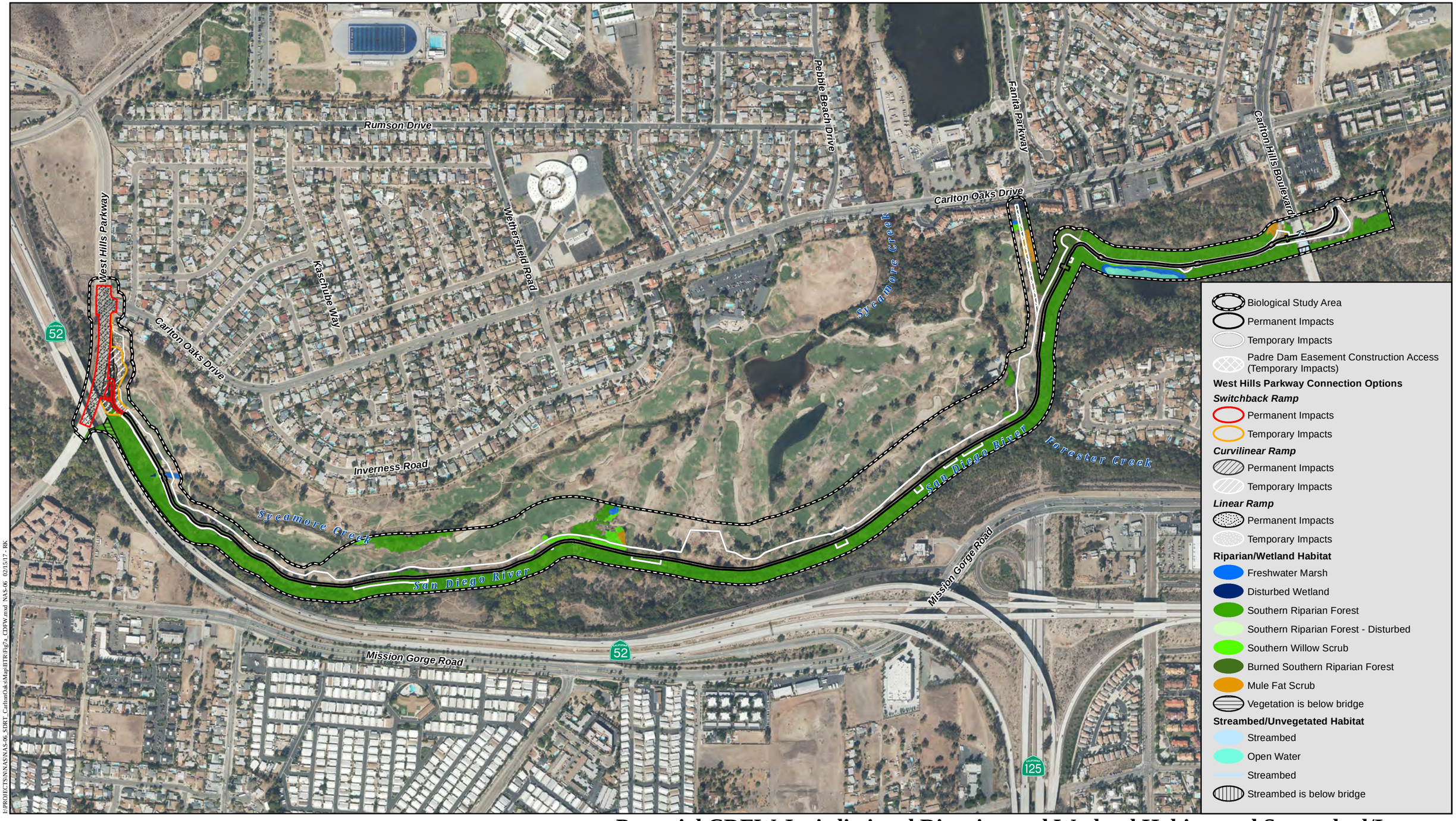


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Potential USACE Wetland and Non-wetland Waters of the U.S./Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 6e



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Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 7a



Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 7b



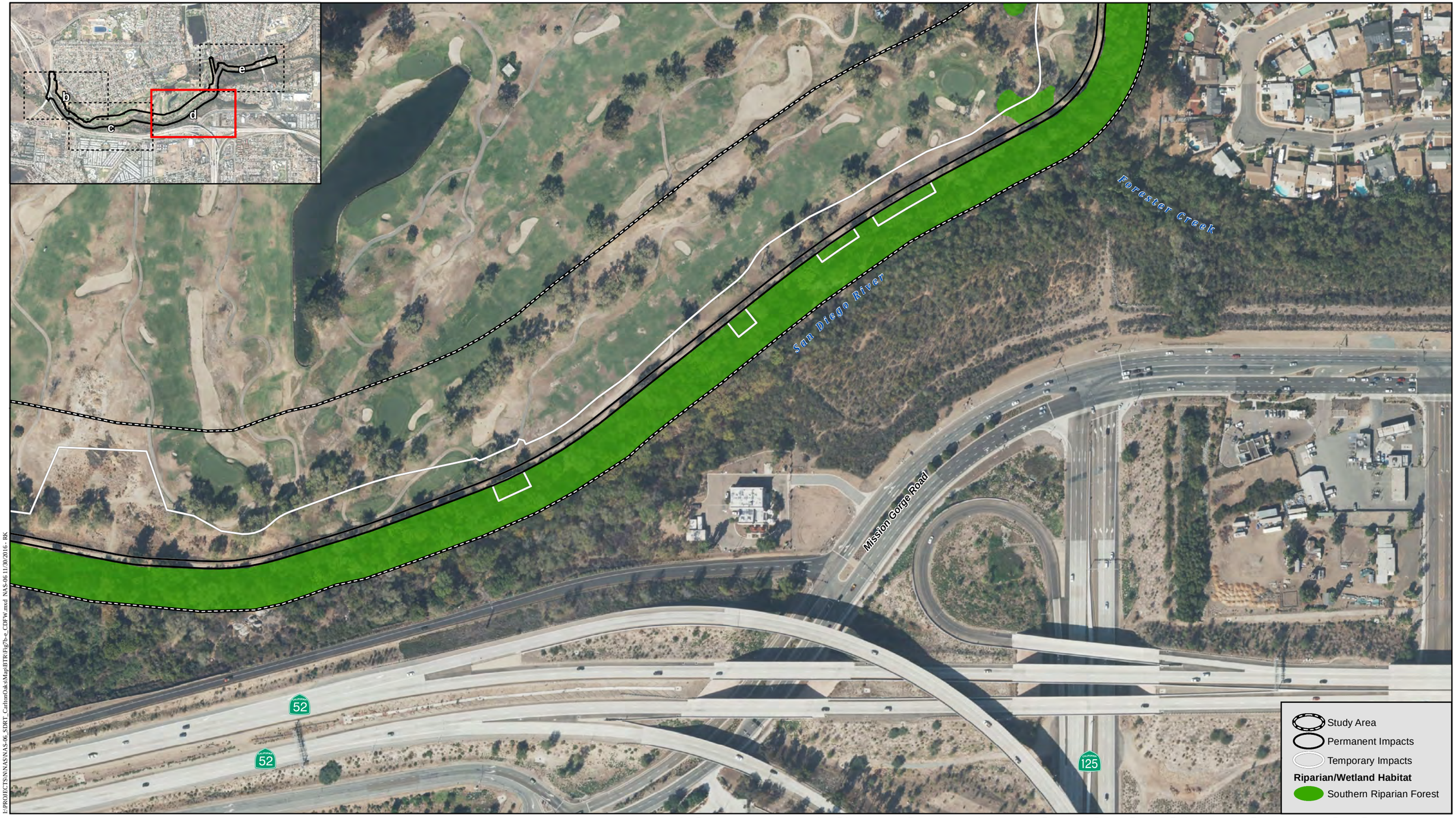
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Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7c



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Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7d



I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\BTR\Fig7e-e_CDFW.mxd NAS-06 11/30/2016 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed/Impacts

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N

0 200 Feet

Figure 7e

Potential RWQCB jurisdiction within the BSA follows the same boundaries of potential USACE jurisdiction for wetland and non-wetland WUS. There are no isolated waters of the State within the BSA subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

California Department of Fish and Wildlife Jurisdiction

Potential CDFW jurisdiction within the BSA totals 31.91 acres, and is made up of 31.30 acres of wetland/riparian habitat and approximately 0.61 acre of unvegetated stream channel or open water (Table 4; Figure 7a through 7e).

Table 4
POTENTIAL CDFW JURISDICTION
WITHIN THE BIOLOGICAL STUDY AREA

POTENTIAL CDFW JURISDICTION	ACREAGE*
Riparian/Wetland Habitat	
Southern Riparian Forest (including burned and disturbed)	29.14
Southern Willow Scrub	1.10
Mule Fat Scrub	0.51
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Subtotal	***31.30***
Stream Channel/Unvegetated Habitat	
Open Water	0.52
Streambed	0.09
Subtotal	***0.61***
TOTAL	**31.91**

*Acreage is rounded to the nearest 0.01 acre.

4.3.5 Wildlife Corridors and Movement

Wildlife corridors connect otherwise isolated pieces of habitat and allow movement or dispersal of plants and animals. Local wildlife corridors allow access to resources such as food, water, and shelter within the framework of their daily routine. Regional corridors provide these functions over a larger scale and link two or more large habitat areas, allowing the dispersal of organisms and the consequent mixing of genes between populations. A corridor is a specific route that is used for the movement and migration of species, and may be different from a linkage in that it represents a smaller or narrower avenue for movement. A linkage is an area of land that supports or contributes to the long-term movement of animals and genetic exchange by providing live-in habitat that connects to other habitat areas. Many linkages occur as stepping-stone linkages that are made up of a fragmented archipelago arrangement of habitat over a linear distance.

The San Diego River functions as a wildlife corridor within the BSA, facilitating movement of wildlife between Mission Trails Regional Park to the west and Mast Park and other areas further to the east of the BSA.

4.4 REGIONAL SPECIES AND HABITATS OF CONCERN

4.4.1 Sensitive Vegetation Communities/Habitat Types

Sensitive vegetation communities/habitat types are lands that support unique vegetation communities or the habitats of rare or endangered species or subspecies of animals or plants as defined by Section 15380 of the California Environmental Quality Act (CEQA) Guidelines.

Sensitive vegetation communities/habitat types mapped in the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, Diegan coastal sage scrub, flat-topped buckwheat scrub, broom baccharis dominated sage scrub, and non-native grassland.

4.4.2 Special Status Plant Species

Special status plant species have been afforded special status and/or recognition by the USFWS and/or CDFW and may also be included in the CNPS' Inventory of Rare and Endangered Plants as California Rare Plant Rank (CRPR) 1 or 2 species. Their status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exist naturally in small populations.

CRPR 4 species also were recorded during project surveys, including Palmer's sagewort (*Artemisia palmeri*), southern California black walnut (*Juglans californica* var. *californica*), and southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*). CRPR 4 species are considered watch list species. They are not afforded special status or recognition by the USFWS or CDFW, but may be considered sensitive by local jurisdictions. Impacts to CRPR 4 species are not considered impacts to special status species under CEQA unless required by a local jurisdiction. None of these three observed CRPR 4 species are identified as sensitive in the City of San Diego's MSCP Subarea Plan or the City of Santee's draft MSCP Subarea Plan.

One special status plant species was observed in the BSA during 2016 surveys: San Diego marsh elder (*Iva hayesiana*). Explanations of status codes are included as Appendix F.

San Diego marsh elder (*Iva hayesiana*)
Listing: --/--; CRPR List 2B.2
Distribution: San Diego County; Baja California, Mexico
Habitat: Creeks of intermittent streambeds are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized.
Presence on site: A total of 17 individuals were observed in southern riparian scrub adjacent to the existing trail in the southeastern portion of the BSA (Figure 5d).

Palmer's sagewort (*Artemisia palmeri*)
Listing: --/--; CRPR List 4.2
Distribution: Coastal San Diego County; Baja California, Mexico
Habitat: Stream courses, often within coastal sage scrub and southern mixed chaparral
Presence on site: A total of four individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the BSA (Figures 5c and 5d).

Southern California black walnut (*Juglans californica* var. *californica*)
Listing: --/--; CRPR List 4.2; CA Endemic
Distribution: Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties
Habitat: This tree grows between 20 and 50 feet tall in open savannah, often in habitat best labeled walnut woodland. May be more tolerant of clay soils than most native trees and shrubs. Shows preference for deep alluvial soils with high water-retention capacity and tends to grow in creek beds, alluvial terraces, and north-facing slopes.
Presence on site: A total of 28 individuals were documented in the BSA (Figures 5b and 5c). This species occurs in the southeast portion of the BSA as a grouping of trees and isolated individuals primarily within southern riparian forest, as well as several scattered individuals in open disturbed habitat along the existing trail.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Listing: --/--; CRPR List 4.2
Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico
Habitat: Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes
Presence on site: Approximately 200 individuals were observed in southern riparian forest in the northeastern portion of the BSA with scattered individuals observed in the southeast along the banks of the river (Figures 5d and 5e).

Special status plant species and CRPR 4 plant species that were not observed but may have potential to occur in the BSA are listed in Appendix D.

4.4.3 Special Status Animal Species

Special status animal species include those that have been afforded special status and/or recognition by the USFWS and/or CDFW. In general, the principal reason an individual taxon (species or subspecies) is given such recognition is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

A total of five special status animal species were detected in or near the BSA during 2016 surveys: Cooper's hawk (*Accipiter cooperii*), least Bell's vireo, white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*). These species are further discussed below. Explanations of status codes are included as Appendix F.

Cooper's Hawk (*Accipiter cooperii*)
Status: --/WL
Distribution: Occurs year-round throughout San Diego County's coastal slope where stands of trees are present
Habitat(s): Oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests
Presence on Site: One individual was observed perched in southern riparian forest in the western portion of the BSA (Figure 5c). Suitable nesting habitat for this species occurs within the BSA.

Least Bell's Vireo (*Vireo bellii pusillus*)
Status: FE/SE
Distribution: Observed throughout coastal southern California in the breeding season, south of Santa Barbara, but in smaller numbers in foothills and mountains
Habitat(s): Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Species was detected in five locations within and adjacent to the BSA (Figures 5b, 5d, and 5e). Suitable nesting habitat for this species occurs within the BSA.

White-tailed Kite (*Elanus leucurus*)
Status: --/Fully Protected
Distribution: Primarily occurs throughout coastal slopes of San Diego County
Habitat(s): Riparian woodlands and oak or sycamore groves adjacent to grassland
Presence on site: One individual was observed flying over southern riparian forest south of the eastern portion of the BSA (Figure 5e). Suitable nesting habitat for this species occurs within the BSA.

Yellow-breasted Chat (*Icteria virens*)
Status: --/SSC
Distribution: Occurs throughout San Diego County's coastal lowlands in the breeding season.
Habitat(s): Mature riparian woodland
Presence on Site: Species was detected in two locations in southern riparian forest in the western portion of the BSA (Figures 5b and 5c). Suitable nesting habitat for this species occurs within the BSA.

Yellow Warbler (*Setophaga petechia*)
Status: BCC/SSC
Distribution: Observed throughout California during the breeding season with rare sightings in winter.
Habitat(s): Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub
Presence on Site: Yellow warbler was detected in riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment (Figures 5b through 5e). Suitable nesting habitat for this species occurs within the BSA.

Special status animal species that were not observed but may have potential to occur in the BSA are listed in Appendix E.

5.0 REGULATORY REQUIREMENTS

5.1 FEDERAL

5.1.1 Federal Endangered Species Act

The federal Endangered Species Act and subsequent amendments (16 U.S.C. § 1531 et seq.) provide guidance for the conservation of endangered and threatened species and the ecosystems on which they depend.

Section 7 of the federal Endangered Species Act requires federal agencies, in consultation with and with the assistance of, the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modifications of critical habitat for these species. The USFWS and the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) share responsibilities for administering the federal Endangered Species Act.

Under Section 7, federal agencies must review their actions and determine whether the action may affect federally listed and proposed species or proposed or designated critical habitat. To accomplish this, federal agencies must request from the USFWS a list of species and critical habitat that may be in the project area or they can request USFWS concurrence with their species list. The USFWS must respond to either request within 30 days.

Once a species list is obtained or verified as accurate, federal agencies need to determine whether their actions may affect any of those species or their critical habitat. If no species or their critical habitat is affected, no further consultation is required. If they may be affected, consultation with the USFWS is required. This consultation will conclude either informally with written concurrence from the USFWS or through formal consultation with a biological opinion provided to the federal agency. A total of 75.5 acres of the BSA is within critical habitat for least Bell's vireo (Figure 8).

Section 9 of the federal Endangered Species Act lists those actions that are prohibited under the federal Endangered Species Act. The "take" of a species listed in accordance with the federal Endangered Species Act is prohibited. A take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct of any listed species."

5.1.2 Clean Water Act

The USACE regulates impacts to WUS under Section 404 of the CWA (33 U.S.C. 401 et seq.; 33 U.S.C. 1344; U.S.C. 1413; and Department of Defense, Department of the Army, Corps of Engineers 33 CFR Part 323). The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of all WUS. A federal CWA Section 404 Permit would be required for a project to place fill in WUS. Projects impacting WUS could be permitted on an individual basis or be covered under one of several approved nationwide permits. Individual permits are assessed individually based on the type of action, amount of fill, etc. Individual

permits typically require substantial time (often longer than one year) to review and approve, while nationwide permits are pre-approved if a project meets appropriate conditions. Linear transportation projects may be authorized under CWA Section 404 Nationwide Permit (NWP) 14, which does not place a limit on impacts to linear feet of WUS. A CWA Section 401 Water Quality Certification administered by the RWQCB must be issued prior to issuance of a Section 404 Permit.

5.1.3 Migratory Bird Treaty Act

All migratory bird species native to the United States or its territories are protected under the federal Migratory Bird Treaty Act (MBTA; 16 U.S.C. §§ 703–712), as amended under the Migratory Bird Treaty Reform Act (MBTRA) of 2004 (FR Doc. 05-5127; USFWS 2004). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers, or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment and/or loss of reproductive effort (e.g., killing or abandonment of eggs or young) may be considered take and is potentially punishable by fines or imprisonment.

5.2 STATE OF CALIFORNIA

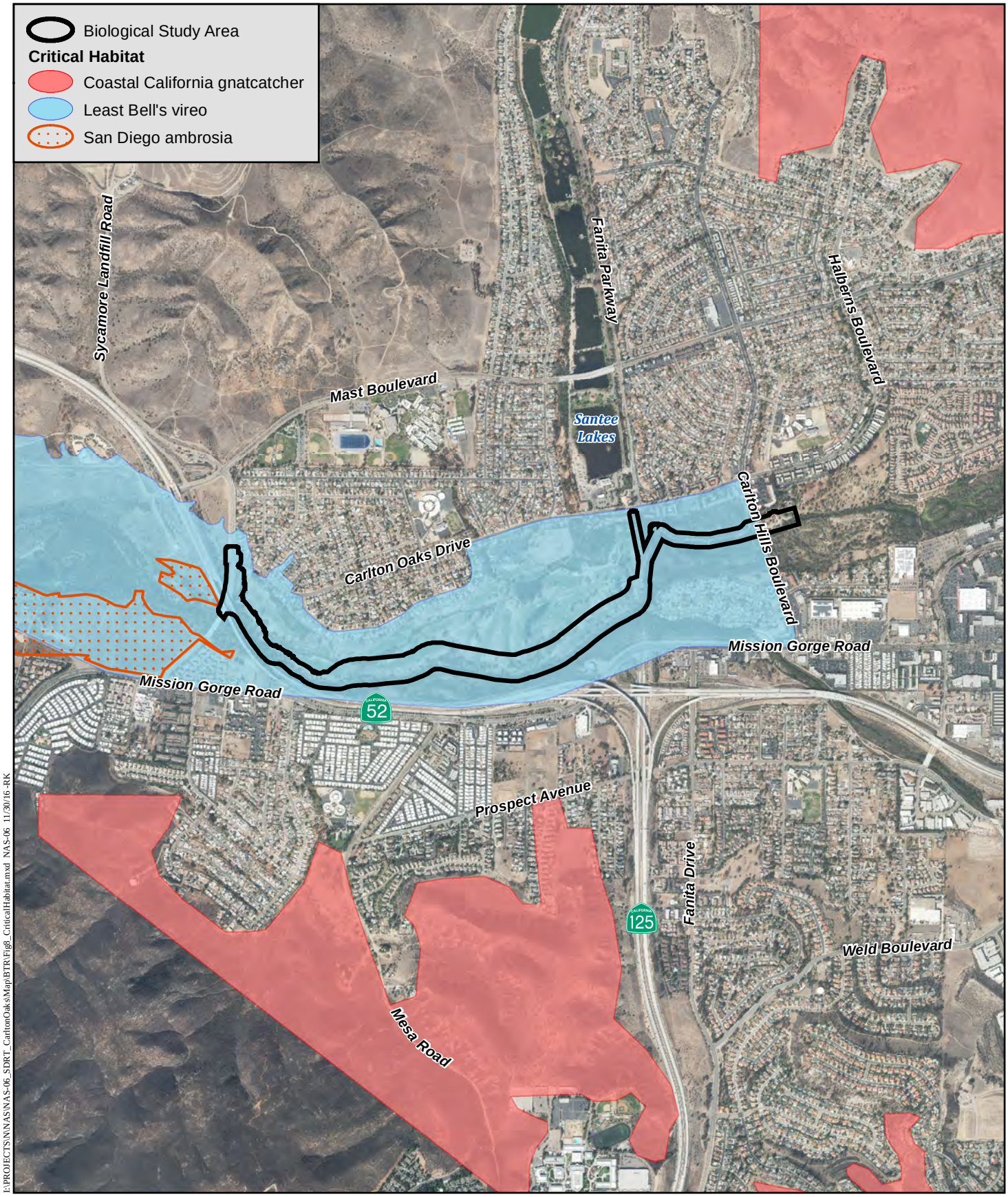
5.2.1 California Environmental Quality Act

The Environmental Checklist Form in Appendix G of the CEQA Guidelines lists the following as potential CEQA issues related to biological resources: substantial adverse effects to a candidate, sensitive, or special status species of animal or plant; substantial adverse effects to riparian, wetland, or other sensitive natural communities; substantial interference with the movement of any resident or migratory fish or wildlife species; and conflict with local policies or ordinances or the provisions of an adopted habitat conservation plan.

Under most circumstances, significant impacts to wildlife species listed by federal or state agencies as threatened or endangered ("listed species") are assessed under CEQA (Cal. Pub. Res. Code §§ 21000-21189.3). Significant impacts to listed species could be direct (e.g., the loss of a species) or indirect (e.g., affecting the species' habitat), with impacts to rare or uncommon (sensitive) habitats also considered significant based on their level of sensitivity and magnitude of their projected impact. The significance of impacts to habitat is based on factors such as the area affected, on-site species diversity, integrity of habitat or level of disturbance, connection of the site to areas with habitat value, and its regional context and extent and significance of impact.

5.2.2 Native Plant Protection Act

The Native Plant Protection Act (NPPA; California Fish and Game Code [CFG Code] §§ 1900-1913) enacted a process by which plants are listed as rare or endangered. The NPPA regulates collection, transport, and commerce in plants that are listed. The California Endangered Species Act followed and is similar to the NPPA in that it provides a process by which sensitive species are listed. It is a process by which plants and animals can be recognized as being endangered or threatened with extinction (plants listed as rare under the NPPA were designated threatened under the California Endangered Species Act).



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USFWS Critical Habitat

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 8

5.2.3 California Endangered Species Act

The California Endangered Species Act (CFG Code §§ 2050-2116) established that it is state policy to conserve, protect, restore, and enhance state endangered species and their habitats. Under state law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. The California Endangered Species Act authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the federal and California Endangered Species Acts, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the California Endangered Species Act (CFG Code Section 2080.1[a]). For state-only listed species, Section 2081 of CFG Code authorizes the CDFW to issue an Incidental Take Permit for state listed threatened and endangered species if specific criteria are met.

5.2.4 California Fish and Game Code

The CFG Code provides specific protection and listing for several types of biological resources. Section 1600 of CFG Code requires a Streambed Alteration Agreement (SAA) for any activity that would alter the flow, change, or use any material from the bed, channel, or bank of any perennial, intermittent, or ephemeral river, stream, and/or lake. Typical activities that require an SAA include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement. Notification is required prior to any such activities.

Pursuant to CFG Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by CFG Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA.

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6.0 PROJECT IMPACTS

This section identifies direct, indirect, and cumulative impacts that would result from the proposed project. Direct impacts associated with proposed project construction would include temporary impacts and permanent impacts. Direct temporary impacts are those that would be caused by construction activity, but vegetation/habitat would be re-established in place following completion of construction. Direct permanent impacts are those where the ground disturbance would be permanent; the biological resources would be replaced by the proposed project.

Indirect impacts are actions that are not a direct result of the proposed project, but affect biological resources either as a secondary effect of the direct impacts (e.g., construction noise, runoff, nighttime lighting, fugitive dust, etc.) or as the cause of degradation of a biological resource over time (e.g., edge effects).

Cumulative impacts refer to the incremental effect of the project's impacts when added to the effects of other closely related projects.

6.1 DIRECT IMPACTS

Impacts resulting from the proposed project would extend along an approximately 2-mile distance beginning at the Mast Park parking lot at the east end of the project alignment and terminating at West Hills Parkway at the west end of the alignment/Carlton Oaks Golf Course. The majority of project impacts are identical along the length of the alignment, with differences in impacts based solely on the different connection options to West Hills Parkway, as well as the potential inclusion of the Padre Dam Easement Construction Access route.

As previously discussed under Section 2.1, the three options being considered for the connection to West Hills Parkway at the western end of the bike path alignment are the Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option. Each of these options would include a staircase at the bottom of the ramp that would connect to the West Hills Parkway sidewalk on the west. Access during construction may be provided via a utility easement along the eastern boundary of the golf course; construction access along this potential route could result in temporary impacts. Access during construction could also be provided from West Hills Parkway and/or from the parking lot at Mast Park. Direct temporary impacts associated with construction access from either of these locations were analyzed as part of the temporary impact analysis for the Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option. Direct temporary and direct permanent impacts to vegetation communities resulting from these options are presented in Table 5. Direct temporary and direct permanent impacts to potential USACE and CDFW jurisdictional areas resulting from these options are presented in Tables 7 and 8, respectively.

6.1.1 Vegetation Communities/Land Use Types

Switchback Ramp and Curvilinear Ramp Options

The Switchback Ramp and Curvilinear Ramp Options would result in direct permanent impacts to approximately 0.59 acre of sensitive vegetation communities. Direct permanent impacts to sensitive vegetation communities include the following: 0.50 acre of southern riparian forest (including disturbed and burned), 0.04 acre of southern willow scrub, 0.004 acre of mule fat scrub, 0.003 acre of freshwater marsh, 0.03 acre of flat-topped buckwheat scrub, and 0.01 acre of non-native grassland (Figures 5a through 5e; Table 5).

The Switchback Ramp and Curvilinear Ramp Options also would result in direct temporary impacts to approximately 2.78 acres of sensitive vegetation communities (Figures 5a through 5e; Table 5). Direct temporary impacts to sensitive vegetation communities include the following: 2.08 acres of southern riparian forest (including disturbed and burned), 0.44 acre of southern willow scrub, 0.03 acre of mule fat scrub, 0.04 acre of freshwater marsh, 0.01 acre of broom baccharis-dominated sage scrub, 0.13 acre of flat-topped buckwheat scrub, and 0.05 acre of non-native grassland.

Impacts to sensitive vegetation communities would require mitigation. Mitigation for impacts to sensitive vegetation communities is presented in Section 7.1 of this report (BIO-1 through BIO-7).

Linear Ramp Option

Direct permanent impacts to sensitive vegetation communities under Linear Ramp Option would result in 0.12 acre of additional impacts to flat-topped buckwheat scrub and 0.02 acre of additional impacts to broom baccharis-dominated sage scrub relative to the Switchback Ramp and Curvilinear Ramp Options.

Direct temporary impacts to sensitive vegetation communities under the Linear Ramp Option would result in 0.12 acre fewer impacts to flat-topped buckwheat scrub and 0.03 acre of additional impacts to broom baccharis-dominated sage scrub relative to the Switchback Ramp and Curvilinear Ramp Options.

Padre Dam Easement Construction Access

The Padre Dam Easement Construction Access route would not result in any additional direct permanent impacts; only direct temporary impacts would differ. Direct temporary impacts to sensitive vegetation communities resulting from the Padre Dam Easement Construction Access route would result in 0.01 acre of additional impacts to southern willow scrub and 0.06 acre of additional impacts to mule fat scrub. These direct temporary impacts would not occur if this utility easement is not used for construction access.

Table 5
DIRECT IMPACTS TO VEGETATION COMMUNITIES/LAND USE TYPES FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Southern Riparian Forest (including disturbed and burned)	2.08	0.50	2.08	0.50	2.08	0.50	0	-
Southern Willow Scrub	0.44	0.04	0.44	0.04	0.44	0.04	0.01	-
Mule Fat Scrub	0.03	<0.01	0.03	<0.01	0.03	<0.01	0.06	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01	0	-
Disturbed Wetland	0	0	0	0	0	0	0	-
Open Water	0	0	0	0	0	0	0	-
Diegan Coastal Sage Scrub – disturbed	0	0	0	0	0	0	0	-
Flat-topped Buckwheat Scrub	0.13	0.03	0.13	0.03	0.01	0.15	0	-
Broom Baccharis - dominated Sage Scrub	0.01	0	0.01	0	0.04	0.02	0	-
Non-native Grassland	0.05	0.01	0.05	0.01	0.05	0.01	0	-
Ornamental	4.35	0.42	4.35	0.42	4.37	0.47	0.04	-
Disturbed Habitat	5.22	3.31	5.28	3.26	5.29	3.38	0.22	-
Urban/Developed	0.38	1.56	0.38	1.56	0.38	1.56	0.02	-

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

6.1.2 Jurisdictional Waters and Wetlands

Project implementation would result in direct permanent and temporary impacts to jurisdictional waters and wetlands as discussed below.

Impacts to jurisdictional waters and wetlands would require mitigation. Mitigation for impacts to jurisdictional waters and wetlands is presented in Section 7.2 of this report (BIO-8).

U.S. Army Corps of Engineers Jurisdiction

Implementation of any of the options (i.e., Switchback Ramp Option, Curvilinear Ramp Option, or Linear Ramp Option) would result in direct permanent impacts to approximately 0.03 acre of WUS, consisting of 0.02 acre of wetlands and 0.01 acre of non-wetland waters, as well as direct temporary impacts to approximately 0.18 acre of WUS, consisting of 0.17 acre of wetlands and 0.01 acre of non-wetland waters (Table 6; Figures 6a through 6e). Implementation of the Padre Dam Easement Access Option would not result in additional direct temporary impacts to WUS.

Impacts to WUS would also represent impacts to waters of the State subject to RWQCB jurisdiction pursuant to CWA Section 401. Impacts to WUS would require CWA Section 404 and 401 permits from the USACE and RWQCB, respectively.

Table 6
DIRECT IMPACTS TO USACE JURISDICTIONAL AREAS
FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Wetland Waters of the U.S.								
Southern Riparian Scrub (including disturbed and burned)	0.12	0.01	0.12	0.01	0.12	0.01	0	-
Southern Willow Scrub	0.01	0.01	0.01	0.01	0.01	0.01	0	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01	0	-
Subtotal	**0.17**	**0.02**	**0.17**	**0.02**	**0.17**	**0.02**	**0**	
Non-wetland Waters of the U.S.								
Ephemeral Stream	0.01	<0.01	0.01	<0.01	0.01	<0.01	0	-
Subtotal	**0.01**	**<0.01**	**0.01**	**<0.01**	**0.01**	**<0.01**	**0**	**-**
TOTAL	**0.18**	**0.03**	**0.18**	**0.03**	**0.18**	**0.03**	**0**	**-**

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

California Department of Fish and Wildlife Jurisdiction

Implementation of any of the options (i.e., Switchback Ramp Option, Curvilinear Ramp Option, or Linear Ramp Option) would result in direct permanent impacts to approximately 0.55 acre of

CDFW jurisdictional areas, consisting of 0.55 acre of wetland or riparian habitats and 0.001 acre of stream channel, as well as direct temporary impacts to approximately 2.59 acres of wetland or riparian habitats and 0.003 acre of stream channel (Table 7; Figures 7a through 7e). Implementation of the Padre Dam Easement Access Option would result in additional direct temporary impacts to 0.07 acre of wetland and riparian habitat.

Impacts to CDFW jurisdictional habitat would require issuance of a Streambed Alteration Agreement by CDFW.

Table 7
DIRECT IMPACTS TO CDFW JURISDICTIONAL AREAS FROM THE PROPOSED PROJECT OPTIONS

Vegetation Community	Impact Acreages[1]							
	Project with Switchback Ramp Option		Project with Curvilinear Ramp Option		Project with Linear Ramp Option		Padre Dam Easement Construction Access	
	T	P	T	P	T	P	T	P
Riparian/Wetland Habitat								
Southern Riparian Scrub (including disturbed and burned)	2.08	0.50	2.08	0.50	2.08	0.50	0	-
Southern Willow Scrub	0.44	0.04	0.44	0.04	0.44	0.04	0.01	-
Mule Fat Scrub	0.03	<0.01	0.03	<0.01	0.03	<0.01	0.06	-
Freshwater Marsh	0.04	<0.01	0.04	<0.01	0.04	<0.01		-
Subtotal	**2.59**	**0.55**	**2.59**	**0.55**	**2.59**	**0.55**	**0.07**	**-**
Stream Channel/Unvegetated Habitat								
Streambed	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0	
Subtotal	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**<0.01**	**0**	
TOTAL	**2.59**	**0.55**	**2.59**	**0.55**	**2.59**	**0.55**	**0.07**	**-**

[1] Rounded to the nearest 0.01; thus, totals reflect rounding
T = temporary impacts: P = permanent impacts

6.1.3 Special Status Plant Species

The project would result in direct permanent impacts to one special status plant species: San Diego marsh-elder, a CRPR List 2B.2 species. These impacts are further described below.

Implementation of any of the project options would impact two San Diego marsh-elder individuals. Proposed impacts would not affect the regional long-term survival of this species, which is known from other portions of the BSA as well as other locations in the project vicinity. In addition, this species is not identified as sensitive in the City of San Diego's MSCP Subarea Plan or the City of Santee's draft MSCP Subarea Plan.

6.1.4 Special Status Animal Species

The project would result in impacts to riparian habitat areas used by five special status animal species determined to occupy and use portions of the site for breeding and/or roosting: Cooper's hawk, least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler.

Mitigation measures addressing impacts to special status animal species are presented in Section 7.3 (BIO-9 through BIO-12).

Cooper's Hawk

Cooper's hawk, a CDFW Watch List species, was observed perched in southern riparian forest in the western portion of the BSA. The project would result in 0.50 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this raptor species.

Least Bell's Vireo

Least Bell's vireo, a federal and state listed endangered species, was detected in five locations within and adjacent to the BSA. The project would result in the following impacts to riparian habitats that may be used by this species for breeding and nesting: 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, 0.04 acre of permanent impact and 0.44 acre of temporary impact to southern willow scrub, and 0.004 acre of permanent impact and 0.03 acre of temporary impact to mule fat scrub.

The project also would result in approximately 5.7 acres of direct permanent impacts to USFWS-designated critical habitat for least Bell's vireo, of which approximately 0.52 acre are to wetland or riparian habitats that are potentially suitable habitat for vireo. The remaining impacts within critical habitat are to upland habitats or developed lands. Impacts to 0.52 acre of critical habitat suitable for supporting least Bell's vireo would be mitigated through implementation of Measure BIO-1 in Section 7.1 and Measure BIO-9 in Section 7.3, as well as being addressed through Section 7 consultation initiated by the USACE as described in Measure BIO-12. Consultation with USFWS on impacts to critical habitat is only required when there is an associated federal action. The project would require a CWA 404 permit from the USACE.

White-tailed Kite

White-tailed kite, a State Fully Protected Species, was observed flying over southern riparian forest south of the eastern portion of the BSA. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this raptor species.

Yellow-breasted Chat

Yellow breasted chat, a State Species of Special Concern, was detected in two locations in southern riparian forest in the western portion of the BSA. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this species.

Yellow Warbler

Yellow warbler, a federal Bird of Conservation Concern and State Species of Special Concern, was detected in southern riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment. The project would result in 0.55 acre of permanent impact and 2.08 acres of temporary impact to southern riparian forest, which is potential nesting habitat for this species.

6.1.5 Wildlife Corridors and Movement

The project would not constrain east-west wildlife movement through the area. The project is not anticipated to have a significant effect on wildlife corridors or movement since the majority of the trail would be constructed on or adjacent to an existing berm paralleling the southern edge of the golf course, thus not fragmenting the river corridor, and the portions of the trail east of the golf course would be constructed along an existing dirt trail that already traverses this habitat. A few limited areas on the north side of the trail adjacent to the golf course may be fenced with chain link or other taller protective fence where it is most likely trail users would benefit from protection from airborne golf balls. All other fencing along the edges of the trail would allow passage of wildlife and not result in barriers to wildlife movement. Wildlife movement through this area is primarily in an east-west direction, as wildlife movement south of the river is already constrained by SR-52 and residential development, and wildlife movement north of the river is already constrained by the golf course, residential and commercial development, and roadways.

6.2 INDIRECT IMPACTS

Potential indirect impacts from the proposed project evaluated in this section include those that may result from construction-related noise, increased human activity, colonization by invasive plants, presence of nuisance animals, increased nighttime lighting, decreased water quality, and fugitive dust.

6.2.1 Construction Noise

Construction-related noise from such sources as clearing, grubbing, and grading would be a temporary impact to wildlife. Breeding birds and mammals may temporarily or permanently leave their territories to avoid disturbances from construction activities, which could lead to reduced reproductive success and increased mortality. Potential short-term noise impacts could result from construction for the proposed project if construction noise levels exceed a level of 60 dB L_{eq} hourly average or ambient (whichever is greater) adjacent to nesting sensitive bird species, including raptors. Potential adverse effects from noise impacts during construction would be addressed through implementation of Measure BIO-10 identified in Section 7.3.

6.2.2 Human Activity

Increases in human activity in the area could result in degradation of habitat adjacent to the proposed trail and associated indirect impacts on sensitive species through the creation of unauthorized trails and removal of vegetation.

Increases in human activity resulting from the proposed trail are not expected to result in adverse effects on adjacent habitat and sensitive species as the project proposes to install permanent fencing to clearly define the boundaries of the trail, and the trail will be of sufficient width to accommodate two-way bicycle traffic. Furthermore, human activity is already present in the area from the adjacent golf course and along existing established and informal segments of the trail.

6.2.3 Invasive Plants

The BSA already contains a wide variety of non-native species, including many invasive species, and project implementation is not anticipated to increase colonization by non-native plants. However, the proposed project would incorporate measures to ensure that the project does not increase colonization of invasive species. These measures are presented as BIO-4 and BIO-7 in Section 7.1.

6.2.4 Nuisance Animals

Domesticated animals (e.g., dogs and cats) are known to affect native wildlife, particularly in habitats immediately adjacent to development. Since standard practice prohibits construction workers from bringing pets to the work site, indirect effects associated with domesticated animals during construction would not occur. Furthermore, since the project is not residential in nature, it would not result in an increase in free-roaming domesticated cats in the project vicinity.

It is anticipated that leashed dogs would be allowed on the completed trail. Leashed dogs are not expected to have an effect on wildlife since they will be restricted to the established trail.

For the reasons described above, the project would not result in adverse indirect effects from nuisance animals.

6.2.5 Nighttime Lighting

Nighttime lighting has potential to spill over into native habitats, exposing wildlife species to an unnatural light regime and potentially altering their behavior patterns which can result in lower reproductive success, thus reducing species diversity. In addition, nighttime lighting can provide nocturnal predators with an unnatural advantage over their prey.

Project construction would occur during daylight hours. Permanent lighting may be installed as part of the project. Any such lighting would be low-voltage safety lighting of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from sensitive habitat. As such, the project would not result in adverse indirect effects from nighttime lighting.

6.2.6 Water Quality

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for the proposed project prior to construction in order to obtain CWA Section 402 National Pollutant Discharge Elimination System permit coverage for storm water discharges. The SWPPP Best Management Practices (BMPs) would be implemented to ensure that construction does not adversely affect

water quality from the use, for example, of petroleum products (e.g., fuels, oil, and lubricants) and erosion of land cleared during construction.

The proposed project qualifies as exempt from City of San Diego and City of Santee Priority Development Project (PDP) storm water requirements because it consists of a new bike and pedestrian trail that would direct storm water runoff to adjacent vegetated areas or other non-erodible permeable areas. As a result, the project is not required to include pollutant treatment or hydromodification controls (Nasland Engineering 2016).

Per City of San Diego requirements, PDP exempt projects are still required to comply with site design and source control BMP requirements as described in the City of San Diego Storm Water Standards Manual.

Per City of Santee requirements, PDP exempt projects are still required to comply with site design BMP requirements, source control BMP requirements, and prepare a Standard Development Project Storm Water Quality Management Plan.

No impacts to water quality are anticipated during project construction as the project would prepare and implement a SWPPP. No impacts to water quality are anticipated from the completed bikeway, as the project does not have uses that would contribute pollutants and also would comply with City of San Diego and City of Santee site design and source control BMP requirements.

6.2.7 Fugitive Dust

Dust released during construction activities could cover vegetation in adjacent habitat areas. The resulting dust covering could reduce native plant productivity, in turn displacing native vegetation, reducing diversity, and affecting wildlife dependent on the vegetation.

The project would avoid indirect impacts to plants and wildlife from fugitive dust by implementing standard air quality control measures that are routinely implemented as part of all SANDAG construction contracts to effectively reduce emissions during construction. The control measures may include, but are not limited to, application of soil stabilizers (water) to disturbed areas, termination of soil disturbance during high wind events, and covering material stock piles. As such, the project would not result in adverse indirect effects from fugitive dust.

6.3 CUMULATIVE IMPACTS

6.3.1 Sensitive Vegetation Communities

The project would contribute to the cumulative impact on sensitive vegetation communities, including southern riparian forest, southern willow scrub, mule fat scrub, freshwater marsh, flat-topped buckwheat scrub, broom baccharis-dominated sage scrub, and non-native grassland. The project's contribution to these cumulative impacts would be mitigated through the implementation of habitat mitigation requirements, as identified in Measures BIO-1 and BIO-2 in Section 7.1. Mitigation for habitat loss is required to compensate for direct impacts as well as cumulative loss of habitat.

6.3.2 Jurisdictional Waters and Wetlands

The proposed project's contribution to cumulative impacts to jurisdictional waters and wetlands would be fully mitigated in accordance with regulatory permit requirements to be negotiated with the USACE, RWQCB, and CDFW. Required mitigation, as identified in Measure BIO-8 in Section 7.2, would reduce the project's cumulative impacts on jurisdictional waters and wetlands.

6.3.3 Special Status Plant Species

The project would not contribute to the cumulative impact on special status plant species given the low numbers of individuals impacted and presence of these species in other portions of the BSA and region.

6.3.4 Special Status Animal Species

The project has the potential to contribute to the cumulative impact on Cooper's hawk, least Bell's vireo, white-tailed kite, yellow-breasted chat, and yellow warbler through loss of habitat. The project's contribution to these cumulative impacts would be mitigated through the implementation of habitat mitigation requirements at ratios determined through consultation with the resource agencies, as well as avoiding direct, inadvertent take of these species through implementation of avoidance measures. Applicable mitigation measures are identified in Section 7.1 (Measures BIO-1 and BIO-2) and Section 7.3 (Measures BIO-9, BIO-10, and BIO-12).

7.0 AVOIDANCE AND COMPENSATORY MITIGATION MEASURES

This section identifies avoidance and compensatory mitigation measures for the proposed project's direct, indirect, and cumulative impacts to sensitive vegetation communities, jurisdictional waters and wetlands, and special status plant and animal species within the BSA. The proposed project has been designed to avoid and substantially lessen impacts to sensitive biological resources to the extent practicable; much of the proposed path would be located along an existing unpaved trail and on top of an existing berm. This section also identifies measures that will be incorporated into the project to avoid impacts to biological resources. However, complete avoidance of all sensitive biological resources is not feasible. As a result, this section identifies compensatory mitigation measures for impacts that cannot feasibly be avoided.

7.1 SENSITIVE VEGETATION COMMUNITIES

Proposed habitat mitigation ratios and corresponding acreages for impacts to sensitive vegetation communities are presented in Tables 9 and 10 for the proposed project options. The Switchback Ramp Option and Curvilinear Ramp Option have the same direct impacts to sensitive vegetation communities (3.37 acres, comprised of 0.59 acre of permanent impact and 2.78 acres of temporary impact) and the same habitat mitigation requirements (4.40 acres comprised of 2.73 acres for temporary impacts and 1.67 acres for permanent impacts; [Table 8]). The Linear Ramp Option would require an additional 0.05 acre of habitat mitigation compared to the Switchback Ramp or Curvilinear Ramp Options, for a total mitigation requirement of 4.45 acres comprised of 2.63 acres for temporary impacts and 1.82 acres for permanent impacts (Table 9). The direct temporary impact Padre Dam Easement Construction Access was not analyzed in a stand-alone table. Implementation of this alternative would temporarily impact an additional 0.01 acre of southern willow scrub and 0.06 acre of mule fat scrub, resulting in an increase of 0.07 acre in required wetland habitat mitigation when combined with any of the other project options.

Table 8
PROPOSED MITIGATION REQUIREMENTS
FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES
FROM THE SWITCHBACK RAMP OR CURVILINEAR RAMP
PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.03	1:1	0.03
Freshwater Marsh	0.04	1:1	0.04
Flat-topped Buckwheat Scrub	0.13	1:1	0.13
Broom Baccharis dominated Sage Scrub	0.01	1:1	0.01
Non-native Grassland	0.05	-	0[2]
Total Temporary	**2.78**	**--**	**2.73**

Table 8 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE SWITCHBACK RAMP OR CURVILINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	<0.01	2:1	0.01
Freshwater Marsh	<0.01	3:1	0.01
Flat-topped Buckwheat Scrub	0.03	1:1	0.03
Broom Baccharis dominated Sage Scrub	0	--	0
Non-native Grassland	0.01	1:1	0[3]
Total Permanent	**0.59**	**--**	**1.67**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.
[2] No mitigation for temporary impacts to non-native grassland would be required, as all areas of non-native grassland that would be temporarily impacted by the proposed project would be revegetated with a native grassland and forb palette as an erosion control measure.
[3] Permanent impacts to 0.01 acre of non-native grassland are considered de minimis and mitigation is not proposed.

Table 9
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE ~~SWITCHBACK RAMP OR CURVILINEAR~~LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.02	1:1	0.02
Freshwater Marsh	0.04	1:1	0.04
Flat-topped Buckwheat Scrub	0.01	1:1	0.01
Broom Baccharis dominated Sage Scrub	0.04	1:1	0.04
Non-native Grassland	0.04	-	0[2]
Total Temporary	**2.67**	**--**	**2.63**

Table 9 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO VEGETATION COMMUNITIES/HABITAT TYPES FROM THE ~~SWITCHBACK RAMP OR CURVILINEAR~~LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	0.01	2:1	0.02
Freshwater Marsh	<0.01	3:1	0.01
Flat-topped Buckwheat Scrub	0.15	1:1	0.15
Broom Baccharis dominated Sage Scrub	0.02	1:1	0.02
Non-native Grassland	0.01	1:1	0[3]
Total Permanent	**0.74**	**--**	**1.82**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.
[2] No mitigation for temporary impacts to non-native grassland would be required, as all areas of non-native grassland that would be temporarily impacted by the proposed project would be revegetated with a native grassland and forb palette as an erosion control measure.
[3] Permanent impacts to 0.01 acre of non-native grassland are considered de minimis and mitigation is not proposed.

Measures BIO-1 through BIO-7 have been identified to avoid sensitive vegetation communities impacts to the extent feasible, and compensate for sensitive vegetation community impacts that cannot feasibly be avoided.

BIO-1 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.

BIO-2 Direct temporary impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, or preservation. Temporarily impacted areas would be revegetated with a Diegan coastal sage scrub plant palette. Mitigation for direct permanent impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would occur at a 1:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, preservation, or purchase of credits at an approved mitigation bank.

BIO-3 Whenever feasible, native vegetation shall be trimmed to the ground surface rather than uprooted.

BIO-4 The project landscape/erosion control plans shall not include invasive species (as listed in the California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory [Cal-IPC 2006, or as updated]. Native plant species shall be used in all revegetation and landscaping areas outside of the existing golf course. Native or non-invasive ornamental plant species shall be used for landscaping and revegetation within the existing golf course.

BIO-5 A qualified biologist shall be responsible for overseeing compliance with all laws, regulations, permit conditions, mitigation measures, and any other biological resources requirements during project construction. Prior to the start of construction, a qualified biologist shall conduct environmental awareness training for all construction personnel. Topics to be included in the training include, but are not limited to, the construction limits, sensitive habitats, features, plants, and animal species to avoid, mitigation measure and/or permit condition requirements, seasonal or other time-related restrictions on construction, and measures related to erosion control and spill prevention. The qualified biologist shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of field experience.

BIO-6 Sensitive vegetation communities, jurisdictional waters and wetlands, and other sensitive biological resources located outside of permanent and temporary impact areas shall be identified on the final construction plans as "environmentally sensitive areas" and protected with temporary fencing (e.g., orange snow fence). A qualified biologist shall monitor the installation of the temporary fencing and ensure it is installed prior to the start of construction. A qualified biologist shall regularly inspect the temporary fencing to ensure it remains in place throughout construction.

BIO-7 SANDAG shall prepare a revegetation plan showing how a~~A~~ll areas of temporary disturbance within sensitive vegetation communities shall be revegetated with appropriate native species. Appropriate species include those that are (1) native, and (2) characteristic of the impacted type of vegetation community (e.g. southern riparian forest and southern willow scrub would be revegetated with willows and other native riparian vegetation; mule fat scrub would be revegetated with mule fat and other species associated with this community; freshwater marsh would be revegetated with cattail and/or bulrush or other native marsh species; buckwheat and baccharis scrub would be revegetated with coastal sage scrub-associated species; and non-native grassland would be revegetated with native grasses and forbs). The goal of the revegetation plan shall be to meet or exceed pre-project conditions.

7.2 JURISDICTIONAL WATERS AND WETLANDS

Measure BIO-8 would mitigate for impacts to jurisdictional waters and wetlands that cannot feasibly be avoided.

BIO-8 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or

more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct temporary impacts to non-wetland WUS/CDFW streambed would occur through returning these areas to their pre-construction contours and conditions. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank. Direct permanent impacts to non-wetland WUS/CDFW streambed would occur at a 1:1 ratio through on- and/or off-site restoration, enhancement, and/or establishment/re-establishment. The USACE, RWQCB, and CDFW would determine the final mitigation requirements for impacts to jurisdictional waters and wetlands.

Proposed mitigation ratios and corresponding acreages for impacts to USACE jurisdictional habitat are presented in Table 10. The Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option have the same impacts to USACE jurisdictional habitat (0.21 acre, comprised of 0.03 acre of permanent impact and 0.18 acre of temporary impact) and the same habitat mitigation requirements (0.25 acre comprised of 0.18 acre for temporary impacts and 0.07 acre for permanent impacts; [Table 10]).

Table 10
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO USACE JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Wetland Waters of the U.S.			
Southern Riparian Forest	0.12	1:1	0.12
Southern Willow Scrub	0.01	1:1	0.01
Freshwater Marsh	0.04	1:1	0.04
Subtotal	**0.17**	--	**0.17**
Non-wetland Waters of the U.S.			
Ephemeral Stream	0.01	1:1	0.01
Subtotal	**0.01**	--	**0.01**
Total Temporary	**0.18**	--	**0.18**
Permanent Impacts			
Wetland Waters of the U.S.			
Southern Riparian Forest	0.01	3:1	0.03
Southern Willow Scrub	0.01	3:1	0.03
Freshwater Marsh	<0.01	3:1	0.01
Subtotal	**0.02**	--	**0.07**

Table 10 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO USACE JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Non-wetland Waters of the U.S.			
Ephemeral Stream	<0.01	1:1	<0.01
Subtotal	**<0.01**	**--**	**<0.01**
Total Permanent	**0.03**	**--**	**0.07**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.

Proposed mitigation ratios and corresponding acreages for impacts to CDFW jurisdictional habitat are presented in Table 11. The Switchback Ramp Option, Curvilinear Ramp Option, and Linear Ramp Option have the same impacts to CDFW jurisdictional habitat (3.14 acres, comprised of 0.55 acre of permanent impact and 2.59 acres of temporary impact) and the same habitat mitigation requirements (4.24 acres comprised of 2.59 acres for temporary impacts and 1.65 acres for permanent impacts; Table 11). The Padre Dam Easement Construction Access route would result in direct temporary impacts to an additional 0.01 acre of southern willow scrub and 0.06 acre of mule fat scrub. Since direct temporary impacts to southern willow scrub and mule fat scrub would likely be mitigated at a 1:1 ratio, inclusion of the Padre Dam Easement Construction Access route in the proposed project would require an additional 0.07 acre in required wetland habitat mitigation.

Table 11
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO CDFW JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Temporary Impacts			
Riparian/Wetland Habitat			
Southern Riparian Forest	2.08	1:1	2.08
Southern Willow Scrub	0.44	1:1	0.44
Mule Fat Scrub	0.03	1:1	0.03
Freshwater Marsh	0.04	1:1	0.04
Subtotal	**2.59**	**--**	**2.59**
Stream Channel/Unvegetated Habitat			
Streambed	<0.01	1:1	<0.01
Subtotal	**<0.01**	**--**	**<0.01**
Total Temporary	**2.59**	**--**	**2.59**

Table 11 (cont.)
PROPOSED MITIGATION REQUIREMENTS FOR IMPACTS TO CDFW JURISDICTIONAL HABITATS FROM THE SWITCHBACK RAMP, CURVILINEAR RAMP, OR LINEAR RAMP PROJECT OPTIONS

Vegetation Community	Impact Acreage[1]	Mitigation Ratio	Proposed Mitigation[1]
Permanent Impacts			
Riparian/Wetland Habitat			
Southern Riparian Forest	0.50	3:1	1.50
Southern Willow Scrub	0.04	3:1	0.12
Mule Fat Scrub	<0.01	2:1	0.01
Freshwater Marsh	<0.01	3:1	0.01
Subtotal	**0.55**	**--**	**1.64**
Stream Channel/Unvegetated Habitat			
Streambed	<0.01	--	<0.01
Subtotal	**<0.01**	--	**<0.01**
Total Permanent	**0.55**	**--**	**1.65**

[1]Rounded to the nearest hundredth acre; totals reflect rounding.

7.3 SPECIAL STATUS ANIMAL SPECIES

Measure BIO-9 is identified to compensate for the impacts to special status bird species habitats that cannot feasibly be avoided. Measure BIO-10 is identified to substantially lessen the indirect impacts of construction noise on special status bird species. Mitigation measure BIO-11 is identified to avoid direct impacts to migratory birds protected under the MBTA. Mitigation measure BIO-12 is identified to compensate for impacts to USFWS-designated critical habitat for least Bell's vireo.

BIO-9 If feasible, no trimming, grubbing, or clearing of riparian trees or vegetation shall occur during the breeding season for least Bell's vireo (March 15-September 15), yellow-breasted chat and yellow warbler (February 15-August 31), or raptors (January 15-July 15. If riparian tree and vegetation trimming, grubbing, or clearing cannot feasibly occur outside of these breeding seasons, then pre-construction nesting surveys, as described below, would be conducted by a qualified biologist prior to initiating vegetation trimming, clearing, or grubbing activities. The vireo nesting survey shall consist of three surveys spaced seven to ten days apart, with the final survey occurring no more than three days prior to initiating trimming, clearing, or grubbing activities. If nesting vireos are detected on or within 500 feet of planned clearing or grubbing activities, then clearing or grubbing on or within 500 feet of the nesting vireos shall be postponed until a qualified biologist determines that the young have fledged or the nest is no longer active. The nesting survey for yellow-breasted chat, yellow warbler, and raptors shall consist of one pre-construction nesting survey conducted no more than seven days prior to the commencement of vegetation trimming, clearing or grubbing to determine if active nests of these species are present in the affected areas. If nesting yellow warbler, yellow-breasted chat, or

raptors are detected on or within 300 feet of the impact area during pre-construction surveys, construction on or within 300 feet of the nest shall be postponed until after the young have fledged or the nest is no longer active. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-10 If feasible, operation of construction equipment (e.g. backhoes, loaders, bulldozers, excavators, skid steers, graders) shall not occur during the breeding seasons for the least Bell's vireo (March 15-September 15), yellow warbler and yellow-breasted chat (February 15-August 31), or nesting raptors (January 15-July 15). If it is not feasible to avoid operation of construction equipment during any of these breeding seasons, then one pre-construction nesting survey shall be conducted by a qualified biologist no more than seven days prior to the start of construction to determine if active nests of these species are present within the areas potentially impacted by noise. The "noise impact area" is defined as up to 500 feet from the noise source for least Bell's vireo and up to 300 feet from the noise source for yellow warbler, yellow-breasted chat, and raptors. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-9. If it is determined at the completion of pre-construction surveys that active nests belonging to least Bell's vireo, yellow warbler, yellow-breasted chat, or raptors are absent from the noise impact area, construction shall be allowed to proceed. If pre-construction surveys determine the presence of active nests belonging to any of these sensitive species, then construction shall either: (1) be postponed within the noise impact area until a qualified biologist determines any nests are no longer active or until after the respective breeding season; or (2) not occur until a temporary noise barrier or berm is constructed at the edge of the construction limits and/or around the piece of equipment to ensure that noise levels within the noise impact area are reduced to below one-hour average of 60 dBA or ambient, whichever is greater, at the nest location. Decibel output will be confirmed by a qualified noise specialist and intermittent monitoring by a qualified biologist will be required to ensure that conditions have not changed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-11 If feasible, no grubbing, trimming, or clearing of vegetation shall occur during the general avian breeding season (February 15-August 31). If grubbing, trimming, or clearing cannot feasibly occur outside of the general avian breeding season, then one pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to the commencement of vegetation clearing or grubbing to determine if active bird nests are present in the affected areas. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-9. Should an active migratory bird nest be located, the project biologist would direct vegetation clearing away from the nest until it has been determined by the project biologist that the young have fledged or the nest has failed.

If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, clearing, grubbing, and grading shall be allowed to proceed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.

BIO-12 Mitigation for direct impacts to 0.52 acre of riparian habitat identified by the USFWS as critical habitat for least Bell's vireo, including 0.48 acre of southern riparian forest, 0.04 acre of southern willow scrub, and less than 0.01 acre of mule fat scrub, would be addressed through Section 7 consultation as part of the CWA 404 permitting process and the Fish and Game Code Section 2080 Incidental Taker Permit (if required). The results of the Section 7 consultation and conditions of the Incidental Take Permit (if required) would determine the need, if any, for special conditions or habitat mitigation beyond the mitigation identified for impacts to riparian habitat identified in BIO-1. As described in BIO-1, direct permanent impacts to southern riparian forest and southern willow scrub would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.

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Appendix A

Site Photographs



Photo 1. Looking south at freshwater marsh and southern willow scrub along Sycamore Creek in the western portion of the study area.



Photo 2. Looking east at the existing dirt trail on top of the berm in the western portion of the study area.

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Photo 3. Looking east at southern willow scrub in the central portion of the study area. This habitat is north of the berm that abuts the San Diego River.



Photo 4. Looking east at the existing dirt trail on top of the berm in the central portion of the study area.

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Photo 5. Looking west at the San Diego River channel and associated riparian forest habitat in the central portion of the study area.



Photo 6. Looking southwest at a stand of southern riparian forest adjacent to the golf course in the eastern portion of the study area.

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Photo 7. Looking north at a small stand of southern riparian forest east of the golf course maintenance building in the eastern portion of the study area.



Photo 8. Looking north at the existing San Diego River Trail just east of the golf course.

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Photo 9. Looking east at the existing San Diego River Trail just east of the golf course.



Photo 10. Looking south at riparian forest along the existing San Diego River Trail in the eastern portion of the study area.

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Photo 11. Looking east at a small bridge crossing of non-wetland Waters of the U.S. and CDFW riparian habitat in the eastern portion of the study area.



Photo 12. Looking east at the undeveloped trail below the Carlton Hills Boulevard bridge in the eastern portion of the study area.

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Photo 13. Looking northwest at disturbed southern riparian forest in Mast Park, just east of Carlton Hills Boulevard.



Photo 14. Looking east at an existing dirt trail in Mast Park in the eastern portion of the study area.

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Appendix B

Plant Species Observed

Appendix B
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonadeberry
Asteraceae	*Ambrosia psilostachya*	western ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Artemisia palmeri†	San Diego sagewort†
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	Baccharis sarothroides	broom baccharis
	Encelia californica	California encelia
	Erigeron canadensis	horseweed
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Iva hayesiana†	San Diego marsh-elder†
	Pseudognaphalium sp.	everlasting
	Xanthium strumarium	cocklebur
Boraginaceae	*Heliotropium curassavicum* var. *occulatum*	salt heliotrope
Cactaceae	*Opuntia littoralis*	coastal prickly pear
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla
	Marah macrocarpa	wild cucumber
Cyperaceae	*Scirpus* sp.	bulrush
Euphorbiaceae	*Croton californicus*	California croton
Fabaceae	*Acmispon americanus*	Spanish-clover
	Amorpha fruticosa	false indigo
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
Juglandaceae	*Juglans californica* var. *californica*†	Southern California black walnut†
Juncaceae	*Juncus acutus* ssp. *leopoldii*†	southwestern spiny rush†
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
Onagraceae	*Camissoniopsis* sp.	sun cup
	Epilobium ciliatum ssp. *ciliatum*	willow herb
	Oenothera elata ssp. *hookeri*	great marsh evening-primrose

Appendix B (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species (cont.)		
Papaveraceae	*Eschscholzia californica*	California poppy
Platanaceae	*Platanus racemose*	western sycamore
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Rosaceae	*Heteromeles arbutifolia*	toyon
	Rosa californica	California rose
Salicaceae	*Populus fremontii*	western cottonwood
	Salix exigua	narrow-leaved willow
	Salix lasiolepis	arroyo willow
Sapindaceae	*Acer negundo*	box-elder
Saururacaea	*Anemopsis californica*	yerba mansa
Solanaceae	*Datura wrightii*	jimson weed
Typhaceae	*Typha* sp.	cattail
Vitaceae	*Vitis girdiana*	desert wild grape
Non-native Species		
Aizoaceae	*Carpobrotus edulis*	hottentot-fig
Anacardiaceae	*Schinus terebinthifolius*	Brazilian pepper tree
Apiaceae	*Apium graveolens*	celery
	Foeniculum vulgare	fennel
Arecaceae	*Washingtonia robusta*	Mexican fan palm
Asparagaceae	*Asparagus asparagoides*	bridal creeper
Asteraceae	*Erigeron bonariensis*	flax-leaf fleabane
	Helminthotheca echioides	bristly ox-tongue
	Lactuca serriola	wild lettuce
	Sonchus oleraceus	common sow thistle
Brassicaceae	*Hirschfeldia incana*	short-pod mustard
	Raphanus sativus	wild radish
	Sisymbrium irio	London rocket
Chenopodiaceae	*Chenopodium album*	pigweed
	Salsola tragus	Russian thistle
Euphorbiaceae	*Euphorbia peplus*	petty spurge
	Ricinus communis	castor bean
Fabaceae	*Melilotus albus*	white sweet clover
Moraceae	*Ficus carica*	edible fig

Appendix B (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Non-native Species (cont.)		
Oleaceae	*Fraxinus uhdei*	shamel ash
Onagraceae	*Ludwigia grandiflora*	large-flowered water primrose
Plantaginaceae	*Plantago major*	common plantain
Poaceae	*Avena* sp.	wild oat
	Bromus diandrus	common ripgut grass
	Bromus madritensis ssp. *rubens*	red brome
	Cortaderia jubata	pink pampasgrass
	Cynodon dactylon	Bermuda grass
	Paspalum dilatatum	dallis grass
	Pennisetum setaceum	purple fountain grass
	Stipa miliacea	smilo grass
Polygonaceae	*Rumex crispus*	curly dock
Solanaceae	*Nicotiana glauca*	tree tobacco
Tamaricaceae	*Tamarix* sp.	tamarisk
Tropaeolaceae	*Tropaeolum majus*	garden nasturtium

†Sensitive species

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Appendix C

Animal Species Observed or Detected

Appendix C
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES			
Order	Family		
Decapoda	Cambaridae	*Procambarus* sp.	crayfish
Lepidoptera	Lycaenidae	*Icaricia acmon acmon*	acmon blue
	Nymphalidae	*Danaus plexippus*	monarch
		Nymphalis antiopa	mourning cloak
	Pieridae	*Pieris rapae*	cabbage white
		Pontia sisymbrii	spring white
	Papilionidae	*Papilio eurymedon*	pale swallowtail
		Papilio rutulus	western tiger swallowtail
		Papilio zelicaon	anise swallowtail
Odonata	Libellulidae	*Libellula saturata*	flame skimmer
VERTEBRATES			
Amphibians			
Order	Family		
Anura	Ranidae	*Lithobates catesbeianus*	American bullfrog
Reptiles			
Order	Family		
Squamata	Colubridae	*Masticophis flagellum*	western coachwhip
	Phrynosomatidae	*Sceloporus occidentalis*	western fence lizard
		Uta stansburiana	side-blotched lizard
Birds			
Order	Family		
Accipitriformes	Accipitridae	*Accipiter cooperii†*	Cooper's hawk†
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
		Elanus leucurus†	white-tailed kite†

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Aix sponsa	wood duck
Apodiformes	Apodidae	*Aeronautes saxatalis*	white-throated swift
	Trochilidae	*Calypte anna*	Anna's hummingbird
Charadriiformes	Charadriidae	*Charadrius vociferus*	killdeer
	Laridae	*Larus* sp.	gull
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Zenaida macroura	mourning dove
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Bombycillidae	*Bombycilla cedrorum*	cedar waxwing
	Cardinalidae	*Pheucticus melanocephalus*	black-headed grosbeak
		Piranga ludoviciana	western tanager
	Corvidae	*Aphelocoma californica*	western scrub jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
		Pipilo maculatus	spotted towhee
	Estrildidae	*Lonchura punctulata*	scaly-breasted munia
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Petrochelidon pyrrhonota*	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
		Tachycineta bicolor	tree swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus cucullatus	hooded oriole
		Molothrus ater	brown-headed cowbird
	Parulidae	*Geothlypis trichas*	common yellowthroat
		Icteria virens†	yellow-breasted chat†
		Oreothlypis celata	orange-crowned warbler
		Setophaga petechia†	yellow warbler†

Appendix C (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Passeriformes (cont.)	Sittidae	*Sitta carolinensis*	white-breasted nuthatch
	Sturnidae	*Sturnus vulgaris*	European starling
	Sylviidae	*Chamaea fasciata*	wrentit
	Troglodytidae	*Thryomanes bewickii*	Bewick's wren
		Troglodytes aedon	house wren
	Turdidae	*Sialia mexicana*	western bluebird
		Turdus migratorius	American robin
	Tyrannidae	*Empidonax difficilis*	pacific-slope flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Tyrannus vociferans	Cassin's kingbird
	Vireonidae	*Vireo bellii pusillus*†	least Bell's vireo†
Pelecaniformes	Ardeidae	*Ardea alba*	great egret
		Butorides virescens	green heron
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Order	Family		
Artiodactyla	Cervidae	*Odocoileus hemionus*	mule deer
Carnivora	Procyonidae	*Procyon lotor*	raccoon
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Muridae	*Neotoma* sp.	woodrat
	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

†Special Status Species

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Appendix D

Special Status Plant Species Potential to Occur

Appendix D
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Adolphia californica	San Diego adolphia	--/-- CRPR 2B.1	Perennial shrub. Most often found in sage scrub but occasionally occurs in peripheral chaparral habitats, particularly hillsides near creeks. Flowering period December-April. Elevation 20-655 feet (6-200 meters).	**Low.** Very little suitable habitat is present on site. Species would likely have been observed if present.
Ambrosia pumila	San Diego ambrosia	FE/-- CRPR 1B.1	Small perennial herb. Occurs primarily on upper terraces of rivers and drainages. Within these areas it is typically found in grassland and within openings in coastal sage scrub, on sandy loam or clay soils. Flowering period April-October. Elevation 100-2,001 feet (30-610 meters).	**Low.** Suitable soils and habitat present on portions of the site but species was not observed during focused rare plant surveys or other biological surveys.
Artemisia palmeri	San Diego sagewort	--/-- CRPR 4.2	Shrub. Typically found along stream courses, often within coastal sage scrub and southern mixed chaparral. Flowering period May-September. Elevation 16-3,540 feet (5-1,080 meters).	**Present.** A total of four individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the Biological Study Area (BSA).

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Bloomeria clevelandii	San Diego goldenstar	--/-- CRPR 1B.1	Perennial bulbiferous herb. Habitat includes clay soils on valley grasslands, particularly near mima mound topography or in the vicinity of vernal pools. Flowering period April-May. Elevation 164-1,525 feet (50-465 meters).	**None.** Suitable clay soils and habitat do not occur on the project site.
Brodiaea orcuttii	Orcutt's brodiaea	--/-- CRPR 1B.1	Small perennial herb. Occurs only on clay and serpentine soils in vernally moist environments, usually near vernal pools, meadows, and seeps. Flowering period May-July. Elevation 330-5,740 feet (100-1750 meters).	**None.** Suitable soils and habitat do not occur on the project site.
Centromadia pungens ssp. *laevis*	Smooth tarplant	--/-- CRPR 1B.1	Annual herb blooming April-September. Occurs in chenopod scrub, meadows, seeps, playas, riparian woodlands, and grasslands. Usually found in alkaline soils. Elevation 165-2,890 feet (50-880 meters).	**None.** Suitable alkaline soil and wet meadows do not occur on site.
Dudleya variegata	Variegated dudleya	--/-- CRPR 1B.2	Small perennial succulent blooming April-June. Occurs on dry hillsides and mesas in chaparral, valley grassland, foothill woodland, coastal sage scrub and freshwater wetlands. Elevation 0-985 feet (0-300 meters).	**None.** Suitable dry hillsides and mesas do not occur on site.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Ericameria palmeri var. *palmeri*	Palmer's goldenbush	--/-- CRPR 1B.1	Large evergreen shrub. Occurs in coastal drainages, mesic chaparral, and occasionally in coastal sage scrub. Flowering period July-November. Elevation 165-1,700 feet (50-520 meters).	**Low.** Limited areas of suitable habitat are present on site. Species would have been detectable during rare plant and other biological surveys, but was not observed.
Ferocactus viridescens	San Diego barrel cactus	--/-- CRPR 2B.1	Perennial stem succulent blooming May-June. Optimal habitat for this cactus appears to be Diegan coastal sage scrub hillsides, often at the crest of slopes and growing among cobbles. Occasionally found on vernal pool periphery and mima mound topography. Elevation 10-1,476 feet (3-450 meters).	**Low.** Coastal sage scrub on site is limited and disturbed. Appropriate hillsides and cobbles not present on site.
Harpagonella palmeri	Palmer's grappling hook	--/-- CRPR 4.2	Annual herb blooming March-May. Occurs on clay soils in annual grasslands and coastal sage scrub. Elevation 42-3,970 feet (13-1,210 meters).	**None.** Suitable clay soils not present on site.
Isocoma menziesii var. *decumbens*	Decumbent goldenbush	--/-- CRPR 1B.2	Perennial shrub blooming April-November. Occurs in coastal sage scrub habitat intermixed with grassland, and is more partial to clay soils than other closely related varieties. Elevation 32-442 feet (10-135 meters).	**None.** Suitable clay soils not present on site.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Iva hayesiana	San Diego marsh elder	--/-- CRPR 2B.2	Perennial herb. Intermittent stream channels are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized. Flowering period April-October. Elevation 32-1,640 feet (10-500 meters).	**Present.** A total of 17 individuals were observed in southern riparian forest adjacent to the existing trail in the southern portion of the BSA.
Juglans californica var. *californica*	California black walnut	--/-- CRPR 4.2	Perennial deciduous tree occurring in alluvial habitats. Elevation 16-5,870 feet (5-1,790 meters).	**Present.** A total of 29 individuals were observed in southern riparian forest and adjacent habitat in the southern portion of the BSA.
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	--/-- CRPR 4.2	Perennial rhizomatous herb. Occurs in alkaline meadows and seeps, coastal salt marshes, and coastal dunes. Flowering period March-June. Elevation 0-3,117 feet (0-950 meters).	**Present.** Approximately 200 individuals were observed in southern riparian forest in the northern portion of the BSA.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Lepidium virginicum var. *robinsonii*	Robinson's peppergrass	--/-- CRPR 4.3	Annual herb. Grows in openings in chaparral and sage scrub at the coastal and foothill elevations. Typically observed in relatively dry, exposed locales rather than beneath a shrub canopy. Flowering period is January -July. Elevation 65-4,400 feet (20-1340 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.
Monardella viminea	Willowy monardella	FE/SE CRPR 1B.1	Cespitose subshrub blooming June-August. Occurs in rocky washes with cobbles and two alluvial benches at elevations from 0-1300 feet (0-400 meters)	**None.** Suitable rocky washes and alluvial benches not present on site.
Quercus dumosa	Nuttall's scrub oak	--/-- CRPR 1B.1	Perennial evergreen shrub. Chaparral with a relatively open canopy cover is the preferred habitat in flat terrain (also found in coastal scrub). On north-facing slopes, may grow in dense monotypic stands. Flowering period February-August. Elevation 49-1,312 feet (15-400 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.
Selaginella cinerascens	Ashy spike-moss	--/-- CRPR 4.1	Perennial rhizomatous herb occurring in chaparral and coastal scrub habitats. Elevation 25-2,035 feet (8-620 meters).	**Low.** Very little potentially suitable habitat is present on site and species was not observed during rare plant or other biological surveys.

Appendix D (cont.)
SPECIAL STATUS PLANT SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habit, Ecology and Life History	Potential to Occur
Senecio aphanactis	Chaparral ragwort	--/-- CRPR 2B.2	Small annual herb blooming from January-April. Occurs in alkaline flats and dry open rocky areas in foothill woodland, northern coastal scrub and coastal sage scrub. Elevation 32-1800 feet (10-550 meters).	**None.** Suitable alkaline soils and open rocky areas not present on site.
Stemodia durantifolia	Purple stemodia	--/-- CRPR 2B.1	Small perennial herb blooming year round. Occurs on wet sand or rocks and drying streambeds in riparian habitats. Elevation 0-1310 feet (0-400 meters).	**Moderate.** Appropriate habitat is present on site, however species was not observed during focused rare plant surveys or other biological surveys.

[1]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; CRPR = California Rare Plant Rank: 1A – presumed extinct; 1B – rare, threatened, or endangered in California and elsewhere; 2A – presumed extirpated in California but more common elsewhere; 2B – rare, threatened, or endangered in California but more common elsewhere; 3 – more information needed; 4 – watch list for species of limited distribution.
Extension codes: .1 – seriously endangered; .2 – moderately endangered; .3 – not very endangered

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Appendix E

Special Status Animal Species Potential to Occur

Appendix E
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles				
Actinemys marmorata	Southwestern pond turtle	--/SSC	Almost entirely aquatic; occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation. Requires basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	**Low.** Species could potentially occupy ponded streams on site, although suitable basking sites are limited.
Anaxyrus californicus	Arroyo toad	FE/SSC	Requires rivers with sandy banks, willows, cottonwoods, and sycamores. Breeds in areas with shallow, slowly moving streams, but burrows in adjacent uplands during dry months.	**Not expected.** Riparian habitat on site is likely too dense to support this species. Species is not known from the project vicinity.
Anniella pulchra pulchra	Silvery legless lizard	--/SSC	Areas with loose soil, particularly in sand dunes and or otherwise sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	**Moderate.** Potentially suitable habitat is present on site, although species was not observed during biological surveys.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles (cont.)				
Cnemidophorus hyperythrus	Orange-throated whiptail	--/SSC	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas, shaded areas, and abundant insect prey base, particularly termites (*Reticulitermes* sp.).	**High.** Suitable habitat is present on site and species is known from the project vicinity.
Crotalus ruber ruber	Northern red diamond rattlesnake	--/SSC	Found in chaparral, coastal sage scrub, along creek banks, particularly among rock outcrops or piles of debris with a supply of burrowing rodents for prey.	**Not expected.** Suitable chaparral and sage scrub habitat with rock outcroppings are not present on site.
Eumeces skitonianus interparietalis	Coronado skink	--/SSC	Occurs in grasslands, coastal sage scrub, and open chaparral where there is abundant leaf litter or low herbaceous growth.	**Low.** Suitable grassland and sage scrub habitats are very limited on site.
Phrynosoma coronatum blainvillii	San Diego horned lizard	--/SSC	Coastal sage scrub, chaparral, grassland, and woodlands up to 6,000 ft. Not common where Argentine ants (*Linepithema humile*) have excluded native harvester ants (*Pogonomyrmex* sp.).	**Low.** Suitable habitat present on site, but species unlikely to occur due to lack of typical prey species. Harvester ant colonies were not observed during biological surveys.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Amphibians and Reptiles (cont.)				
Salvadora hexalepis virgultea	Coast patch-nosed snake	--/SSC	Inhabits semi-arid brushy areas and chaparral in canyons, rocky hillsides, and plains.	**Not expected.** Suitable brushy habitat within canyons and rocky hillsides are not present on site.
Spea hammondii	Western spadefoot	--/SSC	Occurs in open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; requires temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	**Low.** Suitable temporary pools for breeding are not present on site.
Thamnophis hammondii	Two-striped garter snake	--/SSC	Typical habitat is along permanent and intermittent streams bounded by dense riparian vegetation; also found associated with vernal pools and stock ponds.	**High.** Suitable habitat is present along the San Diego River, and limited areas of suitable habitat occur along Sycamore Creek.
Thamnophis sirtalis novum	South coast garter snake	--/SSC	Typically found in woodlands, grasslands, coniferous forests, and scrublands near water. Found in the coastal plain from Ventura County to San Diego County, from sea level to about 850 m.	**High.** Suitable habitat is present along the San Diego River, and limited areas of suitable habitat occur along Sycamore Creek.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds				
Accipiter cooperii	Cooper's hawk	--/WL	Occurs year-round throughout San Diego County's coastal slope where stands of trees are present Found in oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	**Present.** One individual was observed perched in southern riparian forest in the western portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Agelaius tricolor	Tricolored blackbird	BCC/SSC	Generally found in large freshwater marshes with dense stands of cattails or bulrushes. Forages in open habitats such as farm fields, pastures, and large lawns.	**Low.** Suitable foraging habitat is present on site; however large freshwater marshes are absent from the site. This species was not observed or otherwise detected during multiple site surveys.
Aimophila ruficeps canescens	Southern California rufous-crowned sparrow	--/WL	Occurs in coastal sage scrub and sparse mixed chaparral on rocky hillsides and in canyons; also found in open sage scrub/grassy areas of successional growth.	**Not expected.** Suitable habitat on rocky hillsides and canyons not present on site.
Buteo swainsoni	Swainson's hawk	BCC/ST	Nests in riparian woodland and forages over grassland. Once a common species in San Diego County, now a rare migrant, observed primarily in Borrego Valley. Species no longer nests in southern California (Unitt 2004).	**Low.** Suitable riparian woodland habitat is present; however, species is unlikely to occur on site given its rarity in San Diego County.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Camphylorhynchus brunnicapillus couesi	Coastal cactus wren	--/SSC	Occurs in coastal sage scrub with large cacti for nesting.	**Not expected.** Suitable stands of large cacti for nesting do not occur on site.
Circus cyaneus	Northern harrier	--/SSC	Within San Diego County, distribution is primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. Typical habitat consists of open grassland and marsh.	**Moderate.** Small areas of suitable marsh habitat are present on site. Species could also forage over the golf course.
Coccyzus americanus occidentalis	Yellow-billed cuckoo	FT/SE	Generally occurs along larger river systems, where it nests in riparian forest dominated by willows and cottonwoods. In California, species is most likely to be found in patches of riparian habitat greater than 200 ac in size, and they rarely use patches less than 49 ac in size (Halterman et al 2015).	**Low.** Sufficient expanses of suitable riparian habitat do not occur on site. Species is not known from the project vicinity.

Appendix E (cont.) **SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR**				
Species Name	**Common Name**	**Status[1]**	**Habitat Associations**	**Potential to Occur**
Birds (cont.)				
Elanus leucurus	White-tailed kite	--/FP	Riparian woodlands and oak or sycamore groves adjacent to grassland.	**Present.** One individual was observed flying over southern riparian forest south of the eastern portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Empidonax traillii extimus	Southwestern willow flycatcher	BCC/SE	Breeds within thickets of willows or other riparian understory usually along streams, ponds, lakes, or canyons. One of the most important characteristics of the habitat appears to be the presence of dense vegetation, usually throughout all vegetation layers present. Almost all breeding habitats are within close proximity of water or very saturated soil.	**Absent.** Protocol surveys conducted in 2016 were negative for this species.
Falco mexicanus	Prairie falcon	--/WL	Nests on cliff or bluff ledges or occasionally in old hawk or raven nests; forages in grassland or desert habitats. Observed year-round in San Diego County but more commonly during winter.	**Low**. Suitable dry, open habitat occurs on the project site; however, this species was not observed or otherwise detected during multiple project surveys. This species has potential to forage over the site.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Icteria virens	Yellow-breasted chat	--/SSC	Occurs in mature riparian woodland, typically returning to San Diego County in mid-April to breed.	**Present.** Species was detected in two locations in southern riparian forest in the western portion of the BSA. Suitable nesting habitat for this species occurs within the BSA.
Pandion haliaetus	Osprey	--/WL	Found near rivers, lakes and the coast with large numbers of fish present. Species is more numerous in San Diego during migration and winter than in the breeding season. Rarely breeds in San Diego County.	**High.** Species has high potential to forage over open water areas on site. Species is not expected to nest within the project site.
Plegadis chihi	White-faced ibis	--/WL	Occurs in large marshes, with nesting colony hidden in inaccessible reedbed or willow-covered area.	**Moderate.** Species could forage in marsh habitat adjacent to open water in the eastern portion of the site.
Polioptila californica californica	Coastal California gnatcatcher	FT/SSC	Occurs in coastal sage scrub with California sagebrush (*Artemesia californcia*) as a dominant or co-dominant species, at elevations below 2,500 feet.	**Absent.** Protocol surveys conducted in 2016 were negative for this species. Very little sage scrub occurs within the BSA.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Birds (cont.)				
Rallus obsoletus levipes (formerly Rallus longirostris levipes)	California Ridgway's rail (formerly Light-footed Clapper Rail)	FE/SE	Inhabits extensive coastal salt and freshwater marshes containing cordgrass, cattails, or tules, and rushes.	**Not Expected**. Very little marsh habitat occurs on site and this species is not known from the project vicinity. Populations of this species are located much further west along the San Diego River, near San Diego Bay.
Setophaga petechia	Yellow warbler	BCC/SSC	Riparian woodland, riparian forest, mule fat scrub, and southern willow scrub are typical habitats.	**Present.** Species was detected in riparian forest in six locations within the BSA, ranging from the western to the eastern portions of the alignment. Suitable nesting habitat for this species occurs within the BSA.
Vireo bellii pusillus	Least Bell's vireo	FE/SE	Occurs in riparian thickets, usually willow and cottonwood. Summer resident of Southern California. Typically arrives in San Diego County during the third week of March (Unitt 2004).	**Present.** Species was detected in five locations within and adjacent to the BSA during protocol surveys conducted in 2016. Suitable nesting habitat for this species occurs within the BSA.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Mammals				
Antrozous pallidus	Pallid bat	--/SSC	Locally common species of low elevations in California. Rocky, mountainous areas and near water; also found over more open, sparsely vegetated grasslands, and prefers foraging in the open. Uses three different roosts: 1) the day roost is in a warm, horizontal opening such as rock cracks; 2) the night roost is in the open, near foliage; and 3) the hibernation roost, which is in caves or cracks in rocks.	**High.** Suitable open space for foraging and roosting habitat present on site.
Chaetodipus californicus femoralis	Dulzura pocket mouse	--/SSC	Variety of habitats including coastal scrub, chaparral, and grasslands in San Diego County. Often associated with grass-chaparral edges.	**Low.** Very little suitable grassland habitat is present on site. No sign of this species was observed during surveys.
Chaetodipus fallax fallax	Northwestern San Diego pocket mouse	--/SSC	Occurs in open areas of coastal sage scrub and weedy growth, often on sandy substrates.	**Low.** Very limited suitable habitat is present on site. No sign of this species was observed during surveys.
Lasiurus blosservillii	Western red bat	--/SSC	Riparian areas dominated by cottonwoods, oaks, sycamores, and walnuts.	**High.** Suitable riparian habitat is present on site.

Appendix E (cont.)
SPECIAL STATUS ANIMAL SPECIES POTENTIAL TO OCCUR

Species Name	Common Name	Status[1]	Habitat Associations	Potential to Occur
Mammals (cont.)				
Lepus californicus bennettii	San Diego black-tailed jackrabbit	--/SSC	Found primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.	**Low.** Although potentially suitable open habitat is present on site, there is ongoing anthropogenic disturbance due to the golf course and this area is unlikely to support this species.
Neotoma lepida intermedia	San Diego desert woodrat	--/SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	**Not Expected.** Very little sage scrub occurs on site and rock outcrops are not present. Conspicuous nests of this species were not observed during multiple site surveys.

[1]Listing is as follows: F = Federal; S = State of California; E = Endangered; T = Threatened; C=Candidate; R = Rare; FP = Fully Protected; BCC = Bird of Conservation Concern; SSC = State Species of Special Concern; WL = Watch List.

Appendix F

Explanation of Status Codes from Plant and Animal Species

Appendix F
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE	Federally listed endangered
FT	Federally listed threatened
FC	Federal candidate for listing
BCC	Birds of Conservation Concern (discussed in more detail, below)

California Department of Fish and Wildlife (CDFW)

SE	State listed endangered
SR	State listed rare
ST	State listed threatened
SSC	State species of special concern
WL	Watch List

Fully Protected	Fully Protected species refer to all vertebrate and invertebrate taxa of concern to the Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

OTHER CODES AND ABBREVIATIONS

USFWS Birds of Conservation Concern (BCC)

This report from 2002 aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities and draw attention to species in need of conservation action. USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. The report is available online at http://migratorybirds.fws.gov/reports/bcc2002.pdf.

OTHER CODES AND ABBREVIATIONS (cont.)

California Native Plant Society (CNPS) California Rare Plant Ranking (CRPR)

Lists

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2A = Presumed extirpated in California but more common elsewhere.

2B = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

List/Threat Code Extensions

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

.2 – Fairly endangered in California (20 to 80 percent occurrences threatened)

.3 – Not very endangered in California (less than 20 percent of occurrences threatened, or no current threats known)

A "CA Endemic" entry corresponds to those taxa that only occur in California.

All List 1A (presumed extinct in California) and some List 3 (need more information; a review list) plants lacking threat information receive no extension. Threat Code guidelines represent only a starting point in threat level assessment. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Code.

Appendix G

2016 Rare Plant Survey Report

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August 25, 2016 NAS-06

Mr. Stephan Vance
Sr. Regional Planner
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Subject: 2016 Rare Plant Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Mr. Vance:

This report presents the results of the Year 2016 Rare Plant Surveys conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results.

PROJECT LOCATION AND DESCRIPTION

The project is located within the Cities of Santee and San Diego, California (Figure 1). The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 2). The project's study area is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues through the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park West. The southern boundary is bordered by State Routes (SR-) 52 and 125 and Mission Trails Regional Park to the west (Figure 3). The project consists of approximately two miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in the City of Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.

STUDY AREA DESCRIPTION

The San Diego River flows from east to west through the approximately 30.47-acre survey area. The western two-thirds of the survey area is bordered by the Carlton Oaks Country Club golf course to the north, and SR-52 to the south, which ranges from approximately 370 feet away to directly adjacent to the survey area. East of Carlton Hills Boulevard the survey area is surrounded by Mast Park. Between Carlton Hills Boulevard and the golf course, the San Diego River is bordered by approximately 1,000 feet of riparian scrub, some of which burned in 2014. Elevation on site ranges from approximately 90 to 110 meters (300 to 360 feet) above mean sea level (amsl).

Six soil series made up of nine soil units are mapped within the study area (USDA 2016; Table 1). The Grangeville series consists of very deep, somewhat poorly drained fine sandy loams that formed from granitic alluvium; they are found on alluvial fans and floodplains. Soils in the Redding series consist of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. They occur in old mixed cobbly and gravelly alluvium. Riverwash soil material is typically sandy, gravelly or cobbly and is excessively drained and permeable. Soils in the Salinas series consist of well-drained clay loams that formed in sediments washed from a variety of other soil series. They occur on flood plains and alluvial fans. Soils in the Tujunga series are deep and well drained, formed in alluvium from granitic sources. They occur on alluvial fans, floodplains, and urban areas. Soils in the Visalia series consist of well drained, very deep sandy loams derived from granitic alluvium. They occur on alluvial fans and flood plains (Bowman 1973).

Table 1
MAPPED SOILS IN THE STUDY AREA*

SOIL SERIES	SOIL UNIT
Grangeville	Grangeville fine sandy loam, 0 to 2 percent slopes
Redding	Redding cobbly loam, 9 to 30 percent slopes
	Redding-Urban land complex, 2 to 9 percent slopes
	Redding Urban land complex, 9 to 30 percent slopes
Riverwash	Riverwash
Salinas	Salinas clay loam, 0 to 2 percent slopes
Tujunga	Tujunga sand, 0 to 5 percent slopes
Visalia	Visalia gravelly sandy loam, 2 to 5 percent slopes
	Visalia gravelly sandy loam, 5 to 9 percent slopes

*USDA 2016

METHODS

The purpose of the rare plant surveys was to document the presence, abundance, and sensitivity status of rare plants within the study area. The surveys were conducted by HELIX biologists on May 23 and June 24, 2016 (Table 2). Rare plants investigated included those that are federally or state listed, and species that are considered special by the California Department of Fish and Wildlife

(CDFW) California Natural Diversity Database (CNDDB). A previous alignment study (KTU+A, 2015) was reviewed prior to this survey. Previously mapped biological resources from this study were used as a baseline for the updated 2016 HELIX vegetation mapping.

Table 2
RARE PLANT SURVEY INFORMATION

DATE	PERSONNEL
May 23, 2016	Talaya Rachels, Hannah Sadowski
June 24, 2016	Talaya Rachels

Prior to conducting the surveys, HELIX conducted a preliminary review of the U.S. Fish and Wildlife Service (USFWS), CNDDB, California Native Plant Society (CNPS), City of San Diego Multiple Species Conservation Plan (MSCP), and CALFLORA databases for special status (i.e., sensitive) plant species that have potential to occur on site.

The study area was traversed on foot and all accessible habitat areas were inspected for the presence of rare plant species. All parcels within the study area were accessible. When encountered, sensitive plants were counted and mapped using handheld Geographic Positioning System devices. Plants were identified according to The Jepson Manual: Vascular Plants of California (Baldwin, et.al. 2012); Rebman and Simpson (2014) was used to update plant nomenclature.

VEGETATION COMMUNITIES

A total of 13 vegetation communities or land use types were mapped within the study area: freshwater marsh, disturbed wetland, southern riparian forest (including disturbed and burned), southern willow scrub, disturbed Diegan coastal sage scrub, broom baccharis dominated, flat-topped buckwheat scrub, mule fat scrub, non-native grassland, open water, ornamental, disturbed habitat, and developed lands (Table 3; Figures 4a through 4e). Vegetation communities were mapped according to Holland (1986), as modified by Oberbauer (2008). Descriptions of vegetation communities and land uses found on site are provided below.

Table 3
EXISTING VEGETATION COMMUNITIES
IN THE STUDY AREA

VEGETATION COMMUNITY/HABITAT	ACREAGE*
Wetland/Riparian	
Southern riparian forest	27.87
Southern riparian forest - burned	1.02
Southern riparian forest - disturbed	0.14
Southern willow scrub	1.20
Mule fat scrub	0.24
Freshwater marsh	0.55
Disturbed wetland	0.18
Open water	0.59
Subtotal	**31.79**
Uplands	
Diegan coastal sage scrub - disturbed	0.1
Flat-topped buckwheat scrub	0.2
Broom baccharis dominated scrub	0.05
Non-native grassland	0.2
Ornamental	33.1
Disturbed habitat	14.4
Developed	5.7
Subtotal	**53.62**
TOTAL	**85.4**

*Upland habitats are rounded to the nearest 0.1 acre, while wetland habitats are rounded to the nearest 0.01; thus, totals reflect rounding.

Diegan Coastal Sage Scrub – Disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Dominant species found in the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), and broom baccharis (*Baccharis sarothroides*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native annual species.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a community of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and foothill areas of San Diego County. This species occurs at the western portion of the site along West Hills Parkway.

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species within the project site include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.).

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Within the project site this community is dominated by large-flowered water primrose (*Ludwigia grandiflora*).

Southern Riparian Forest (including disturbed and burned)

Southern riparian woodlands and forests are composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species on the project site include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), western cottonwood (*Populus fremontii*), box-elder (*Acer negundo*), and wild grape (*Vitis girdiana*). Disturbed southern riparian forest is composed of a higher percentage of non-native species while burned southern riparian forest was previously burned in past.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Southern willow scrub occurs in the central-eastern portion of the site and this habitat is dominated by arroyo willow, black willow, and sandbar willow (*Salix exigua*).

Broom Baccharis Dominated

Broom baccharis dominated scrub is an upland community recognized by resource agencies as a subtype of coastal sage scrub that develops under a variety of circumstances following Diegan coastal sage scrub disturbance. Broom baccharis scrub occurs in the northwestern portion of the site.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. Within the project site, this vegetation community is dominated by mule fat.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual, introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County. On the project site, dominant species include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*).

Open Water

Open water within the project area consists of man-made ponds located within the Carlton Oaks golf course and along the San Diego River.

Ornamental

Ornamental plantings within the project site consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Similar areas also occur within Mast Park.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. Within the project site this includes paved golf cart paths, buildings, and roads.

RESULTS

Of the 81 plant species that were documented during surveys to date, a total of four sensitive plant species were observed, none of which are state or federally listed. Sensitive plant species observed are as follows: Palmer's sagewort (*Artemisia palmeri*), southern California black walnut (*Juglans californica* var. *californica*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*), and San Diego marsh elder (*Iva hayesiana*). These species are listed in Table 4 and further discussed below, with their locations depicted on Figures 4a through 4e. A list of all plant species observed during surveys to date is included as Attachment A. San Diego marsh elder is considered a California Rare Plant Rank (CRPR) List 2B.2 species. List 2 species are considered rare, threatened or endangered in California, but more common elsewhere. The remaining sensitive species observed are considered CRPR List 4.2 species. List 4 represents a watch list for species of limited distribution; which require monitoring for changes in population status. The second portion of the status codes reflect that the species is considered moderately threatened in California (20 to 80 percent of occurrences are threatened).

Table 4
SENSITIVE PLANT SPECIES OBSERVED

SCIENTIFIC NAME	COMMON NAME
Artemisia palmeri	Palmer's sagewort
Juglans californica var. *californica*	Southern California black walnut
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush
Iva hayesiana	San Diego marsh elder

Palmer's sagewort (*Artemisia palmeri*)
Listing: --/--; CRPR List 4.2
Distribution: Coastal San Diego County; Baja California, Mexico
Habitat: Stream courses, often within coastal sage scrub and southern mixed chaparral
Status on site: A total of four individuals were observed in southern riparian scrub adjacent to the existing trail in the southern portion of the study area (Figures 4c and 4b).

Southern California black walnut (*Juglans californica* var. *californica*)
Listing: --/--; CRPR List 4.2; CA Endemic
Distribution: Los Angeles, Orange, Riverside, Santa Barbara, San Bernardino, San Diego, and Ventura counties
Habitat: This tree grows between 20 and 50 feet tall in open savannah, often in habitat best labeled walnut woodland. May be more tolerant of clay soils than most native trees and shrubs. Shows preference for deep alluvial soils with high water-retention capacity and tends to grow in creek beds, alluvial terraces, and north-facing slopes.
Status on site: A total of 28 individuals were documented in the study area (Figures 4a and 4b). This species occurs in the southeast portion of the study area as a grouping of trees and isolated individuals primarily within southern riparian forest, as well as several scattered individuals in open disturbed habitat along the existing trail.

Southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*)
Listing: --/--; CRPR List 4.2
Distribution: Los Angeles, San Bernardino, San Luis Obispo, Ventura, and San Diego counties; Baja California, Mexico
Habitat: Moist, saline, or alkaline soils in coastal salt marshes and riparian marshes
Status on site: Approximately 200 individuals were observed in southern riparian forest in the northeastern portion of the study area with scattered individuals observed in the southeast along the banks of the river (Figures 4e and 4c).

San Diego marsh elder (*Iva hayesiana*)
Listing: --/--; CRPR List 2B.2
Distribution: San Diego County; Baja California, Mexico
Habitat: Creeks of intermittent streambeds are preferred habitat for this low-growing, conspicuous shrub. Typically, the riparian canopy is open, allowing substantial sunlight to reach this marsh-elder. Sandy alluvial embankments with cobbles are frequently utilized.
Status on site: A total of 17 individuals were observed in southern riparian scrub adjacent to the existing trail in the southeastern portion of the study area (Figure 4c).

Please contact me or Tom Huffman at (619) 462-1515 if you have any questions.

Sincerely,

Talaya Rachels
Biologist

Enclosures:

Figure 1	Regional Location Map
Figure 2	Project Vicinity (USGS Topography)
Figure 3	Project Vicinity (Aerial Photograph)
Figures 4a-4e	Vegetation/Rare Plants
Attachment A	Plant Species Observed

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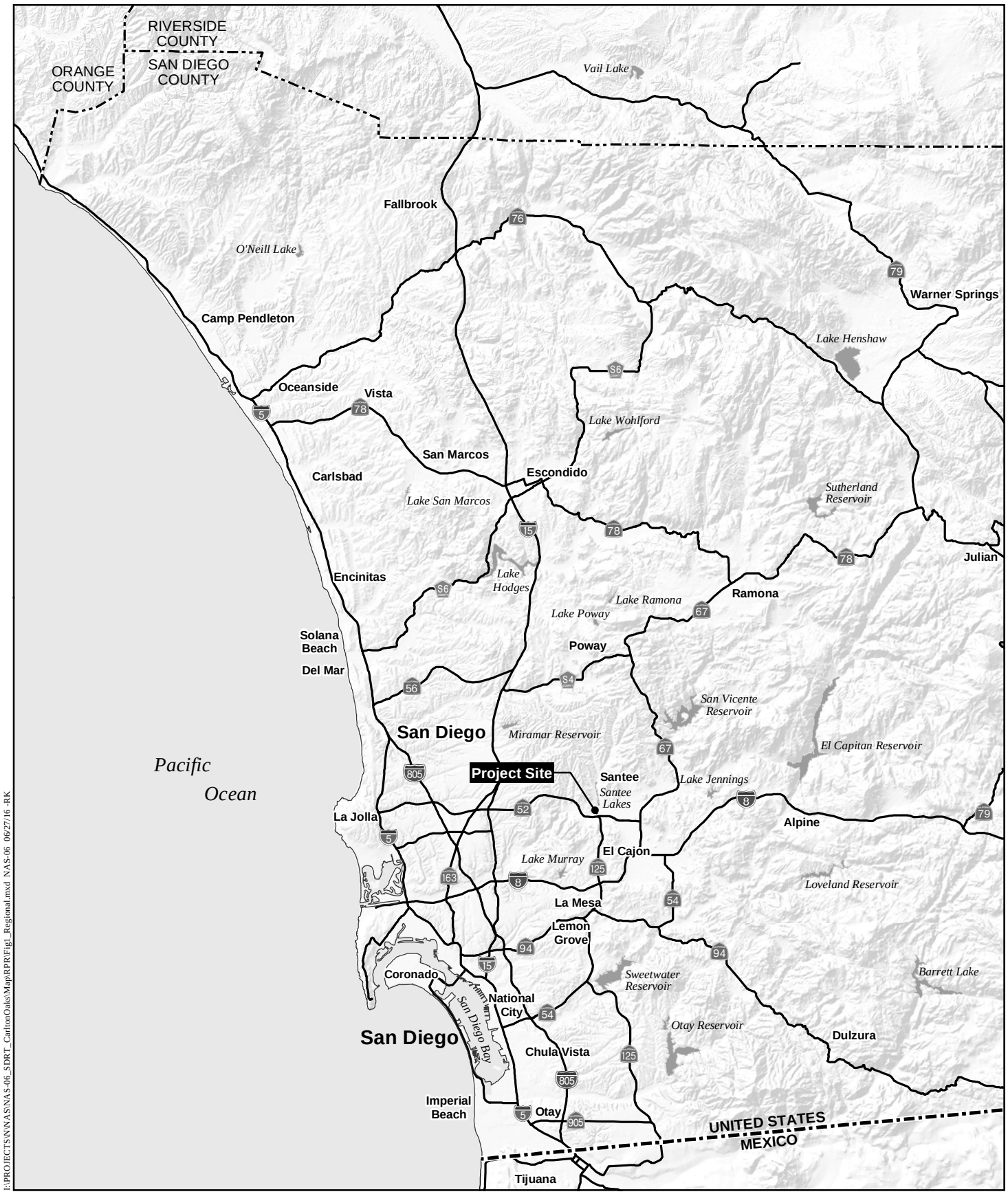
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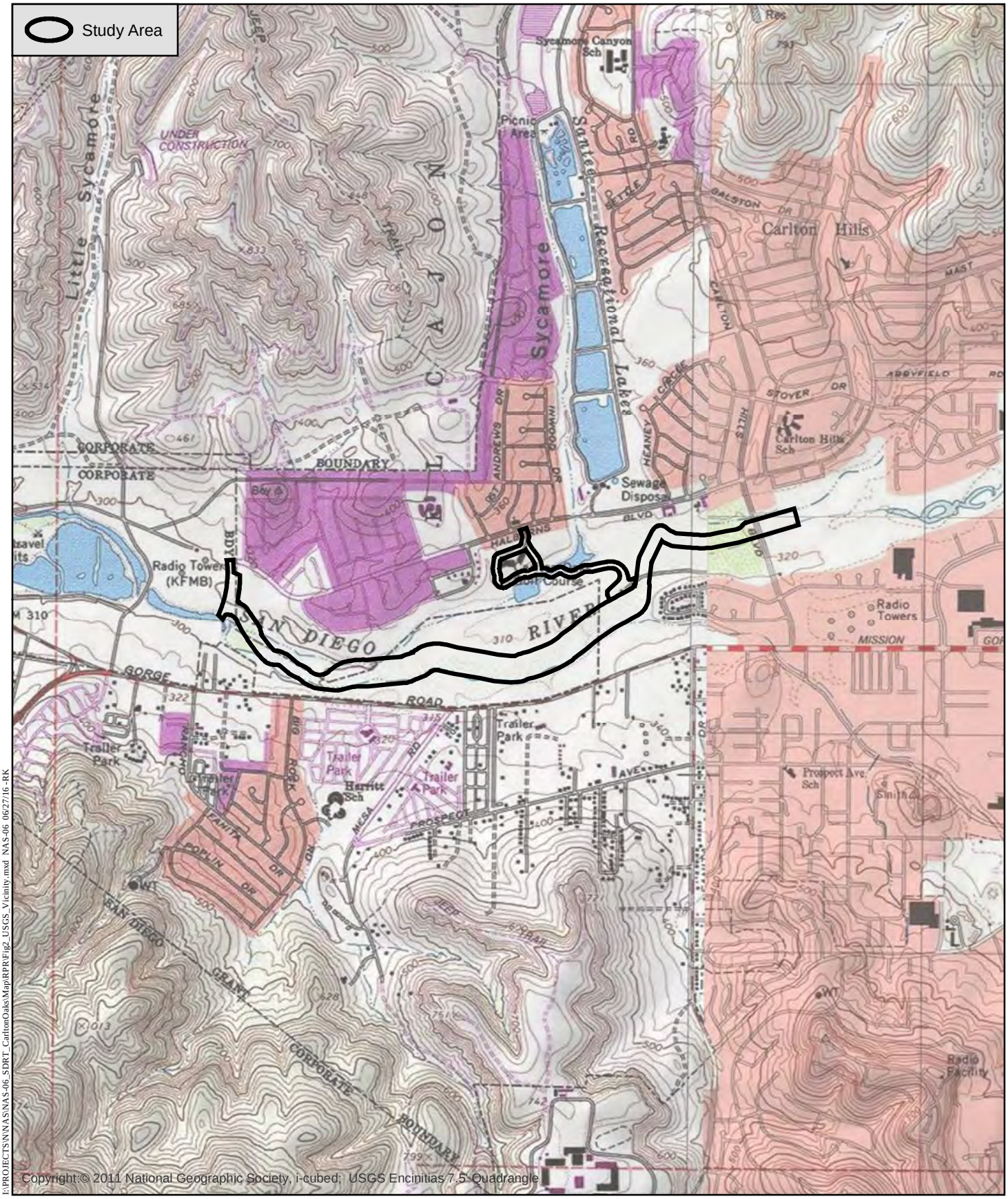
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



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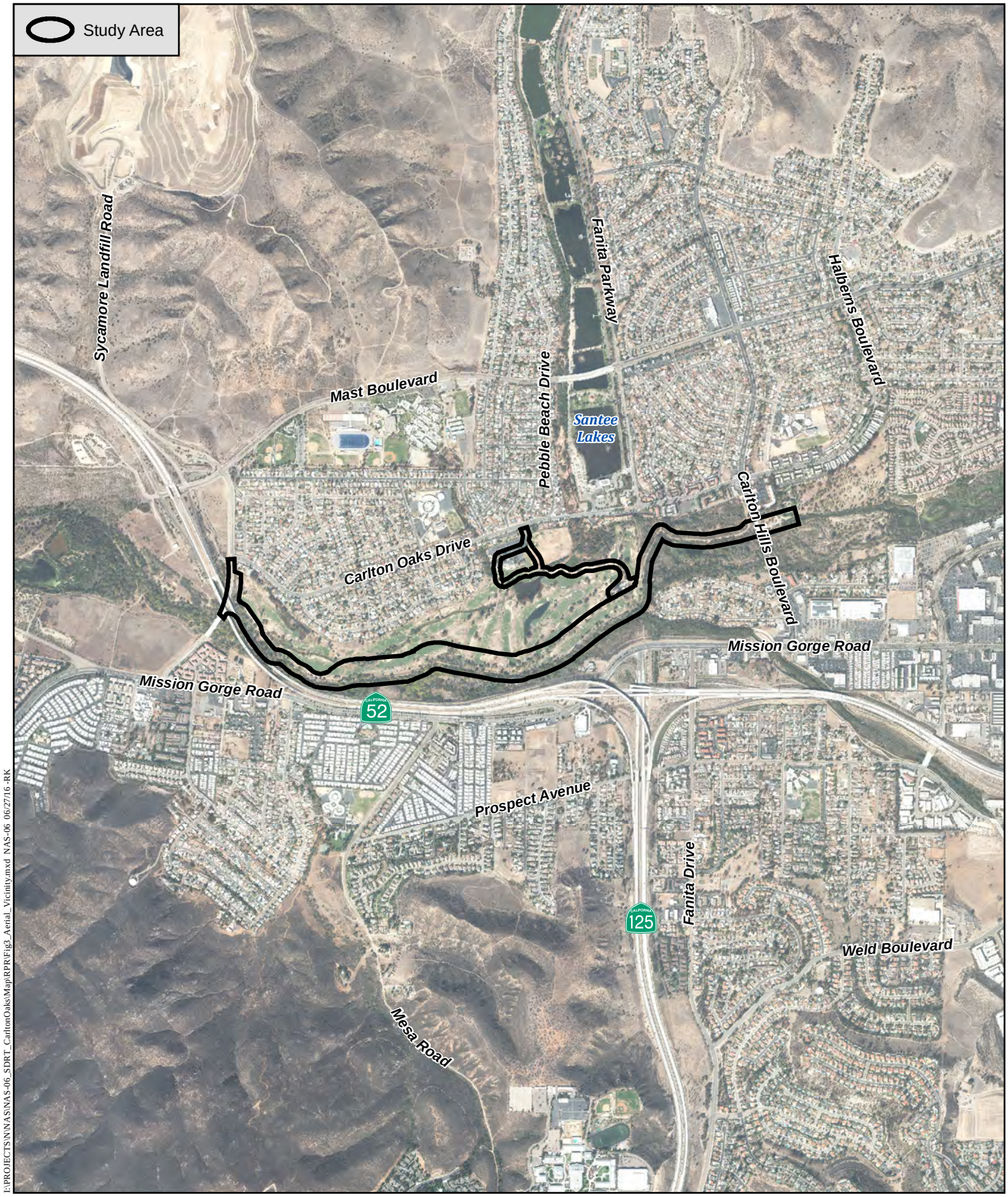
Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



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Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Disturbed Wetland
- Southern Riparian Forest
- Southern Willow Scrub
- Broom Baccharis Dominated
- Flat-Topped Buckwheat Scrub
- Ornamental
- Disturbed
- Developed
- Vegetation is below bridge

Rare Plants

- Jc California Black Walnut (*Juglans californica*)

West Hills Parkway

Carlton Oaks Drive

Inverness Road

Sycamore Creek

52

Jc (2)

Jc (2)

Jc (3) Jc (2)

Jc (3)

Jc Jc (3)

Jc (2)

a b c d e

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Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

0 200 Feet

Figure 4a

Inverness Road

Sycamore Creek

San Diego River

Jc
Jc (2)
Jc
Ap
Jc
Jc
Jc (3)

52
52

Mission Gorge Road

a
b
c
d
e

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Southern Riparian Forest
- Southern Willow Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Mule Fat Scrub
- Ornamental
- Disturbed
- Developed

Rare Plants

- Jc California Black Walnut (*Juglans californica*)
- Ap San Diego Sagewort (*Artemisia palmeri*)

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HELIX Environmental Planning

N 0 200 Feet

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

Figure 4b

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Southern Riparian Forest
- Ornamental
- Disturbed
- Developed

Rare Plants

- Ih San Diego Marsh-elder (*Iva hayesiana*)
- Ap San Diego Sagewort (*Artemisia palmeri*)
- Ja Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)

Ja
Ja
Ja
Ja (2)
Ih (4)
Ih (3)
Ih (3)
Ap
Ih (2)
Ih (2)
Ih (3)
Ap (2)
San Diego River
Forester Creek
Mission Gorge Road
52
52
125
a
b
c
d
e

Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4c

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Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Disturbed Wetland
- Southern Riparian Forest
- Southern Willow Scrub
- Burned Southern Riparian Forest
- Open Water
- Ornamental
- Disturbed
- Developed

Rare Plants

- Ja — Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)



Pebble Beach Drive

Carlton Oaks Drive

Inverness Road

Sycamore Creek

Ja

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Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4d

Study Area

Vegetation (Source: KTUA 2015 and HELIX 2016)

- Freshwater Marsh
- Southern Riparian Forest
- Southern Riparian Forest - Disturbed
- Southern Willow Scrub
- Diegan Coastal Sage Scrub - Disturbed
- Mule Fat Scrub
- Non-native Grassland
- Open Water
- Ornamental
- Disturbed
- Developed
- Vegetation is below bridge

Rare Plants

- Ja Southwestern Spiny Rush (*Juncus acutus* ssp. *leopoldii*)



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Vegetation and Rare Plants

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 200 Feet

Figure 4e

Attachment A
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species		
Adoxaceae	*Sambucus nigra* ssp. *caerulea*	blue elderberry
Anacardiaceae	*Malosma laurina*	laurel sumac
	Rhus integrifolia	lemonadeberry
Asteraceae	*Ambrosia psilostachya*	western ragweed
	Artemisia californica	California sagebrush
	Artemisia douglasiana	mugwort
	Artemisia palmeri†	San Diego sagewort†
	Baccharis pilularis	coyote brush
	Baccharis salicifolia	mule fat
	Baccharis sarothroides	broom baccharis
	Encelia californica	California encelia
	Erigeron canadensis	horseweed
	Helianthus annuus	western sunflower
	Heterotheca grandiflora	telegraph weed
	Isocoma menziesii	goldenbush
	Iva hayesiana†	San Diego marsh-elder†
	Pseudognaphalium sp.	everlasting
	Xanthium strumarium	cocklebur
Boraginaceae	*Heliotropium curassavicum* var. *occulatum*	salt heliotrope
Cactaceae	*Opuntia littoralis*	coastal prickly pear
Cucurbitaceae	*Cucurbita foetidissima*	calabazilla
	Marah macrocarpa	wild cucumber
Cyperaceae	*Scirpus* sp.	bulrush
Euphorbiaceae	*Croton californicus*	California croton
Fabaceae	*Acmispon americanus*	Spanish-clover
	Amorpha fruticosa	false indigo
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak
Juglandaceae	*Juglans californica* var. *californica*†	Southern California black walnut†
Juncaceae	*Juncus acutus* ssp. *leopoldii*†	southwestern spiny rush†
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow
Onagraceae	*Camissoniopsis* sp.	sun cup
	Epilobium ciliatum ssp. *ciliatum*	willow herb
	Oenothera elata ssp. *hookeri*	great marsh evening-primrose

Attachment A (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Native Species (cont.)		
Papaveraceae	*Eschscholzia californica*	California poppy
Platanaceae	*Platanus racemose*	western sycamore
Polygonaceae	*Eriogonum fasciculatum*	California buckwheat
Rosaceae	*Heteromeles arbutifolia*	toyon
	Rosa californica	California rose
Salicaceae	*Populus fremontii*	western cottonwood
	Salix exigua	narrow-leaved willow
	Salix lasiolepis	arroyo willow
Sapindaceae	*Acer negundo*	box-elder
Saururacaea	*Anemopsis californica*	yerba mansa
Solanaceae	*Datura wrightii*	jimson weed
Typhaceae	*Typha* sp.	cattail
Vitaceae	*Vitis girdiana*	desert wild grape
Non-native Species		
Aizoaceae	*Carpobrotus edulis*	hottentot-fig
Anacardiaceae	*Schinus terebinthifolius*	Brazilian pepper tree
Apiaceae	*Apium graveolens*	celery
	Foeniculum vulgare	fennel
Arecaceae	*Washingtonia robusta*	Mexican fan palm
Asparagaceae	*Asparagus asparagoides*	bridal creeper
Asteraceae	*Erigeron bonariensis*	flax-leaf fleabane
	Helminthotheca echioides	bristly ox-tongue
	Lactuca serriola	wild lettuce
	Sonchus oleraceus	common sow thistle
Brassicaceae	*Hirschfeldia incana*	short-pod mustard
	Raphanus sativus	wild radish
	Sisymbrium irio	London rocket
Chenopodiaceae	*Chenopodium album*	pigweed
	Salsola tragus	Russian thistle
Euphorbiaceae	*Euphorbia peplus*	petty spurge
	Ricinus communis	castor bean
Fabaceae	*Melilotus albus*	white sweet clover
Moraceae	*Ficus carica*	edible fig

Attachment A (cont.)
PLANT SPECIES OBSERVED

Family	Species Name	Common Name
Non-native Species (cont.)		
Oleaceae	*Fraxinus uhdei*	shamel ash
Onagraceae	*Ludwigia grandiflora*	large-flowered water primrose
Plantaginaceae	*Plantago major*	common plantain
Poaceae	*Avena* sp.	wild oat
	Bromus diandrus	common ripgut grass
	Bromus madritensis ssp. *rubens*	red brome
	Cortaderia jubata	pink pampasgrass
	Cynodon dactylon	Bermuda grass
	Paspalum dilatatum	dallis grass
	Pennisetum setaceum	purple fountain grass
	Stipa miliacea	smilo grass
Polygonaceae	*Rumex crispus*	curly dock
Solanaceae	*Nicotiana glauca*	tree tobacco
Tamaricaceae	*Tamarix* sp.	tamarisk
Tropaeolaceae	*Tropaeolum majus*	garden nasturtium

†Sensitive species

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Appendix H

2016 Coastal California Gnatcatcher Survey Report

HELIX Environmental Planning, Inc.
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Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 1, 2016 NAS-06

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

Subject: 2016 Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey of the federally listed as threatened coastal California gnatcatcher (*Polioptila californica californica*; CAGN) conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit TE778195-13.

PROJECT LOCATION

The project is located within the Cities of Santee and San Diego, California (Figure 1). The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 2). The project's study area is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues through the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park West. The southern boundary is bordered by State Routes 52 and 125 and Mission Trails Regional Park to the west (Figure 3). The project consists of approximately 2 miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in the City of Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.

METHODS

The survey consisted of six visits that were performed by HELIX biologists Jason Kurnow and Erica Harris (TE778195-13) in accordance with the current (1997) USFWS protocol. The project does not have an approved subarea plan under the Natural Communities Conservation Plan Act, therefore, the USFWS requires six protocol-level surveys be completed between March 15 and June 30 at least seven days apart. The surveys were conducted on foot with the aid of binoculars, and the route was arranged to ensure complete survey coverage of all potential CAGN habitat. Potential CAGN habitat consisted of 0.13 acre of disturbed Diegan coastal sage scrub and 0.16 acre of flat-topped buckwheat scrub. Taped CAGN vocalizations were played periodically in an attempt to elicit a response from CAGNs. Weather conditions, time of day, and season were appropriate for the detection of CAGNs (Table 1).

The surveys were conducted by walking along the edges of, as well as within, suitable CAGN habitat. The survey covered all habitat with potential for occupancy by CAGN. All surveys were conducted with binoculars to aid in bird detection. Recorded CAGN vocalizations were played sparingly and only if other means of detection had failed. The approximate survey route followed is depicted on Figure 4.

Table 1
COASTAL CALIFORNIA GNATCATCHER SURVEY INFORMATION

SITE VISIT	SURVEY DATE	BIOLOGIST	START/ STOP TIMES	APPROX. ACRES SURVEYED/ ACRES PER HOUR	START/STOP WEATHER CONDITIONS	SURVEY RESULTS
1	5/20/16	Erica Harris *Summer Schlageter	1030/ 1200	0.29 ac/ 0.19 ac/hr	68°F, wind, 2-5 mph, 15% cloud cover 73°F, wind, 2-4 mph, 5% cloud cover	No gnatcatchers detected
2	5/27/16	Erica Harris	0700/ 0715	0.29 ac/ 1.16 ac/hr	64°F, wind, 0-1 mph, 100% cloud cover 64°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
3	6/3/16	Erica Harris	0615/ 0630	0.29 ac/ 1.16 ac/hr	62°F, wind, 0-1 mph, 100% cloud cover 62°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
4	6/10/16	Jason Kurnow	0615/ 0630	0.29 ac/ 1.16 ac/hr	64°F, wind, 0-1 mph, 100% cloud cover 64°F, wind, 0-1 mph, 100% cloud cover	No gnatcatchers detected
5	6/17/16	Jason Kurnow	0630/ 0645	0.29 ac/ 1.16 ac/hr	63°F, wind, 2-4 mph, 0% cloud cover 63°F, wind, 2-4 mph, 0% cloud cover	No gnatcatchers detected
6	6/24/16	Erica Harris	0805/ 0820	0.29 ac/ 1.16 ac/hr	68°F, wind, 0-1 mph, 0% cloud cover 68°F, wind, 0-1 mph, 0% cloud cover	No gnatcatchers detected

*Supervised individual

VEGETATION COMMUNITIES/LAND USE TYPES

A total of thirteen vegetation communities or land use types were mapped within the study area: freshwater marsh, disturbed wetland, southern riparian forest (including disturbed and burned), southern willow scrub, disturbed Diegan coastal sage scrub, broom baccharis dominated, flat-topped buckwheat scrub, mule fat scrub, non-native grassland, open water, ornamental, disturbed habitat, and developed lands. Vegetation communities were mapped according to Holland (1986), as modified by Oberbauer (2008). Descriptions of vegetation communities and land uses found on site are provided below beginning with communities considered suitable CAGN habitat (disturbed Diegan coastal sage scrub and flat-topped buckwheat scrub).

Diegan Coastal Sage Scrub – Disturbed

Coastal sage scrub is one of the two major shrub types that occur in southern California, occupying xeric sites characterized by shallow soils (the other is chaparral). Four distinct coastal sage scrub geographical associations (northern, central, Venturan, and Diegan) are recognized along the California coast. Diegan coastal sage scrub may be dominated by a variety of species depending upon soil type, slope, and aspect. Dominant species found in the project site include California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Bacchris pilularis*), and broom baccharis (*Baccharis sarothroides*). Disturbed Diegan coastal sage scrub contains many of the same shrub species as undisturbed Diegan coastal sage scrub but is sparser and has a higher proportion of non-native annual species.

Flat-Topped Buckwheat Scrub

Flat-topped buckwheat scrub is a community of coastal sage scrub dominated by California buckwheat. This vegetation community is often found in disturbed areas in the coastal and foothill areas of San Diego County. This species occurs at the western portion of the site along West Hills Parkway.

Freshwater Marsh

Freshwater marsh is dominated by perennial, emergent monocots, 5 to 13 feet tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species within the project site include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.).

Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora. Within the project site this community is dominated by water primrose (*Ludwigia hexapetala*).

Southern Riparian Forest (including disturbed and burned)

Southern riparian woodlands and forests are composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species do overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species in the project site include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), Fremont's cottonwood (*Populus fremontii*), box-elder (*Acer negundo*), and wild grape (*Vitis girdiana*). Disturbed southern riparian forest is composed of a higher percentage of non-native species while burned southern riparian forest was previously burned in past.

Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Southern willow scrub occurs in the central-eastern portion of the site and this habitat is dominated by arroyo willow, black willow, and sandbar willow (*Salix exigua*).

Broom Baccharis Dominated

Broom baccharis dominated scrub is an upland community recognized by resource agencies as a subtype of coastal sage scrub that develops under a variety of circumstances following Diegan coastal sage scrub disturbance. Baccharis scrub occurs in the northwestern portion of the site and is dominated by broom baccharis.

Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table. In the project site, this vegetation community is dominated by mule fat.

Non-Native Grassland

Non-native grassland typically supports a sparse to dense cover of annual grasses often associated with numerous species of showy-flowered native annual forbs. This association occurs on gradual slopes with deep, fine-textured, usually clay soils. Most of the annual,

introduced species that make up the majority of species and biomass within the non-native grassland originated from the Mediterranean region, an area with a long history of agriculture and a climate similar to California. These grasslands are common throughout San Diego County. In the project site, dominant species include wild oats (*Avena* spp.), red brome (*Bromus madritensis* ssp. *rubens*), and western ragweed (*Ambrosia psilostachya*).

Open Water

Open water in the project area consists of man-made ponds located within the Carlton Oaks golf course and along the San Diego River.

Ornamental

Ornamental plantings in the project site consist of maintained portions of the golf course, including irrigated turf areas, sand traps, etc., and associated landscaping and scattered native and non-native trees within the maintained golf course areas. Also includes similar areas in Mast Park.

Disturbed Habitat

Disturbed habitat includes unvegetated or sparsely vegetated areas, particularly where the soil has been heavily compacted by prior development or where agricultural lands have been abandoned. Disturbed habitat is generally dominated by non-native weedy species that adapt to frequent disturbance, and may also consist of dirt trails and roads.

Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. In the project site this consists of paved golf cart paths, buildings, and roads.

RESULTS

No California gnatcatchers were detected during the survey.

CERTIFICATION

I certify that the information in this survey report and enclosed exhibit fully and accurately represent our work.

Sincerely,

Erica Harris
Biologist

Jason Kurnow
Senior Scientist

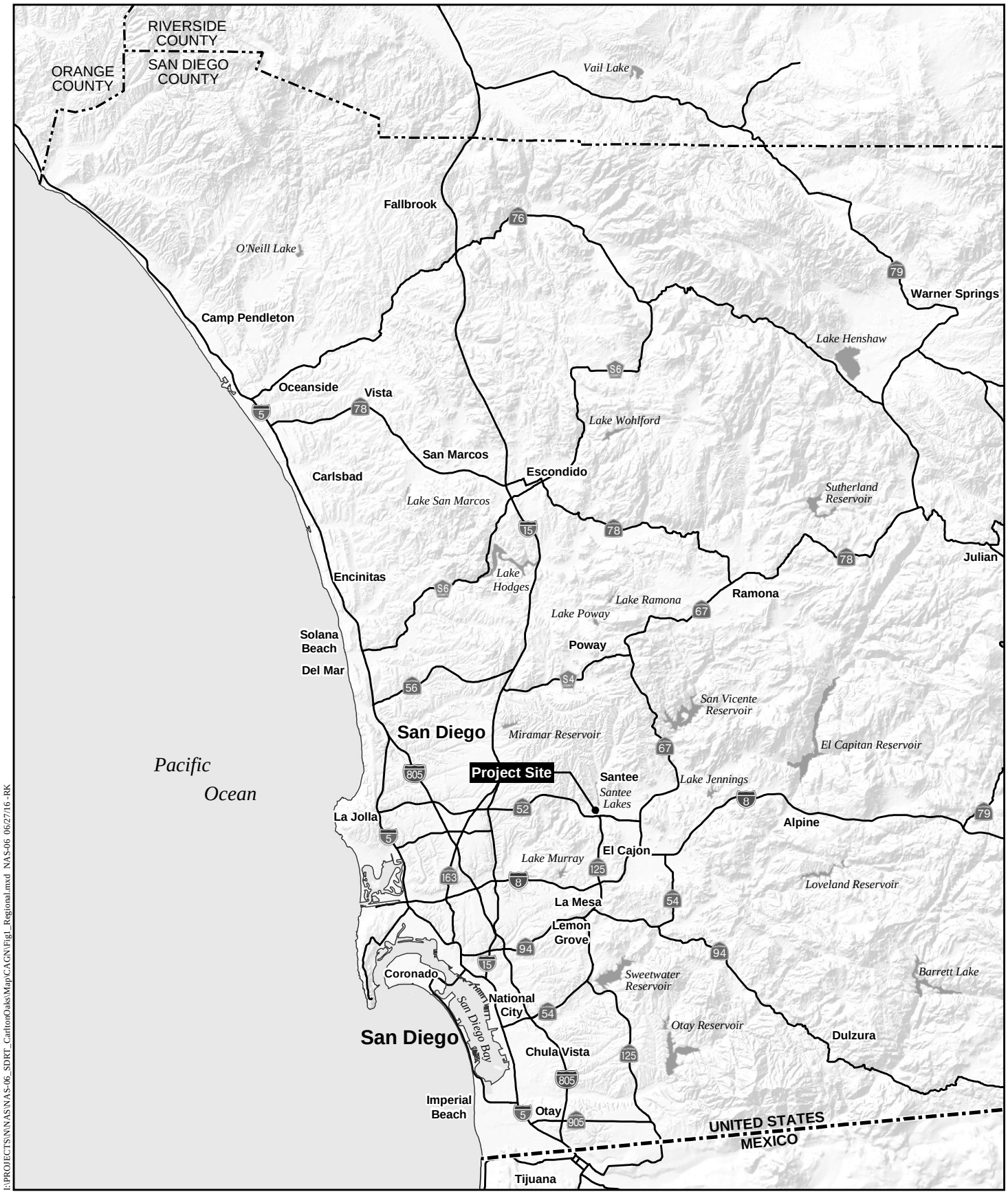
Enclosures:
Figure 1 Regional Location Map
Figure 2 Project Vicinity (USGS Topography)
Figure 3 Project Vicinity Map (Aerial Photograph)
Figure 4 Vegetation/Coastal California Gnatcatcher Survey Route

REFERENCES

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency, 156 pp.

Oberbauer, Thomas. 2008. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. Revised from 1996 and 2005. July.

U.S. Fish and Wildlife Service. 1997. Coastal California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Survey Protocol. 5pp.



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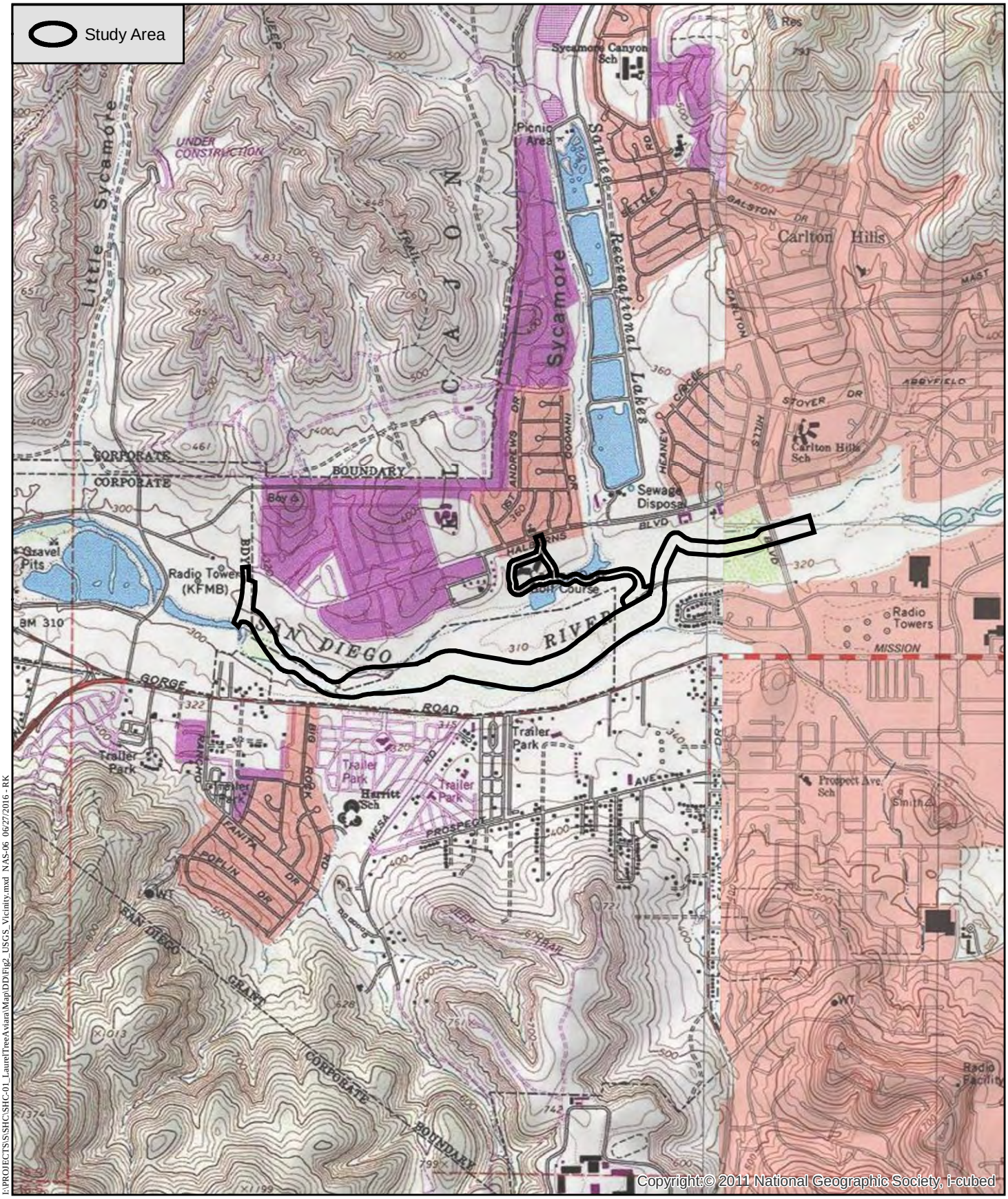
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



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Project Vicinity (USGS Topography)

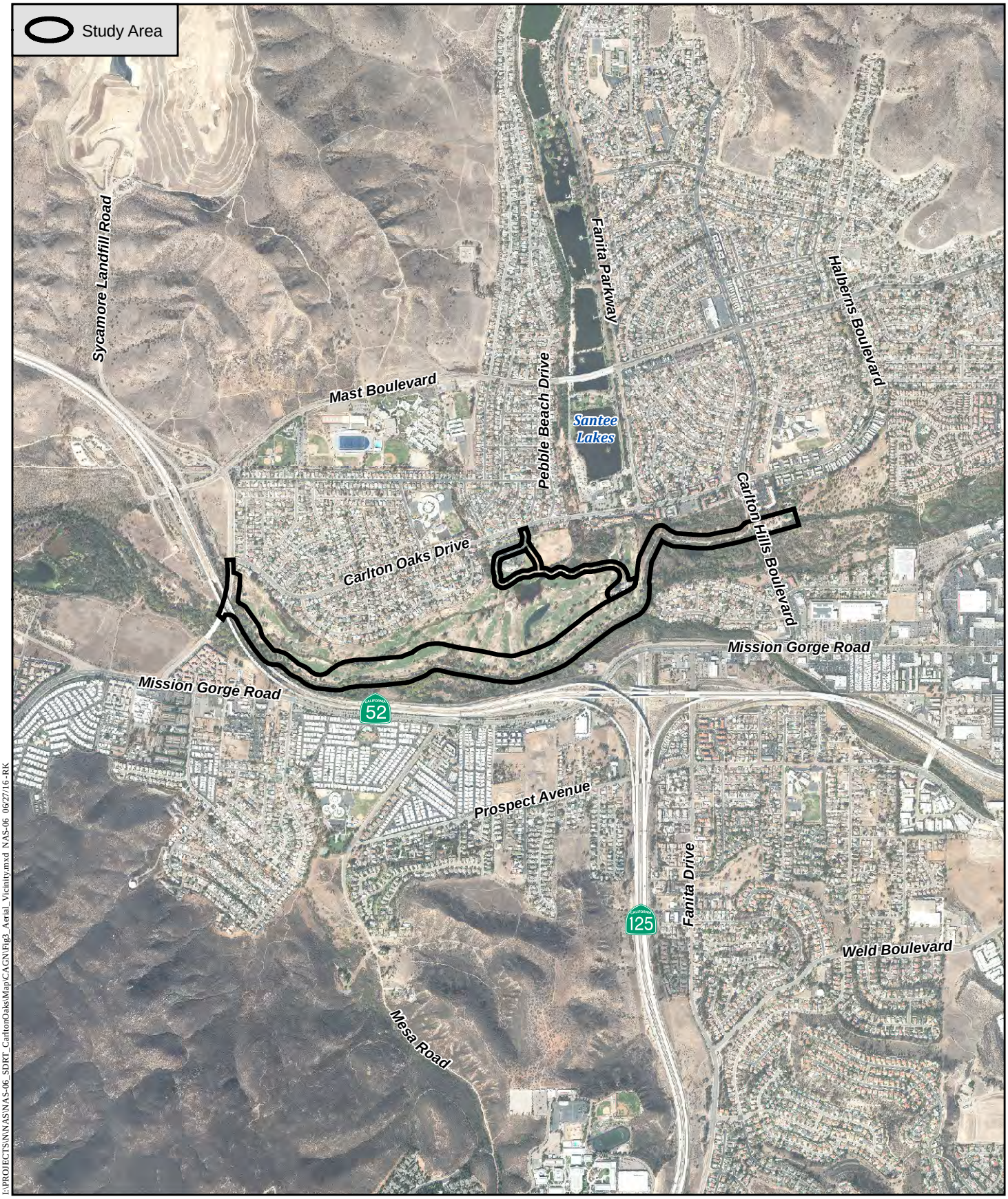
SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N

0 2,000 Feet

Figure 2



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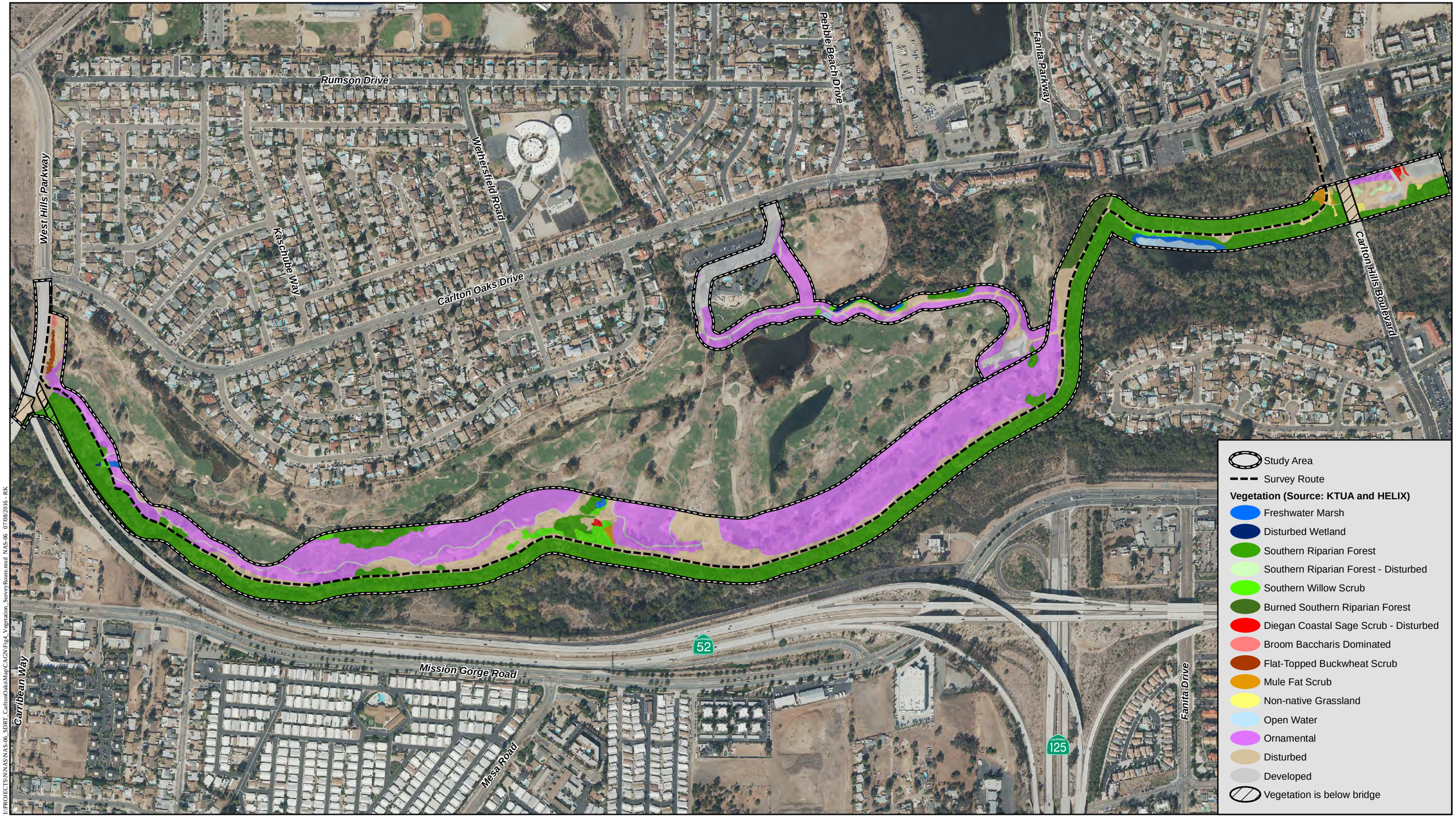
Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 3



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Vegetation/Coastal California Gnatcatcher (*Polioptila californica californica*) Survey Route

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 550 Feet

Figure 4

Appendix I

2016 Least Bell's Vireo Survey Report

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
Suite 200
La Mesa, CA 91942
619.462.1515 **tel**
619.462.0552 **fax**
www.**helixepi**.com

August 8, 2016 NAS-06

Ms. Stacey Love
U.S. Fish and Wildlife Service
2177 Salk Ave., Suite 250
Carlsbad, CA 92008

Subject: Year 2016 Least Bell's Vireo (*Vireo bellii pusillus*) Survey Report for the San Diego River Trail – Carlton Oaks Golf Course Segment Project

Dear Ms. Love:

This letter presents the results of a U.S. Fish and Wildlife Service (USFWS) protocol presence/absence survey for the least Bell's vireo (*Vireo bellii pusillus*; LBVI) conducted by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment Project (project). This report describes the methods used to perform the survey and the results. It is being submitted to the USFWS as a condition of HELIX's Threatened and Endangered Species Permit (TE778195-13).

PROJECT LOCATION

The approximately 30.47-acre survey area is located partially in the City of Santee on the eastern half of the project site and within the City of San Diego on the western half of the project site (Figures 1 and 2). The LBVI survey area encompasses riparian and wetland habitat along the San Diego River that occurs within 100 feet of the project impact limits (Figure 3). The proposed project impact area extends along the San Diego River from approximately 600 feet east of Carlton Hills Boulevard to where West Hills Parkway meets State Route (SR-) 52. Elevation on site ranges from approximately 90 to 110 meters (300 to 360 feet) above mean sea level (amsl). The San Diego River flows from east to west through the survey area. The western two-thirds of the survey area is bordered by the Carlton Oak Country Club golf course to the north, and SR-52 to the south, which ranges from approximately 370 feet away to directly adjacent to the survey area. East of Carlton Hills Boulevard the survey area is surrounded by Mast Park. Between

Carlton Hills Boulevard and the golf course, the San Diego River is bordered by approximately 1,000 feet of riparian scrub, some of which burned in 2014.

METHODS

Eight surveys were conducted by HELIX biologists Laura Moreton, Katie Bellon, Talaya Rachels, Benjamin Rosenbaum, and Summer Schlageter, according to the schedule in Table 1. The survey was conducted by walking along the edges of, as well as within, suitable LBVI habitat in the survey area while listening for LBVI and observing birds with the aid of binoculars. Suitable habitat for LBVI within the survey area comprises mule fat scrub, southern riparian forest, and southern willow scrub. Habitat within the project site not suitable for LBVI was not surveyed.

Table 1
LEAST BELL'S VIREO SURVEY INFORMATION

Site Visit	Date	Biologist	Time (start/stop)	Approximate Acres (ac) Covered*/ Survey Rate	Weather Conditions (start/stop)
1	5/4/16	Laura Moreton, Lara Barrett	0800/1100	30.47/ 10.16 ac/hr	61ºF, wind 0-1 mph, 100% clouds 66ºF, wind 1-2 mph, 20% clouds
2	5/16/16	Katie Bellon, Talaya Rachels	0830/1120	30.47/ 10.75 ac/hr	58ºF, wind 3-4 mph, 100% clouds 63ºF, wind 6-7 mph, 100% clouds
3	5/26/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	54ºF, wind 0 mph, 100% clouds 66ºF, wind 0 mph, 95% clouds
4	6/6/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	64ºF, wind 2-4 mph, 100% clouds 74ºF, wind 1-2 mph, 15% clouds
5	6/16/16	Laura Moreton	0630/1100	30.47/ 6.77 ac/hr	52ºF, wind 0 mph, 0% clouds 75ºF, wind 0-1 mph, 0% clouds
6	6/27/16	Benjamin Rosenbaum	0515/0925	30.47/ 7.31 ac/hr	66ºF, wind 0-2 mph, 50% clouds 75ºF, wind 0-2 mph, 5% clouds
7	7/7/16	Summer Schlageter	0510/0918	30.47/ 7.37 ac/hr	64ºF, wind 0-1 mph, 100% clouds 73ºF, wind 0 mph, 5% clouds
8	7/18/16	Laura Moreton	0805/1100	30.47/ 10.45 ac/hr	66ºF, wind 1-2 mph, 10% clouds 81ºF, wind 1-2 mph, 0% clouds

*Includes time for travel between habitat patches

RESULTS

There were 10 LBVI detections at 5 discreet locations during the survey effort (Figure 3). No LBVI were detected during the first or second surveys. During the third survey on May 26, 2016, two males were heard singing at the western end of the project site near the SR-52 overpass.

During the fourth survey on June 6, 2016, two males were heard singing in the same area. During the fifth survey on June 16, 2016, the two males were heard singing, in the same location, at the west end of the project area. One of the males was observed and noted to be unbanded. During the fifth survey, an additional male was heard singing approximately 50 feet south of the survey area, north of the intersection of Mission Gorge Road and SR-52. During the sixth survey on June 27, 2016, only one male at the western end of the project site was heard singing. Another LBVI was detected during this survey approximately 100 feet to the west of the survey area and 300 feet south of the intersection of Fanita Parkway and Carlton Oaks Drive. During the seventh survey on July 7, 2016, no LBVI were observed or otherwise detected. During the eighth survey on July 18, 2016, a male LBVI was heard singing in the eastern portion of the survey area, approximately 450 feet east of the golf course.

Special status species were detected during the surveys and included Cooper's hawk (*Accipiter cooperii*), white-tailed kite (*Elanus leucurus*), yellow-breasted chat (*Icteria virens*), and yellow warbler (*Setophaga petechia*). Brown-headed cowbird (*Molothrus ater*) was detected during all surveys except for the initial survey. A list of animal species observed or detected is included in Attachment A.

CERTIFICATION

I certify that the information in this survey report and enclosed exhibit fully and accurately represents our work.

Please contact Laura Moreton at (619) 462-1515 if you have any questions concerning the survey effort or this report.

Sincerely,

Laura Moreton
Biologist

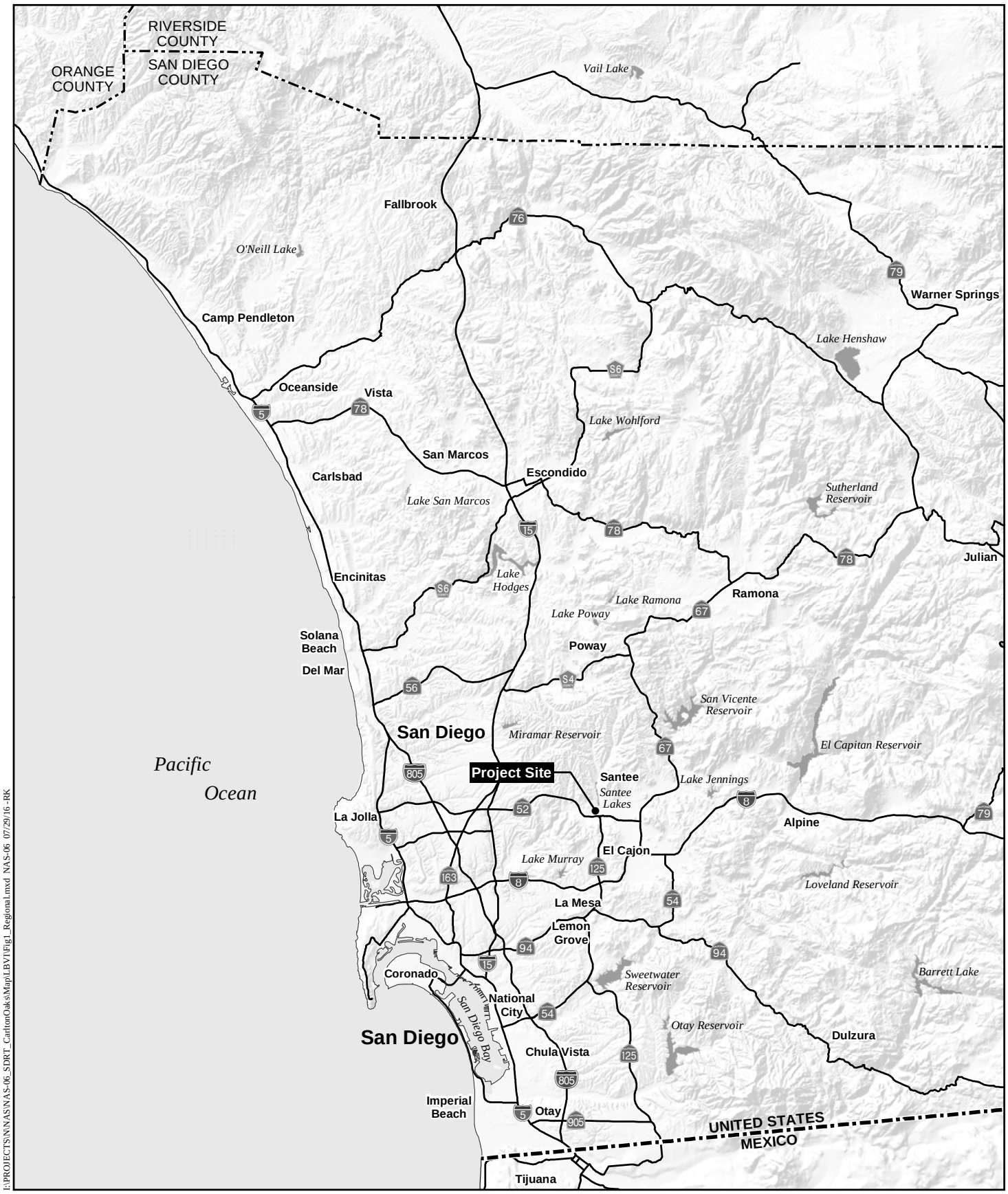
Ben Rosenbaum
Biologist

Summer Schlageter
Biologist

Talaya Rachels
Biologist

Katie Bellon
Biologist

Enclosures:
Figure 1 Regional Location Map
Figure 2 Project Vicinity Map (Aerial Photograph)
Figure 3 Vegetation/Least Bell's Vireo Survey Results
Attachment A Animal Species Observed or Detected



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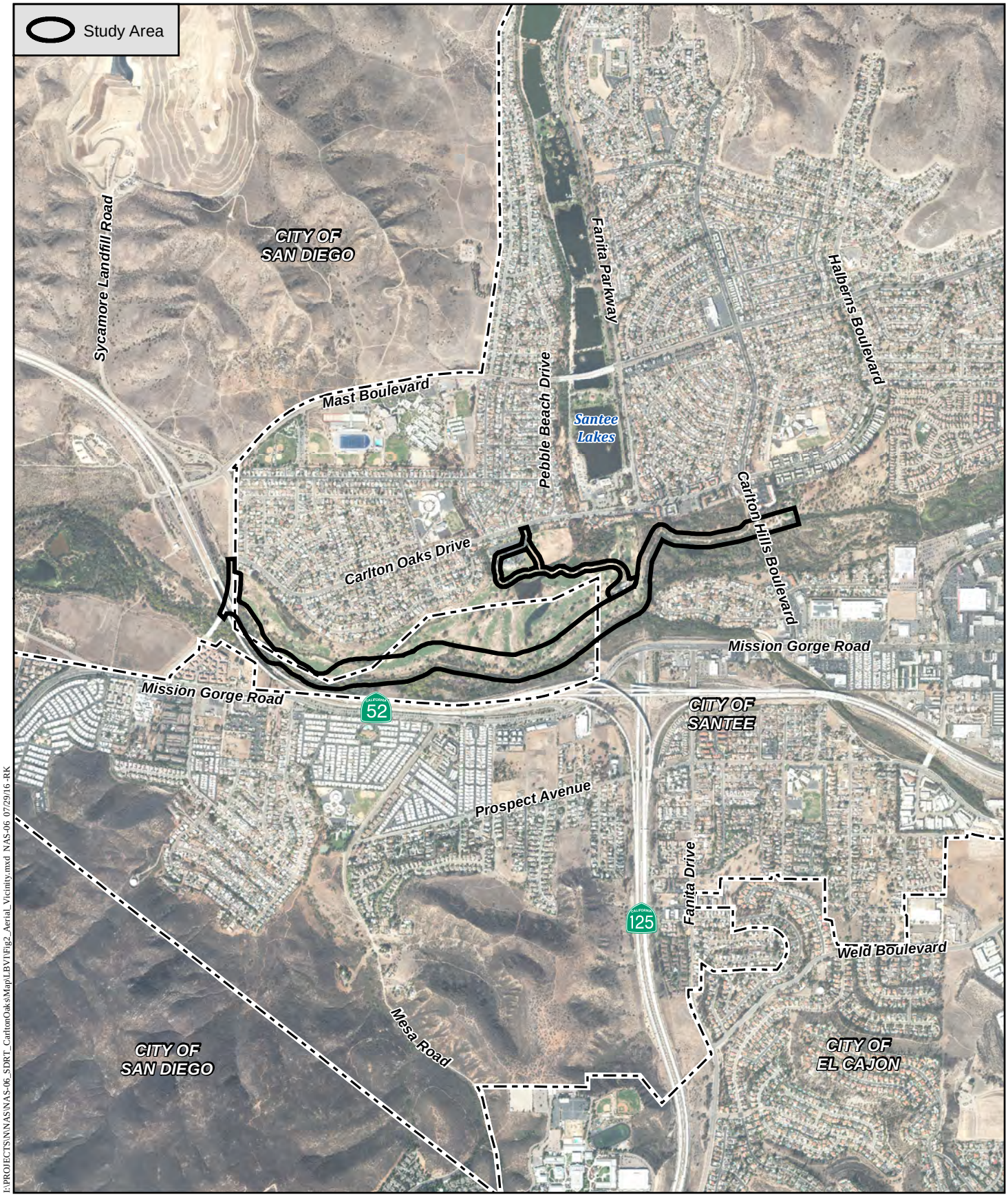
Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 8 Miles

Figure 1



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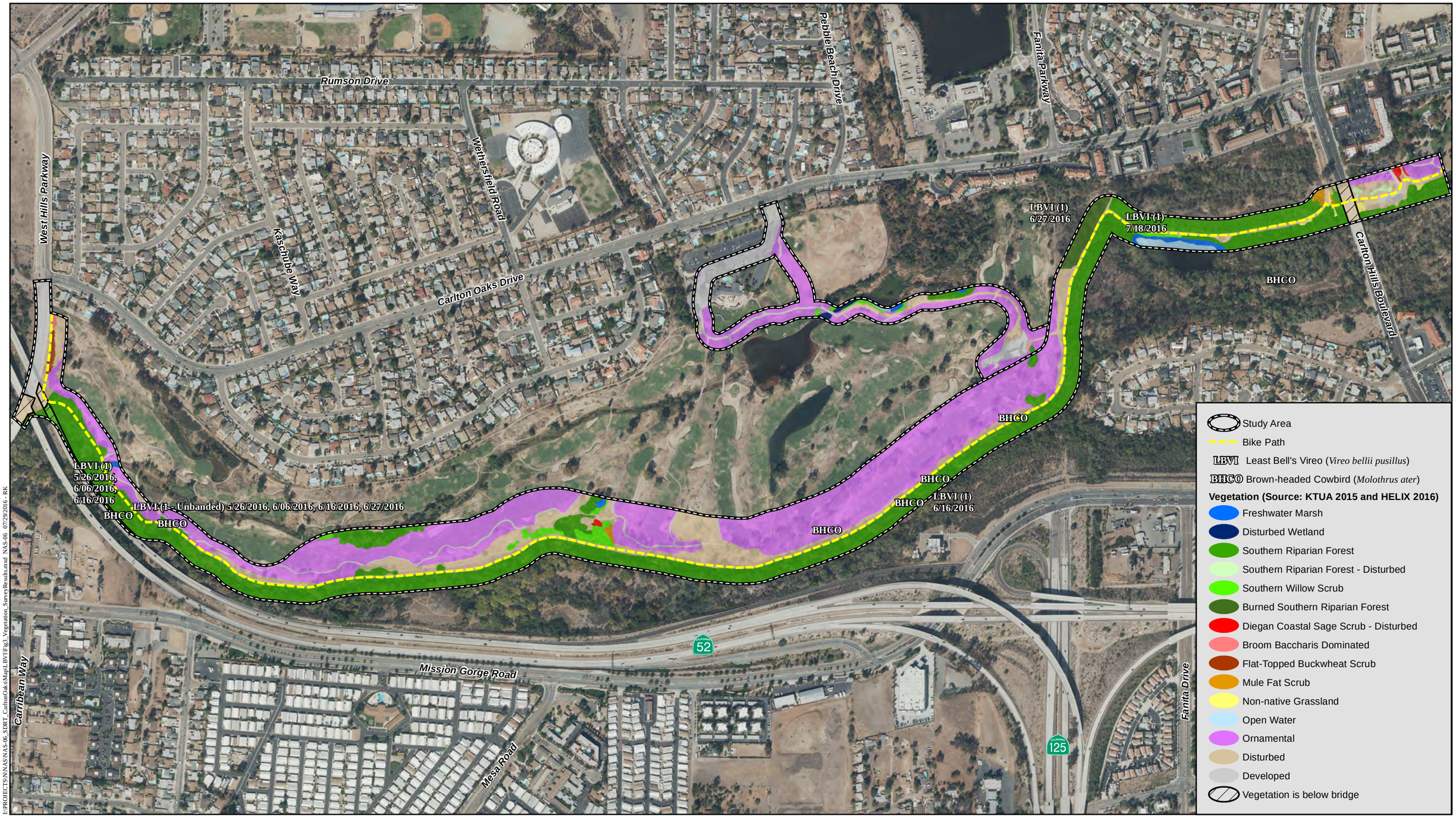
Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 2



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Vegetation/Least Bell's Vireo (*Vireo bellii pusillus*) Survey Results

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 550 Feet

Figure 3

Attachment A
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES			
Order	Family		
Lepidoptera	Lycaenidae	*Icaricia acmon acmon*	acmon blue
	Nymphalidae	*Nymphalis antiopa*	mourning cloak
	Pieridae	*Pontia sisymbrii*	spring white
		Papilio eurymedon	pale tiger swallowtail
VERTEBRATES			
Reptiles			
Order	Family		
Anura	Ranidae	*Lithobates catesbeianus*	American bullfrog
Birds			
Order	Family		
Accipitriformes	Accipitridae	*Accipiter cooperii†*	Cooper's hawk
		Buteo jamaicensis	red-tailed hawk
		Buteo lineatus	red-shouldered hawk
		Elanus leucurus†	white-tailed kite
Anseriformes	Anatidae	*Anas platyrhynchos*	mallard
		Aix sponsa	wood duck
Apodiformes	Apodidae	*Aeronautes saxatalis*	white-throated swift
	Trochilidae	*Calypte anna*	Anna’s hummingbird
Charadriiformes	Laridae	*Larus* sp.	gull
Columbiformes	Columbidae	*Columba livia*	rock pigeon
		Zenaida macroura	mourning dove
Passeriformes	Aegithalidae	*Psaltriparus minimus*	bushtit
	Bombycillidae	*Bombycilla cedrorum*	cedar waxwing
	Cardinalidae	*Pheucticus melanocephalus*	black-headed grosbeak
		Piranga ludoviciana	western tanager

Attachment A (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		**SCIENTIFIC NAME**	**COMMON NAME**
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Passeriformes	Corvidae	*Aphelocoma californica*	western scrub jay
		Corvus brachyrhynchos	American crow
		Corvus corax	common raven
	Emberizidae	*Melospiza melodia*	song sparrow
		Melozone crissalis	California towhee
		Pipilo maculatus	spotted towhee
	Estrildidae	*Lonchura punctulata*	scaly-breasted munia
	Fringillidae	*Haemorhous mexicanus*	house finch
		Spinus psaltria	lesser goldfinch
	Hirundinidae	*Petrochelidon pyrrhonota*	cliff swallow
		Stelgidopteryx serripennis	northern rough-winged swallow
		Tachycineta bicolor	tree swallow
	Icteridae	*Agelaius phoeniceus*	red-winged blackbird
		Icterus cucullatus	hooded oriole
		Molothrus ater	brown-headed cowbird
	Parulidae	*Geothlypis trichas*	common yellowthroat
		Icteria virens†	yellow-breasted chat
		Setophaga petechia†	yellow warbler
	Sittidae	*Sitta carolinensis*	white-breasted nuthatch
	Sturnidae	*Sturnus vulgaris*	European starling
	Sylviidae	*Chamaea fasciata*	wrentit
	Troglodytidae	*Thryomanes bewickii*	Bewick’s wren
		Troglodytes aedon	house wren
	Turdidae	*Sialia mexicana*	western bluebird
		Turdus migratorius	American robin
	Tyrannidae	*Empidonax difficilis*	pacific-slope flycatcher
		Myiarchus cinerascens	ash-throated flycatcher
		Sayornis nigricans	black phoebe
		Tyrannus vociferans	Cassin’s kingbird
	Vireonidae	*Vireo bellii pusillus†*	least Bell's vireo
Pelecaniformes	Ardeidae	*Ardea alba*	great egret
		Butorides virescens	green heron

Attachment A (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

TAXON		SCIENTIFIC NAME	COMMON NAME
VERTEBRATES (cont.)			
Birds (cont.)			
Order	Family		
Piciformes	Picidae	*Picoides nuttallii*	Nuttall's woodpecker
Suliformes	Phalacrocoracidae	*Phalacrocorax auritus*	double-crested cormorant
Mammals			
Order	Family		
Artiodactyla	Cervidae	*Odocoileus hemionus*	mule deer
Carnivora	Procyonidae	*Procyon lotor*	raccoon
Lagomorpha	Leporidae	*Sylvilagus audubonii*	desert cottontail
Rodentia	Sciuridae	*Spermophilus beecheyi*	California ground squirrel

†Special Status Species

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Appendix J

2016 Southwestern Willow Flycatcher Survey Report

Bonnie Peterson, Biologist
11910 Walnut Road, Lakeside, CA 92040
Tel: 619-316-2394
e-mail: bonniepeterson@cox.net

August 1, 2016

Ms. Stacey Love
Recovery Permit Coordinator
U.S. Fish and Wildlife Service – Carlsbad Fish and Wildlife Office
2177 Salk Ave, Suite 250
Carlsbad, CA 92008

Re: 45-day Letter Report for Southwestern Willow Flycatcher Protocol Surveys for the San Diego River Trail – Carlton Oaks Golf Course Segment Project, Located in the Cities of Santee and San Diego, San Diego County, California.

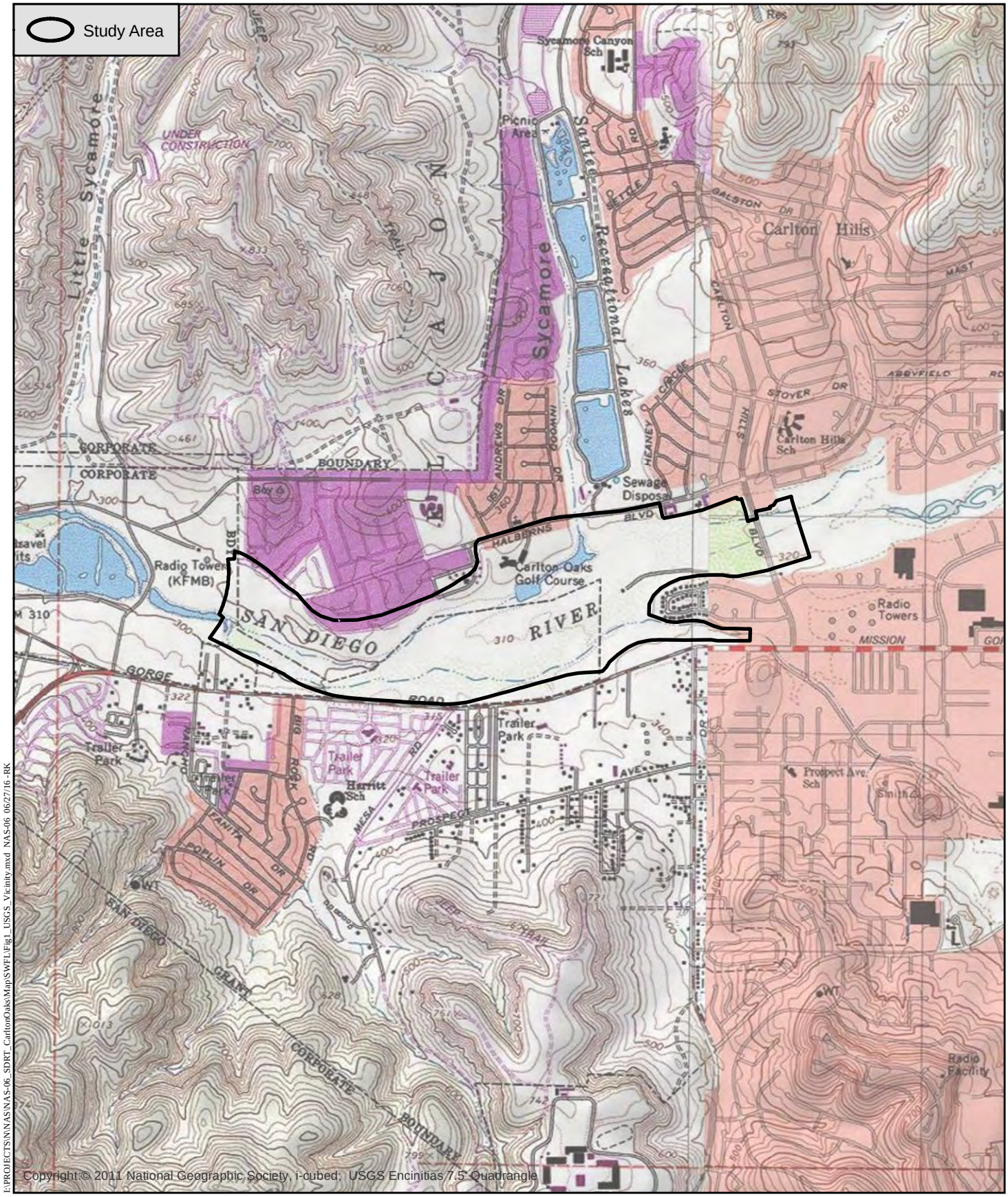
Ms. Love;

Bonnie Peterson conducted protocol surveys for the federally- and state-listed, endangered southwestern willow flycatcher (*Empidonax traillii extimus*) on the San Diego River Trail – Carlton Oaks Golf Course Segment, as authorized under Ms. Peterson's United States Fish and Wildlife Service (USFWS) Endangered Species Act, Section 10(a)(1)(A) permit #TE038701-2 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). These surveys were conducted in accordance with the current U.S. Fish and Wildlife Service's *Southwestern Willow Flycatcher Survey Protocol* (USGS 2010). The project site contains 3.3 linear kilometers of potential flycatcher habitat. No southwestern willow flycatchers were detected on the project site during the surveys. This letter report has been prepared and submitted to Helix Environmental Planning Inc., USFWS, and CDFW in accordance with the requirements of my 10(a) permit and MOU.

INTRODUCTION

Bonnie Peterson conducted protocol surveys for the federally- and state-listed endangered southwestern willow flycatcher (*Empidonax traillii extimus*) for the purpose of determining the presence or absence of this species along the San Diego River Trail – Carlton Oaks Golf Course Segment project site.

The project study area extends from the intersection of West Hills Parkway and Carlton Oaks Drive on the west through the Carlton Oaks Golf Course to just east of Carleton Hills Boulevard (Figure 1). The project lies within the Cities of Santee and San Diego. The southern boundary is bordered by State Route 52 and urban development. Mission Trails Regional Park is located to the west. Urban development occurs on the north and east. The project consists of approximately 2 miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway.



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Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 2,000 Feet

Figure 1

METHODS

Ms. Peterson conducted protocol surveys for the southwestern willow flycatcher in accordance with the current U.S. Fish and Wildlife Service's (USFWS) *Southwestern Willow Flycatcher Protocol Revision* (USGS 2010), as authorized under federal Endangered Species Act (ESA), Section 10(a)(1)(A) permit #TE038701-2 and California Department of Fish and Wildlife (CDFW) Memorandum of Understanding (MOU). All surveys and conditions are recorded in Table 1. The survey area included approximately 3.3 linear kilometers/115 acres of potentially suitable habitat.

Table 1. Survey Dates, Times, Conditions

Survey #	Date	Time	Conditions[1] (start-end)	Biologist	Survey Acres per Hour/Day
1	2016 May 26	0520-1050	Weather: 100%-95% cc Wind: 0-1 BS Temperature: 52°-66°F	Bonnie Peterson	21 per hour/ 115 per day
2	2016 Jun 6	0520-1100	Weather: 100%-20% cc Wind: 1 BS Temperature: 61°-72°F	Bonnie Peterson	21 per hour/ 115 per day
3	2016 Jun 16	0520-1000	Weather: 10%-0% cc Wind: 1-0 BS Temperature: 59°-70°F	Bonnie Peterson	24 per hour/ 115 per day
4	2016 Jun 27	0515-0935	Weather: 50%-10% cc Wind: 0 BS Temperature: 68°-85°F	Bonnie Peterson	27 per hour/ 115 per day
5	2016 Jul 7	0505-0920	Weather: 100%-5% cc Wind: 0-1 BS Temperature: 64°-73°F	Bonnie Peterson	27 per hour/ 115 per day

[1] cc=cloud cover; BS=Beaufort Scale; F = Fahrenheit

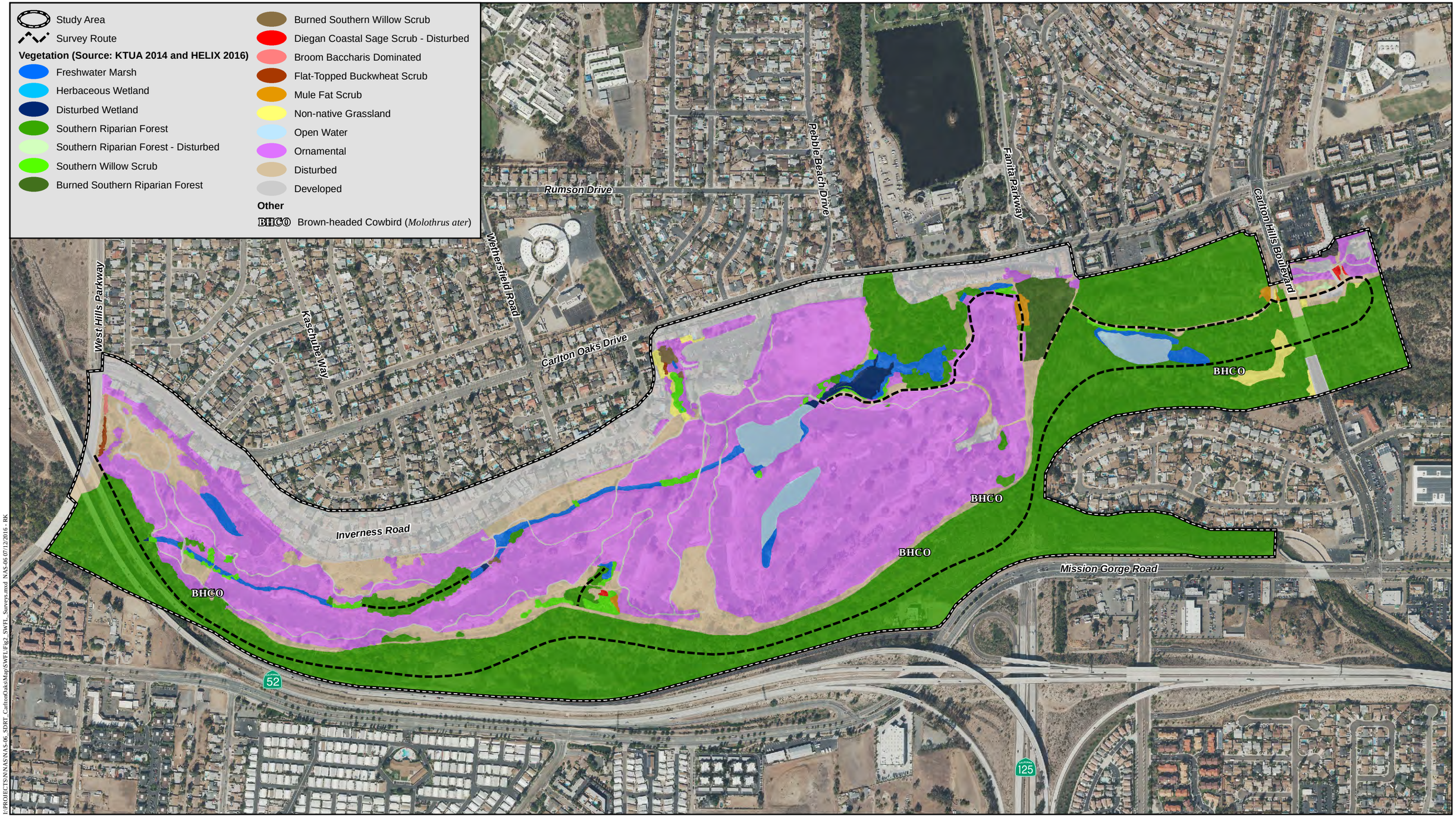
RESULTS

The habitat surveyed was primarily native riparian habitat with some non-native species interspersed. The dominant plant species included black willow (*Salix goodingii*), cottonwood (*Populus fremontii*), (*Acer nugundo*), and wild grape (*Vitis girdiana*). Water was present in the river throughout the entire series of surveys and is potentially present year round. The riparian habitat ranged in width from 50 meters to 300 meters. The overall habitat quality was good but varied from low to high quality along the entire survey area. The riparian habitat was home to many riparian avian species including yellow-breasted chat (*Icteria virens*), yellow warbler (*Setophaga petechia*), and least Bell's vireo (*Vireo bellii pusillus*). The brood parasite, brown-headed cowbird (*Molothrus ater*), was also present on site. The surrounding habitat was a golf course to the north and urban development including a freeway to the south.

No southwestern willow flycatcher were detected on the project site.

The survey area and survey routes for the southwestern willow flycatcher are shown in Figure 2.

The Willow Flycatcher Survey and Detection Form (Appendix 1) is also attached.



I:\PROJECTS\NN\NAS\NAS-06_SDRT_CarltonOaks\Maps\SWFLF\fig2_SWFL_Surveys.mxd NAS-06 07/12/2016 - RK

Southwestern Willow Flycatcher (*Empidonax traillii extimus*) Protocol Surveys

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

HELIX Environmental Planning

N 0 600 Feet

Figure 2

CONCLUSIONS

No other pertinent observations pertaining to the southwestern willow flycatcher were noted during the survey efforts. Due to the limited nature of the work on this project (i.e., protocol presence/absence surveys, not long-term research), no additional recommendations for species recovery can be made at this time.

If you have any questions concerning this project, please do not hesitate to contact me at (619) 316-2394 or bonniepeterson@cox.net.

Sincerely,



Bonnie Peterson
Permitted Biologist

cc: Ms. Esther Burkett, Senior Environmental Scientist (Specialist), California Department of Fish and Wildlife esther.burkett@wildlife.ca.gov

Ms. Nancy Frost, California Department of Fish and Wildlife, South Coast Region, nancy.frost@wildlife.ca.gov

Shana Rodriguez, Operations Manager, Helix Environmental Planning, Inc.,7578 El Cajon Blvd., La Mesa, CA 91942 ShanaR@helixepi.com

REFERENCES

U.S. Geological Survey (USGS) et al. 2010. A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher. 36 pp.

I hereby certify that the statements furnished herein and in the attached exhibits present the data and information as required pursuant to Recovery Permit TE038701-2, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

1) Fieldwork Performed By:



Bonnie Peterson, Permitted Biologist
10(a) Permit Number TE038701-2

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name SAN DIEGO RIVER TRAIL - CARLTON OAKS GOLF COURSE State CA County SAN DIEGO
USGS Quad Name LA MESA + EL CAJON Elevation 91.4 (meters)
Creek, River, Wetland, or Lake Name SAN DIEGO RIVER
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* ✓ *No* ___

Survey Coordinates: Start: E 497808.50m N 3633600.22m UTM Datum UTM (See instructions)
Stop: E 500408.38m N 3633959.80m UTM Zone 11S
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
*** Fill in additional site information on back of this page ****

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) BONNIE PETERSON	Date 5/26/2016 Start 0520 Stop 1050 Total hrs 5.5	0	0	0	N	COWBIRDS PRESENT ALONG SURVEY AREA				
Survey # 2 Observer(s) BONNIE PETERSON	Date 6/6/16 Start 0520 Stop 1100 Total hrs 5.6	0	0	0	N	"				
Survey # 3 Observer(s) BONNIE PETERSON	Date 6/16/16 Start 0520 Stop 1000 Total hrs 4.8	0	0	0	N	"				
Survey # 4 Observer(s) BONNIE PETERSON	Date 6/27/16 Start 0515 Stop 0935 Total hrs 4.3	0	0	0	N	"				
Survey # 5 Observer(s) BONNIE PETERSON	Date 7/07/16 Start 0505 Stop 0920 Total hrs 4.3	0	0	0	N	"				

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs	Total Adult Residents	Total Pairs	Total Territories	Total Nests	
	0	0	0	0	Were any Willow Flycatchers color-banded? ~~Yes~~ ~~No~~ If yes, report color combination(s) in the comments section on back of form and report to USFWS.

Reporting Individual BONNIE PETERSON Date Report Completed 7/11/16
US Fish and Wildlife Service Permit # TE 038701-2 State Wildlife Agency Permit # MOU
***Submit** form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.*

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual BONNIE PETERSON Phone # 619-316-2394
Affiliation HELIX ENVIRONMENTAL E-mail bonniepeterson@cox.net
Site Name SAN DIEGO RIVER TRAIL - CARLETON OAKS GOLF COURSE Date Report Completed _____

Did you verify that this site name is consistent with that used in previous years? Yes ____ No ✓ Not Applicable ___
If site name is different, what name(s) was used in the past? ~
If site was surveyed last year, did you survey the same general area this year? Yes ____ No ✓ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes ✓ No ____ If no, summarize below.

Management Authority for Survey Area : Federal____ Municipal/County ✓ State____ Tribal____ Private____
Name of Management Entity or Owner (e.g., Tonto National Forest) _____

Length of area surveyed: 3300 (meters)

Vegetation Characteristics: Mark the category that best describes the predominant tree/shrub foliar layer at this site (check one):

____ Native broadleaf plants (entirely or almost entirely, > 90% native, includes high-elevation willow)

✓ Mixed native and exotic plants (mostly native, 50 - 90% native)

____ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

____ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific name.
SALIX goodingii, Acer negundo, Populus fremontii

Average height of canopy (Do not include a range): 60' (meters)

Attach copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections.
Attach sketch or aerial photo showing site location, patch shape, survey route, location of any WIFLs or WIFL nests detected.
Attach photos of the interior of the patch, exterior of the patch, and overall site; describe any unique habitat features.

Comments (attach additional sheets if necessary)

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM N	UTM E	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

JURISDICTIONAL DELINEATION REPORT

for the

San Diego River Trail

Carlton Oaks Golf Course Segment Project

January 2017

Prepared for:

San Diego Association of Governments
401 B Street, Suite 800
San Diego, California 92101

Prepared by:

HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard
La Mesa, California 91942

San Diego River Trail – Carlton Oaks Golf Course Segment Project
Jurisdictional Delineation Report

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I. INTRODUCTION

This report presents the results of a jurisdictional delineation performed by HELIX Environmental Planning, Inc. (HELIX) for the San Diego Association of Governments (SANDAG) San Diego River Trail – Carlton Oaks Golf Course Segment project (project) located in San Diego County, California (Figure 1). The delineation was conducted to identify and map existing wetlands, habitats, and other resources potentially subject to the regulatory jurisdiction of the U.S. Army Corps of Engineers (USACE) pursuant to Section 404 of the Clean Water Act (CWA; 33 USC 1344), Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the CWA, and California Department of Fish and Wildlife (CDFW) pursuant to Sections 1600 et seq. of the California Fish and Game Code.

This report presents HELIX's best efforts to quantify the extent of potential USACE, RWQCB, and CDFW jurisdiction over wetlands, habitats, and other resources within the biological study area (BSA) using the current regulations, written policies, and guidance from the regulatory agencies. The USACE, RWQCB, and CDFW make the final determination of wetland and water resources within their jurisdiction.

A. PROJECT DESCRIPTION AND LOCATION

The proposed project is located within the cities of Santee and San Diego, California (Figure 1). The project's study area is situated at the intersection of West Hills Parkway and Carlton Oaks Drive on the west and continues through the Carlton Oaks Golf Course to the existing multi-use trail within the City of Santee's Mast Park, just east of Carlton Hills Boulevard (Figure 2). The southern boundary is bordered by State Routes 52 and 125, and by Mission Trails Regional Park to the west. The project is further located within the El Cajon land grant of the U.S. Geological Survey 7.5-minute La Mesa and El Cajon topographic quadrangles (Figure 3).

The proposed project consists of approximately two miles of a Class I bikeway from Mast Park at Carlton Hills Boulevard in the City of Santee, through Mast Park West, and along the edge of the Carlton Hills Golf Course to West Hills Parkway in the City of San Diego.

B. STUDY AREA DESCRIPTION

The 79.1-acre BSA consists of a linear corridor varying in width from approximately 100 feet (ft) to 400 ft along its approximately two-mile length from West Hills Parkway to Mast Park. The San Diego River flows from east to west through the BSA, and is bordered by the Carlton Oaks Golf Course along the western two-thirds of its length. Sycamore Creek flows through the golf course, and two short reaches of the creek occur within the BSA. Ornamental vegetation is the most prevalent habitat type in the BSA within the golf course, while riparian forest is dominant along the San Diego River (Figure 4).

General land use within the BSA includes the Carlton Oaks Golf Course, paved public roads, a dirt trail, a portion of Mast Park, and undeveloped lands along the San Diego River. General land uses adjacent to the BSA include residential and commercial development and roads.

Physical Conditions

Elevations within the BSA range from approximately 296 to 334 ft above mean sea level (amsl). Six soil types representing six soil series (Grangeville, Redding, Riverwash, Salinas, Tujunga, and Visalia) are mapped in the BSA (Natural Resources Conservation Service [NRCS] 2016; Table 1; Figure 5).

The Grangeville series consists of very deep, somewhat poorly drained fine sandy loams that formed from granitic alluvium; they are found on alluvial fans and floodplains. Soils in the Redding series consist of well-drained, undulating to steep gravelly loams that have a gravelly clay subsoil and a hardpan. They occur in old mixed cobbly and gravelly alluvium. Riverwash soil material is typically sandy, gravelly or cobbly and is excessively drained and permeable. Soils in the Salinas series consist of well-drained clay loams that formed in sediments washed from a variety of other soil series. They occur on flood plains and alluvial fans. Soils in the Tujunga series are deep and well drained, formed in alluvium from granitic sources. They occur on alluvial fans, floodplains, and urban areas. Soils in the Visalia series consist of well drained, very deep sandy loams derived from granitic alluvium. They occur on alluvial fans and flood plains (Bowman 1973).

Table 1
SOIL TYPES MAPPED IN THE BIOLOGICAL STUDY AREA[1]

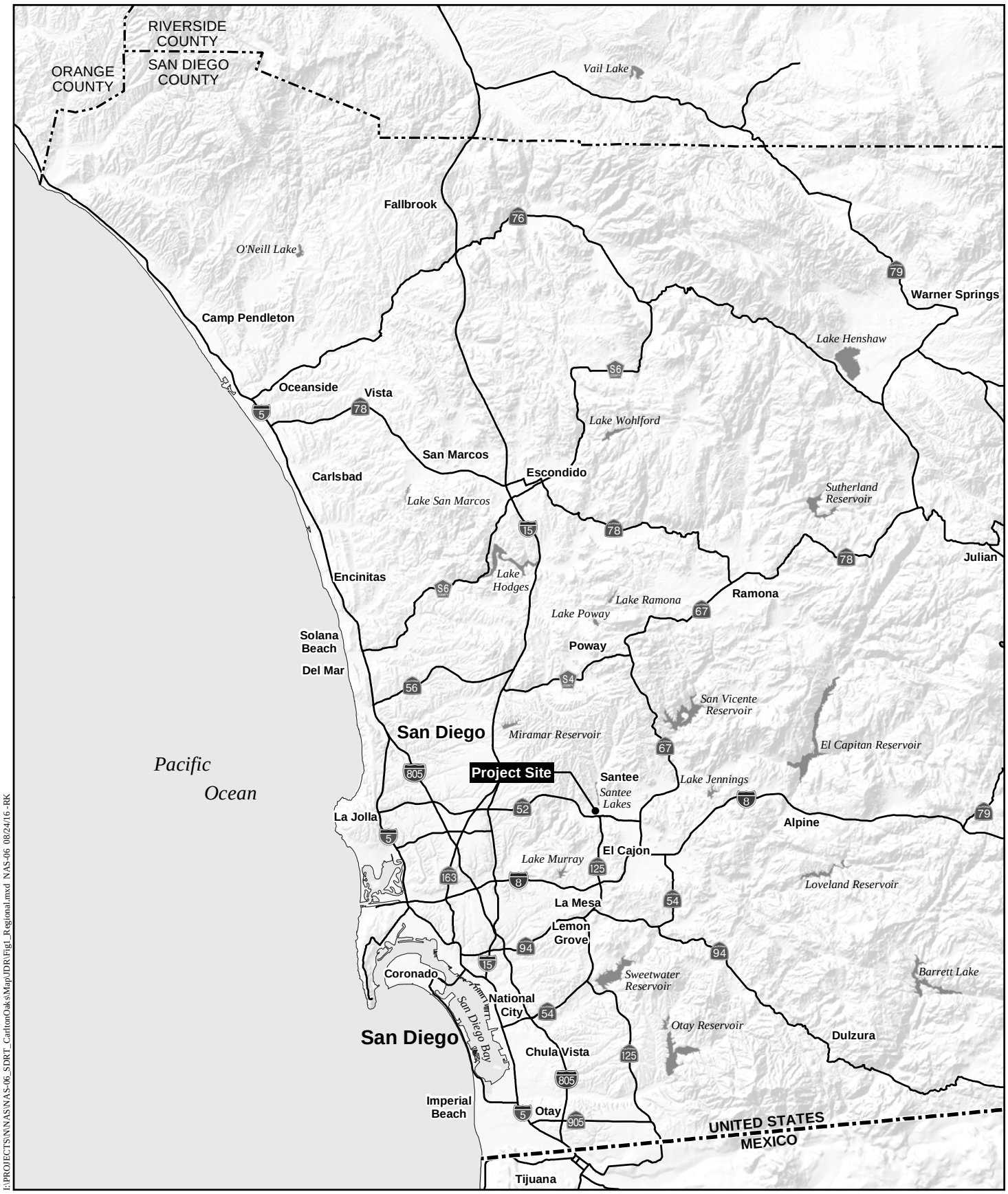
MAP SYMBOL	MAP UNIT NAME	ACREAGE[2]
GoA	Grangeville fine sandy loam, 0-2 percent slopes	0.7
RdC	Redding gravelly loam, 2-9 percent slopes	0.2
Rm	Riverwash	73.1
SbA	Salinas clay loam, 0-2 percent slopes	0.1
TuB	Tujunga sand, 0-5 percent slopes	3.6
VbC	Visalia gravelly sandy loam, 5-9 percent slopes	1.4
	TOTAL	**79.1**

[1]Pursuant to the Natural Resources Conservation Service Web Soil Survey (2016).
[2]Rounded to the nearest tenth acre.

The BSA is located within the 440-square-mile San Diego Hydrologic Unit (HU), one of 12 HUs identified in San Diego County by the RWQCB. It is further located within portions of the Santee Hydrologic Subarea (HSA) in the Lower San Diego Hydrologic Area (HA; [Hydrologic Unit Code 907.12]). The San Diego River conveys flows westward from the BSA to the Pacific Ocean near the community of Ocean Beach.

Biological Conditions

The BSA consists of a mix of ornamental, disturbed, and developed lands associated with the golf course and existing roads, which together make up 46.8 acres (59 percent) of the BSA, and riparian habitats that make up 31.8 acres (40 percent) of the BSA. The remaining 0.5 acre (one percent) consists of small patches of native and naturalized upland habitats.



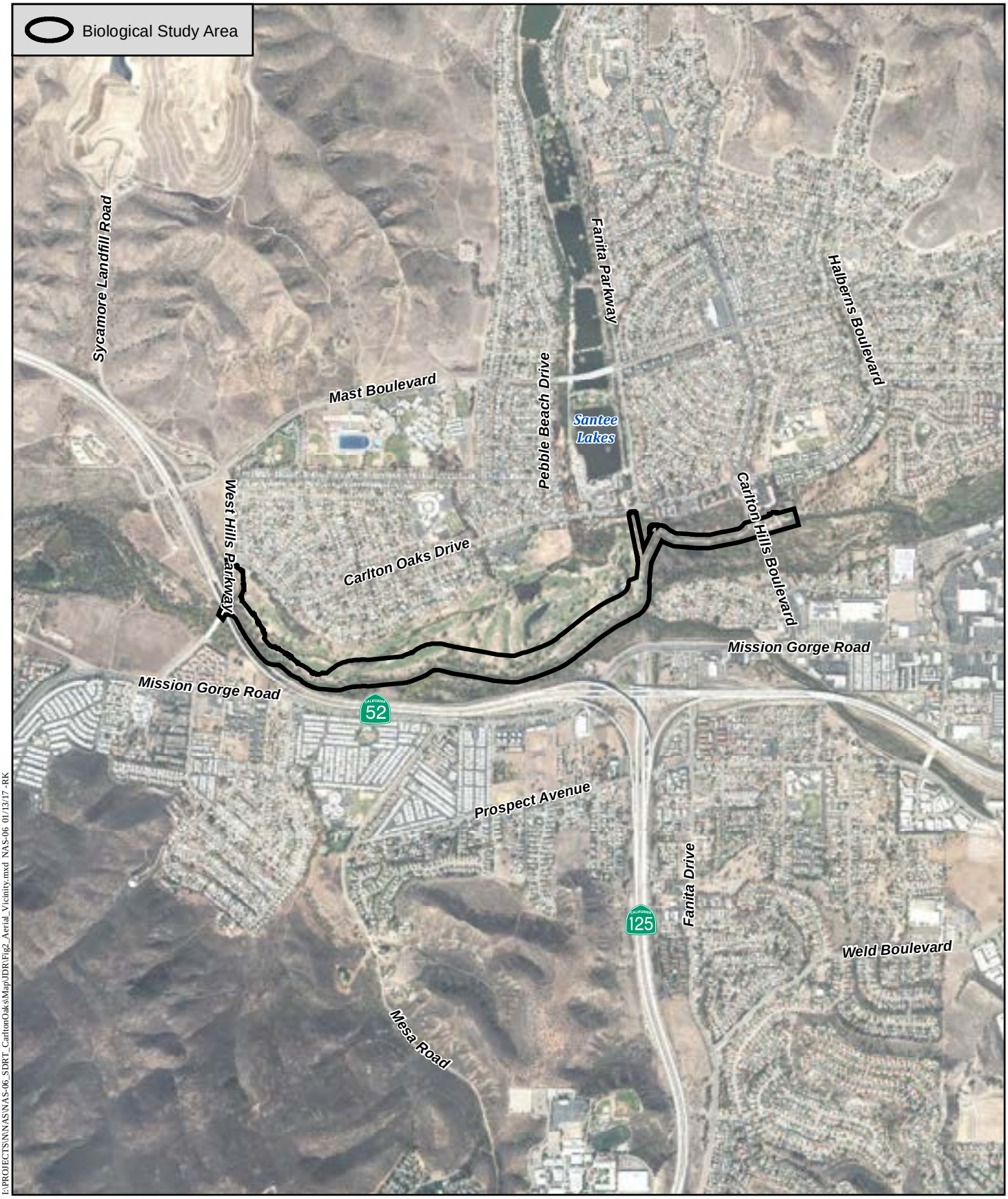
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Regional Location Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 8 Miles

Figure 1



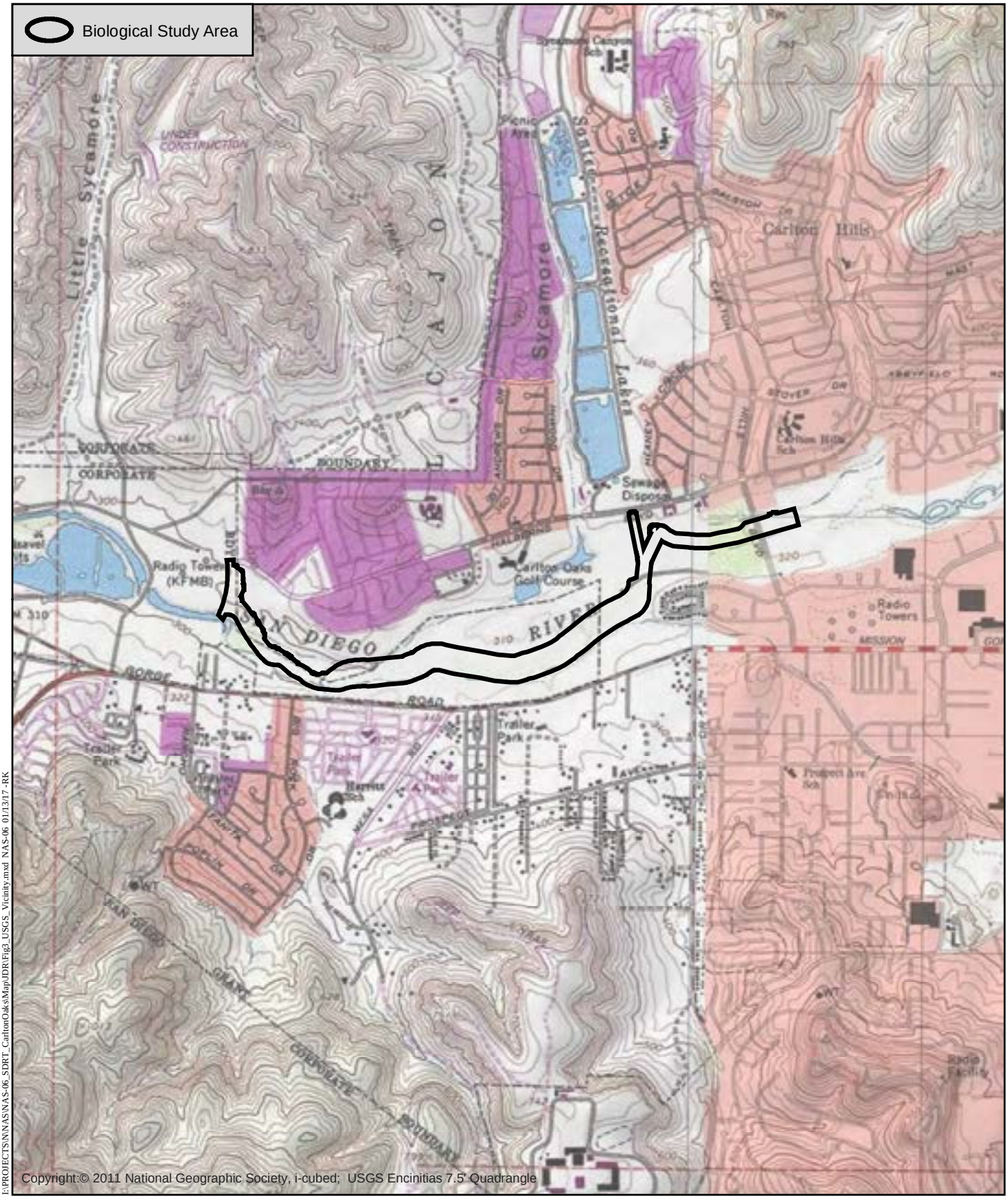
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Project Vicinity Map (Aerial Photograph)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 2



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Project Vicinity Map (USGS Topography)

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 2,000 Feet

Figure 3



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Vegetation and Sensitive Biological Resources

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 4



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Soils Map

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 5

Native habitats within the BSA are associated primary with the San Diego River, which supports a riparian corridor that is constrained by development on both sides, including the golf course, State Route 52 and other roadways, and single-family residential development. The San Diego River riparian corridor is known to support habitat for the federal and state listed endangered least Bell's vireo (*Vireo bellii pusillus*), which has been observed within the BSA (HELIX 2016).

There is an existing decomposed granite trail through Mast Park and directly east of the golf course, and there is an informal dirt trail along the top of the berm that separates the golf course from the San Diego River along much of the BSA. Hikers, walkers, and bicyclists have been observed using these trails.

II. METHODS

A jurisdictional delineation was conducted on June 22 and 23, 2016 by HELIX biologists Stacy Nigro and Talaya Rachels. Prior to beginning fieldwork, aerial photographs (1"=100' scale), topographic maps (1"=100' scale), the local soil survey, U.S. Geological Survey (USGS) quadrangle maps, and previous vegetation mapping (SANDAG 2015) were reviewed to determine the location of potential jurisdictional areas that may be affected by the proposed project.

A. U.S. ARMY CORPS OF ENGINEERS JURISDICTION

The USACE asserts regulatory jurisdiction over activities affecting wetland and non-wetland waters of the U.S. (WUS) pursuant to Section 404 of the CWA. Areas with depressions or drainage channels were evaluated for the presence of potential wetland and non-wetland WUS. If an area appeared to support wetland conditions, vegetation and hydrology indicators were noted and a soil pit was excavated to examine soil conditions. The area was then determined to support wetland conditions if it satisfied the three wetland criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008).

Areas were determined to be potential non-wetland WUS if there was evidence of regular surface flow (e.g., bed and bank) but either the vegetation or soils criterion was not met. Jurisdictional limits for these areas were measured according to the presence of a discernible ordinary high water mark (OHWM), which is defined in 33 CFR Section 329.11 as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of the soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas." An overview of USACE wetlands and jurisdictional WUS definitions is presented in Appendix A.

Plants were identified according to The Jepson Manual: Vascular Plants of California (Baldwin et al. 2012). Wetland affiliations of plant species follow the Arid West 2016 Regional Wetland Plant List (Lichvar et al. 2016). Soils information was taken from the NRCS (2016) and

Bowman (1973). Soil chromas were identified according to Munsell's Soil Color Charts (Kollmorgen 1994).

A total of six wetland delineation sampling points were taken in the BSA in locations representative of potentially jurisdictional areas. Soil pits were excavated at five of the sampling points. Soil pits were excavated to depths of 12 to 18 inches. Soil samples were evaluated for hydric soil indicators (e.g., hydrogen sulfide [A4], sandy redox [S5], depleted matrix [F3], redox dark surface [F6], and redox depressions [F8]). Sampling points also were inspected for primary wetland hydrology indicators (e.g., surface water [A1], saturation [A3], water marks [non-riverine, B1], sediment deposits [non-riverine, B2], drift deposits [non-riverine, B3], surface soil cracks [B6], inundation visible on aerial imagery [B7], salt crust [B11], aquatic invertebrates [B13], hydrogen sulfide odor [C1], and oxidized rhizospheres along living roots [C3]) and secondary (e.g., water marks [riverine, B1], sediment deposits [riverine, B2], drift deposits [riverine, B3], drainage patterns in wetlands [B10], shallow aquitard [D3], and positive FAC neutral test [D5]).

Standard USACE wetland delineation data forms were completed for each sampling point in the field and are included in Appendix C. Photographs taken of the sampling points and BSA are included in Appendix D.

The RWQCB asserts regulatory jurisdiction over activities affecting wetland and non-wetland Waters of the State pursuant to Section 401 of the CWA and the State Porter-Cologne Water Quality Control Act. Potential RWQCB jurisdiction and Waters of the State found within the BSA have the same boundaries as potential WUS under USACE jurisdiction.

B. CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE JURISDICTION

Potential CDFW jurisdictional boundaries within the BSA were determined based on the presence of riparian vegetation or regular surface flow, as demonstrated by the presence of a streambed. Streambeds within potential CDFW jurisdiction were delineated based on the definition of streambed as, "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supporting fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports riparian vegetation" (Title 14, Section 1.72). Riparian habitat is not defined in Title 14, but the section refers to vegetation and habitat associated with a stream. The CDFW jurisdictional habitat includes all riparian shrub or tree canopy that may extend beyond the banks of a stream. Definitions of CDFW jurisdictional areas are presented in Appendix B (Section II).

III. RESULTS AND DISCUSSION

A. PRESENCE OF WETLAND INDICATORS

1. Hydrophytic Vegetation

Hydrophytic vegetation is present along nearly the entire southern extent of the BSA, as well as in scattered locations in other portions of the BSA. Characteristic hydrophytic species observed include arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), box-elder (*Acer negundo*), western cottonwood (*Populus fremontii*), evening primrose (*Oenothera elata*), wild grape (*Vitis girdiana*), large-flowered water primrose (*Ludwigia grandiflora*), and cattail (*Typha* sp.). Plant species observed within the sampling points are presented in Table 2, along with their wetland indicator status.

Table 2
PLANT SPECIES OBSERVED AT JURISDICTIONAL DELINEATION SAMPLING POINT LOCATIONS

SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS[1]
Acer negundo	box-elder	FACW
Ambrosia psilostachya	western ragweed	FACU
Anemopsis californica	yerba mansa	OBL
*Apium graveolens**	wild celery	FACW
Artemisia douglasiana	mugwort	FAC
Atriplex prostrata	spearscale	FACW
Baccharis salicifolia	mule fat	FAC
Cortaderia sp.*	pampas grass	FACU
Cyperus eragrostis	flat sedge	FACW
Cyperus sp.	sedge	FACW
Epilobium ciliatum	willow herb	FACW
Erigeron canadensis	horseweed	FACU
Eucalyptus sp.*	eucalyptus	UPL
*Euphorbia peplus**	petty spurge	UPL
*Helminthotheca echioides**	bristly ox-tongue	FAC
Isocoma menziesii	goldenbush	FAC
Juncus acutus ssp. *leopoldii*	southwestern spiny rush	FACW
Juncus mexicanus	Mexican rush	FACW
*Ludwigia grandiflora**	large-flowered water primrose	OBL
*Medicago polymorpha**	bur-clover	FACU
*Melia azedarach**	China berry	UPL

Table 2 (cont.)
PLANT SPECIES OBSERVED AT JURISDICTIONAL DELINEATION SAMPLING POINT LOCATIONS

SCIENTIFIC NAME	COMMON NAME	WETLAND INDICATOR STATUS[1]
Melilotus albus[*]	white sweetclover	UPL
Oenothera elata	evening primrose	FACW
Plantago major[*]	common plantain	FAC
Platanus racemosa	western sycamore	FAC
Polypogon monspeliensis[*]	annual beard grass	FACW
Populus fremontii	western cottonwood	FAC
Quercus agrifolia	coast live oak	UPL
Raphanus sativus[*]	wild radish	UPL
Rosa californica	wild rose	FAC
Salix gooddingii	black willow	FACW
Salix lasiolepis	arroyo willow	FACW
Washingtonia robusta[*]	Mexican fan palm	FACW
Xanthium strumarium	cocklebur	FAC

[1]OBL=obligate wetland species, FACW=facultative wetland species, FAC=facultative species, FACU=facultative upland species, UPL=upland species. Please see Appendix A for further explanation of indicator status.
*=Non-native species

2. Wetland Hydrology

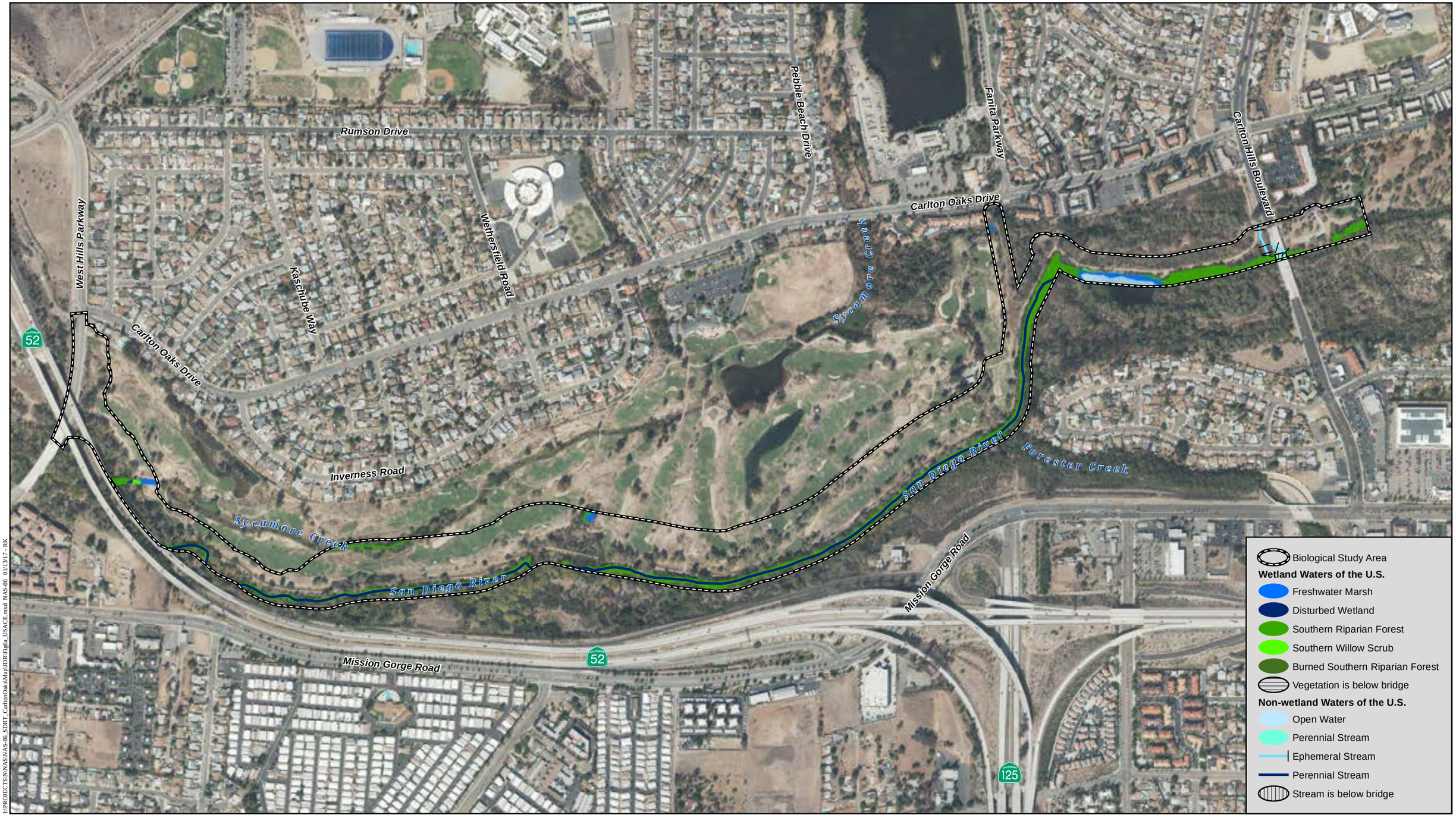
The following wetland hydrology indictors, as defined by the USACE (2008), were observed at the sampling point locations in the BSA: surface water, high water table, saturation, inundation visible on aerial imagery, aquatic invertebrates, hydrogen sulfide odor, sediment deposits, drift deposits, and FAC-neutral test.

3. Hydric Soil

The following hydric soil indicator, as defined by the USACE (2008), was identified in the BSA: hydrogen sulfide.

B. DESCRIPTION OF POTENTIALLY JURISDICTIONAL RESOURCES

Potential jurisdictional wetlands, habitats, and other resources observed in the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, and ephemeral and perennial streams. Depictions of resources within the BSA potentially subject to WUS and CDFW jurisdiction are presented in Figures 6a through 6e and 7a through 7e.



I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOak-sMap\DR\Fig6a_USACE.mxd NAS-06 01/13/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S.

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 6a

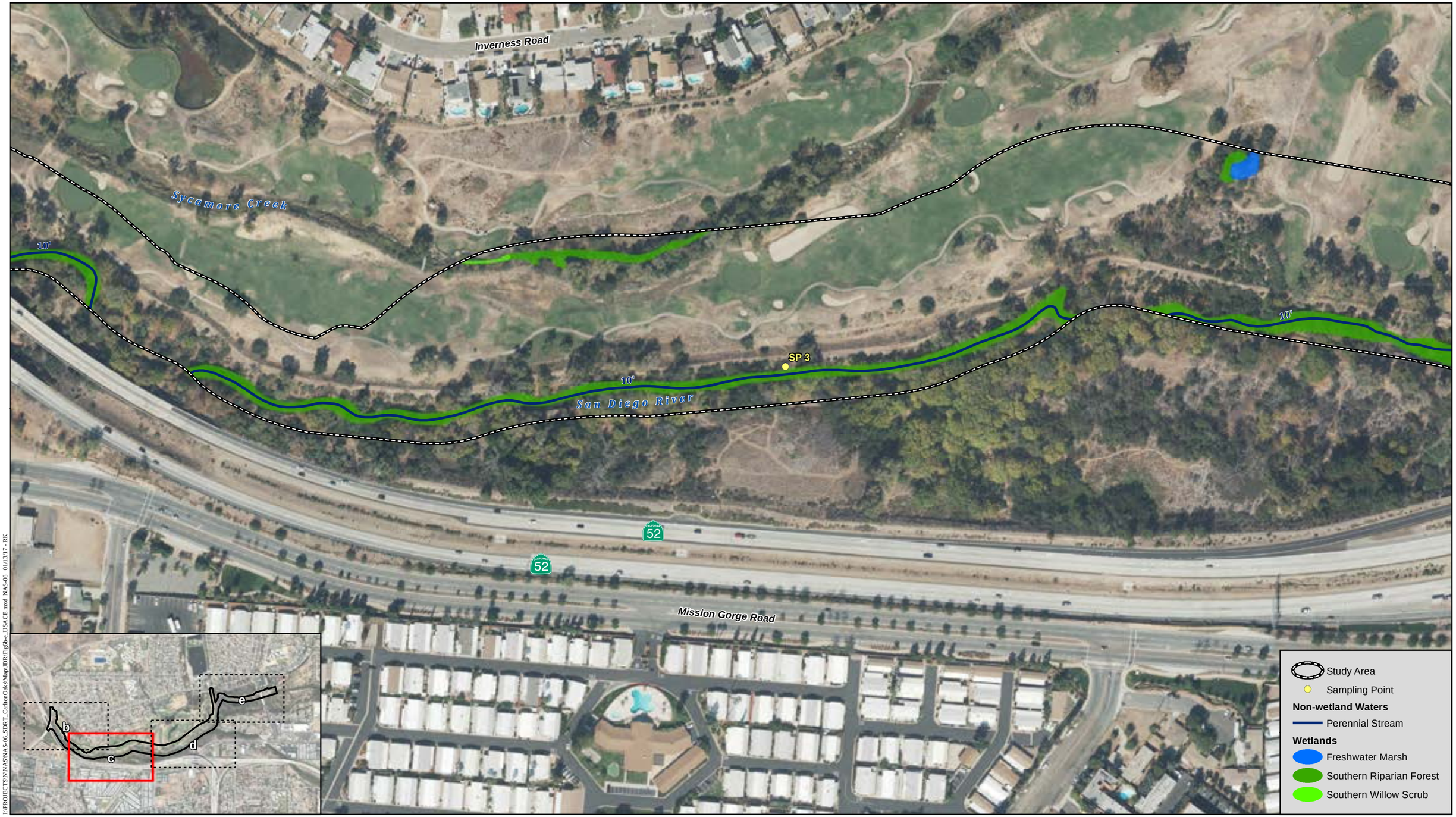


Potential USACE Wetland and Non-wetland Waters of the U.S.

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6b



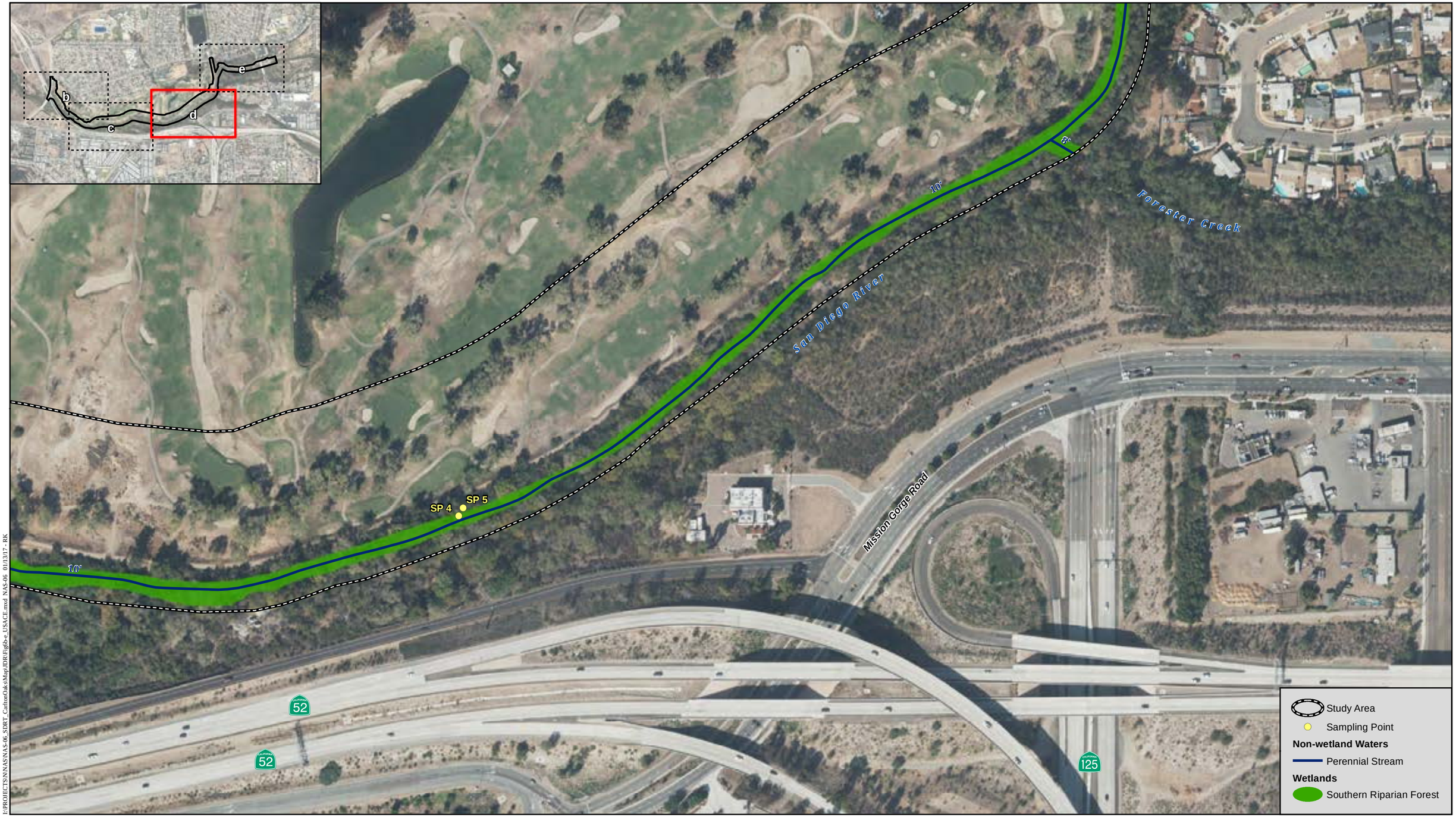
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Potential USACE Wetland and Non-wetland Waters of the U.S.

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6c



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Potential USACE Wetland and Non-wetland Waters of the U.S.

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6d



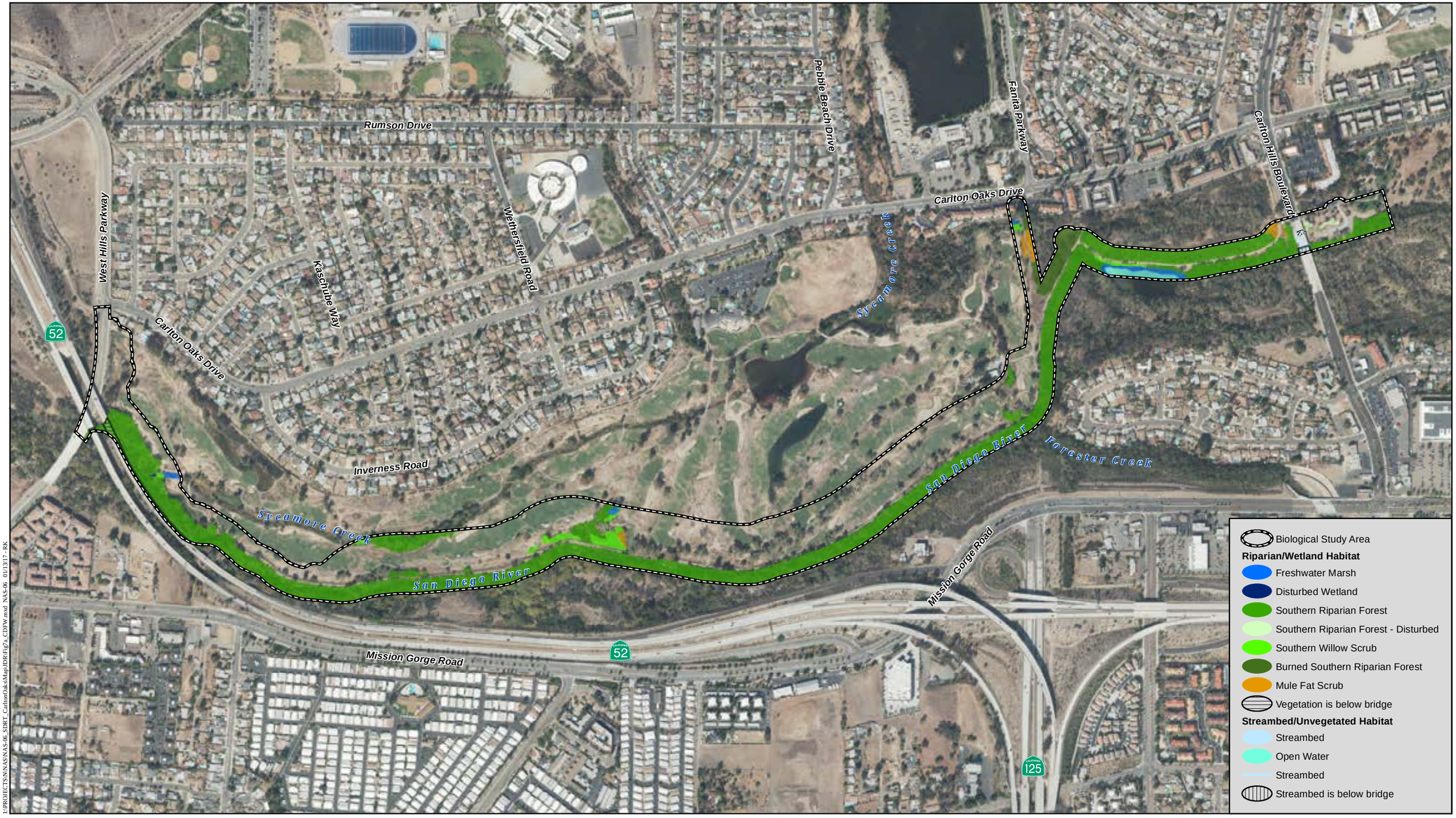
I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\JDR\Fig6b-e_USACE.mxd NAS-06 01/13/17 - RK

Potential USACE Wetland and Non-wetland Waters of the U.S.

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 6e



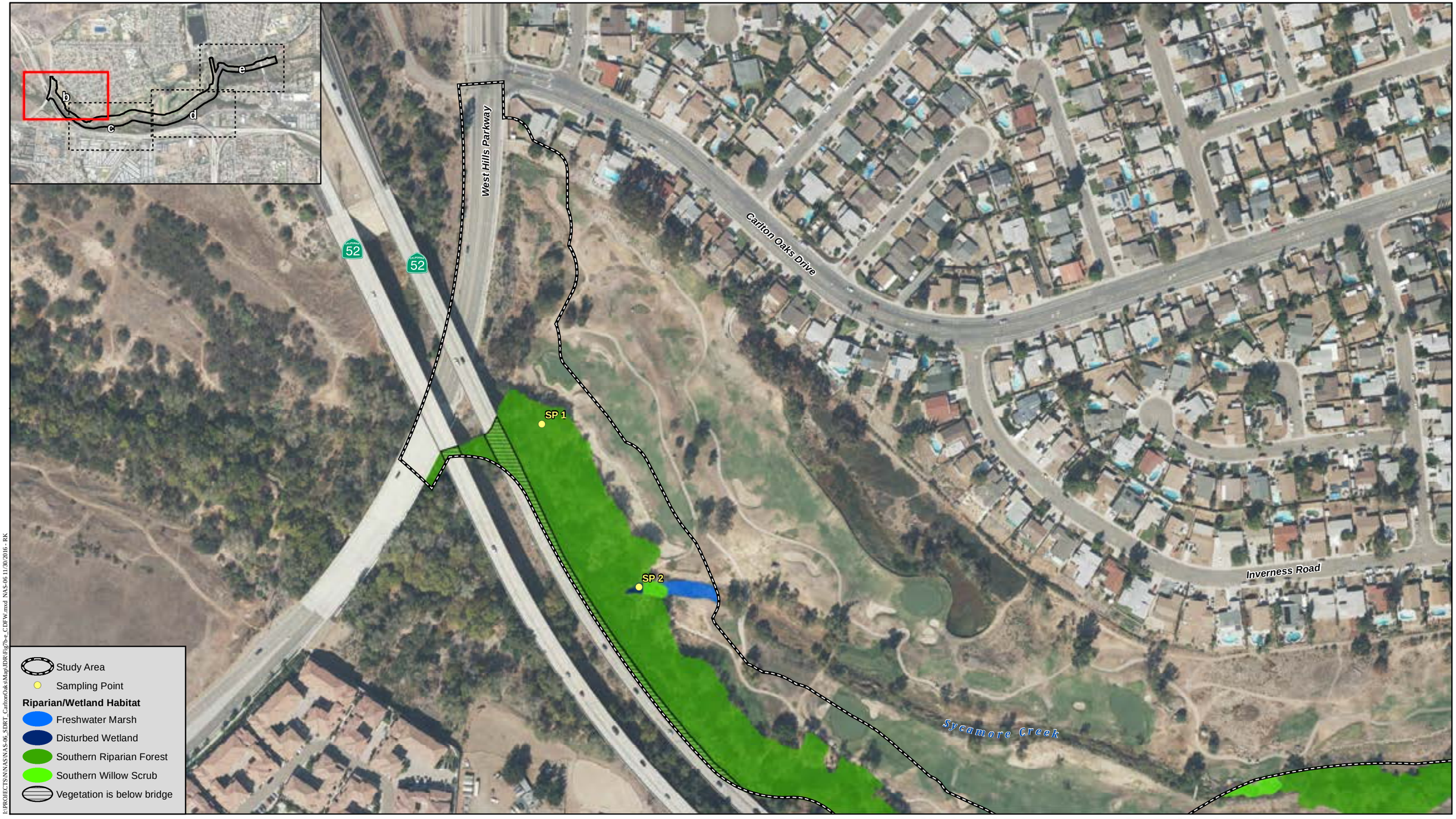
I:\PROJECTS\NAS\NAS-06_SDRT_CarltonOaks\Map\DR\Fig7a_CDFW.mxd NAS-06 01/13/17 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 600 Feet

Figure 7a

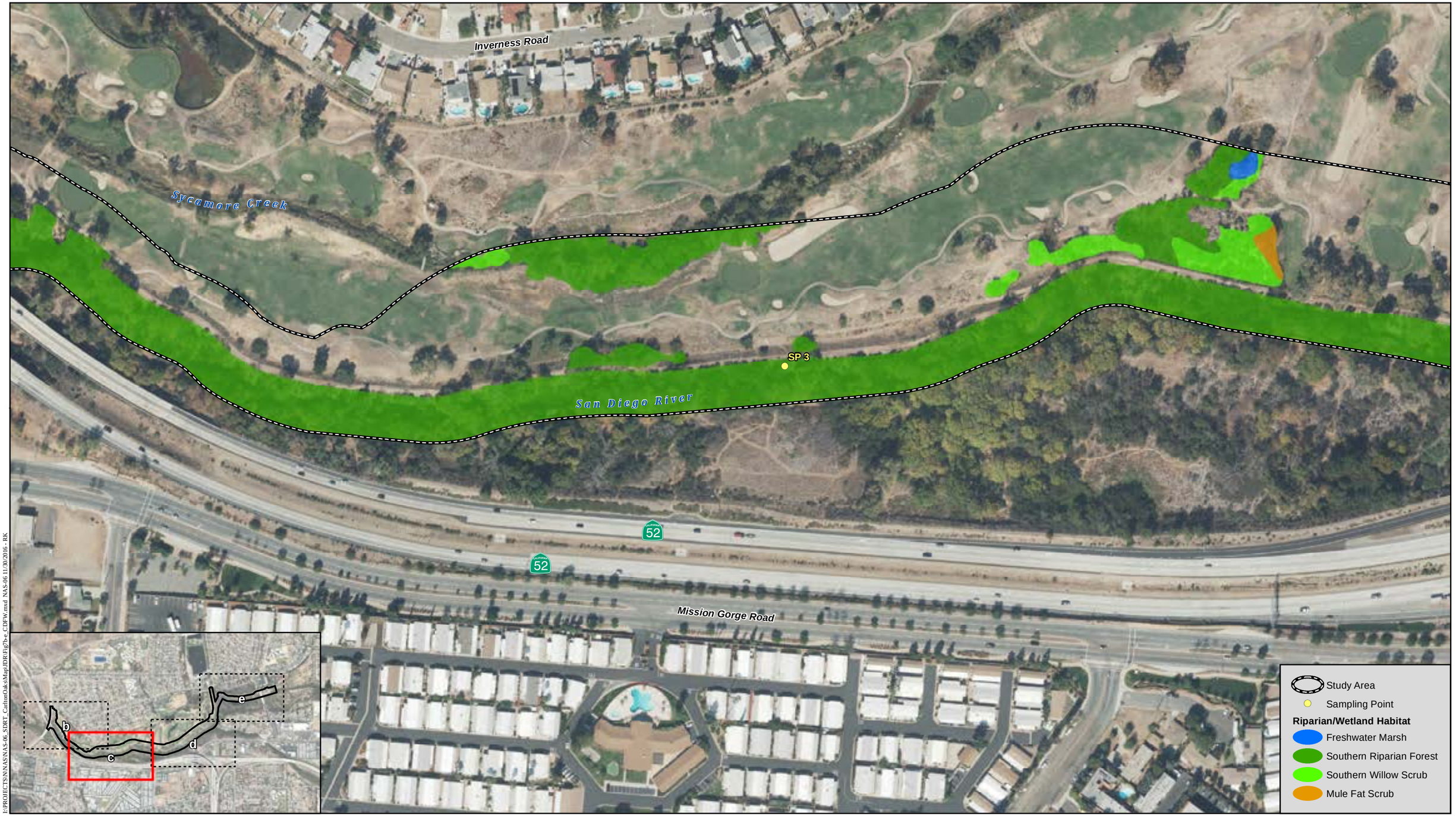


Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7b



F:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\sMap\JDR\Fig7b-e_CDFW.mxd NAS-06 11/30/2016 - RK

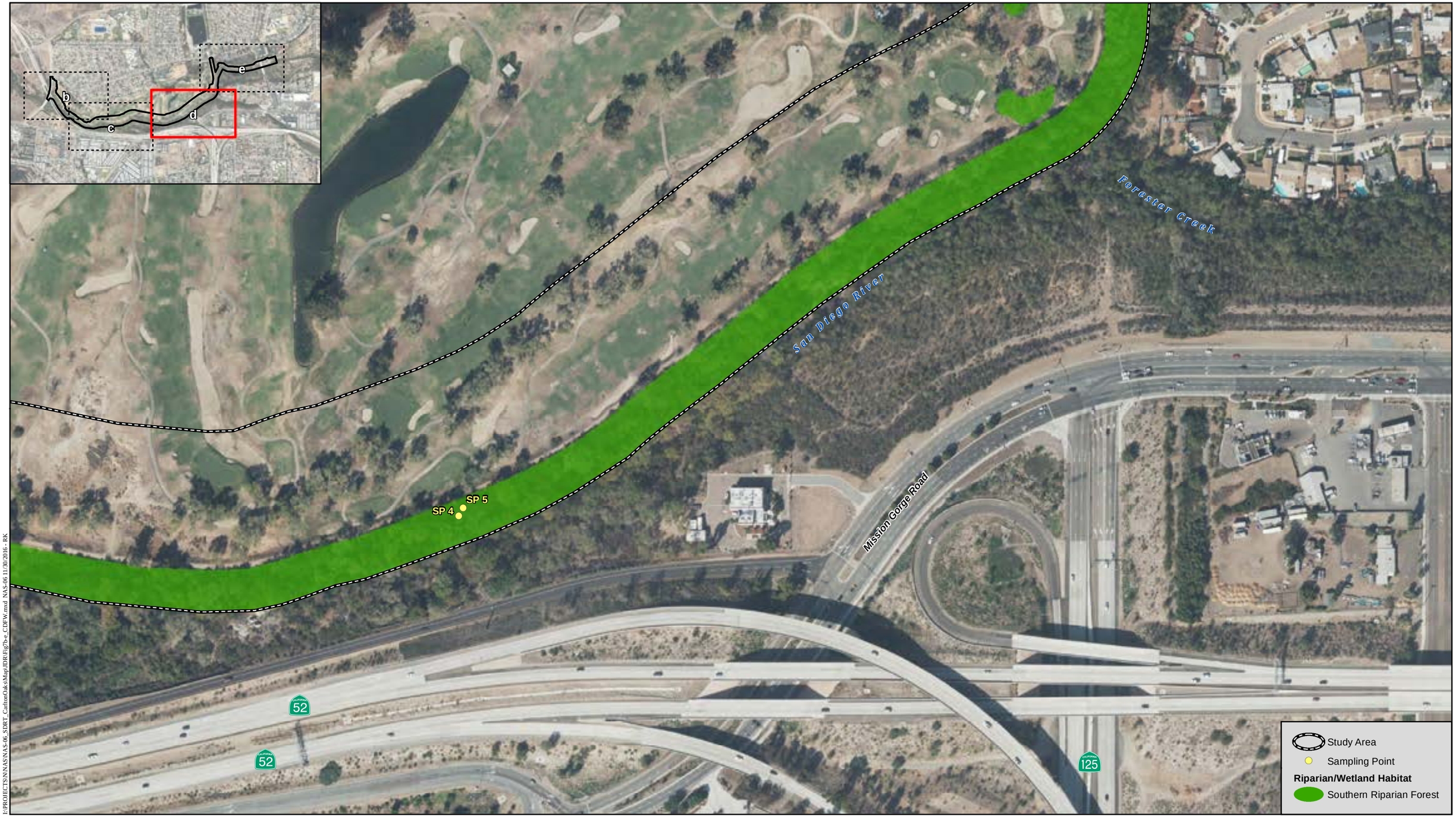
Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N

0 200 Feet

Figure 7c



I:\PROJECTS\NNAS\NAS-06_SDRT_CarltonOaks\Map\JDR\Fig7b-e_CDFW.mxd NAS-06 11/30/2016 - RK

Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7d



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Potential CDFW Jurisdictional Riparian and Wetland Habitat and Streambed

SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT

N 0 200 Feet

Figure 7e

1. Southern Riparian Forest (including disturbed and burned)

Southern riparian forest (including southern riparian woodlands) is composed of winter-deciduous trees that require water near the soil surface. Willow (*Salix* spp.), cottonwood (*Populus* sp.), and western sycamore (*Platanus racemosa*) form a dense medium height woodland or forest in moist canyons and drainage bottoms. Associated understory species include mule fat (*Baccharis salicifolia*), stinging nettle (*Urtica dioica* ssp. *holosericea*), and wild grape (*Vitis girdiana*). The differences between woodlands and forests are physiognomic rather than compositional. Woodlands have less canopy cover than forests. In forests, the canopies of individual tree species overlap so that a canopy cover exceeding 100 percent may occur in the upper tree stratum. In woodlands, there may be large canopy gaps within the upper tree stratum.

Dominant species in this habitat in the BSA include black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), western cottonwood (*Populus fremontii*), box-elder (*Acer negundo*), and wild grape. Burned southern riparian forest was affected by fire in 2014. Disturbed southern riparian forest is composed of two small stands of western cottonwood trees that have been cleared of understory species by maintenance activities conducted within Mast Park. These two stands are immediately east of Carlton Hills Boulevard. Southern riparian forest is the dominant vegetation community along the San Diego River and Sycamore Creek within the BSA. Southern riparian forest habitat within the BSA is potentially subject to CDFW jurisdiction as riparian/wetland habitat, and portions of this habitat are potentially subject to USACE and RWQCB jurisdiction as wetland WUS.

2. Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows in association with mule fat, and with scattered emergent cottonwood and western sycamores. This vegetation community occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows.

Southern willow scrub within the BSA consists of small stands of arroyo willow, black willow, and sandbar willow (*Salix exigua*). These stands are located in the south-central portion of the BSA north of the berm separating the San Diego River from the golf course, as well as in scattered locations east of the golf course as well as along Sycamore Creek in the north-central portion of the BSA. Southern willow scrub within the BSA is potentially subject to CDFW jurisdiction as riparian/wetland habitat, and portions of this habitat are potentially subject to USACE and RWQCB jurisdiction as wetland WUS.

3. Mule Fat Scrub

Mule fat scrub is a depauperate, shrubby riparian scrub community dominated by mule fat and interspersed with small willows. This vegetation community occurs along intermittent stream channels with a fairly coarse substrate and moderate depth to the water table.

Small stands of mule fat scrub occur in the south-central portion of the BSA, where it occurs in association with stands of southern willow scrub, and in the eastern portion of the BSA just west

of Carlton Hills Boulevard and along the eastern edge of the golf course. Mule fat scrub within the BSA is potentially subject to CDFW jurisdiction as riparian/wetland habitat, but it does not meet the criteria for USACE or RWQCB jurisdiction as wetland or non-wetland WUS.

4. Freshwater Marsh

Coastal and valley freshwater marsh is dominated by perennial, emergent monocots, five to 13 ft tall, forming incomplete to completely closed canopies. This vegetation type occurs along the coast and in coastal valleys near river mouths and around the margins of lakes and springs, freshwater or brackish marshes. These areas are semi- or permanently flooded yet lack a significant current (Holland 1986). Dominant species include cattails (*Typha* sp.) and bulrushes (*Scirpus* sp.), along with umbrella sedges (*Cyperus* sp.), rushes (*Juncus* sp.), and spike-sedge.

Small stands of freshwater marsh occur in four locations within the BSA. One stand occurs along Sycamore Creek in the western portion of the BSA, a second stand occurs north of the berm separating the San Diego River from the golf course in the central portion of the BSA, a third stand occurs in the northeastern corner of the golf course, and a fourth stand occurs along the fringes of the open water pond in the eastern portion of the BSA. Cattails are the dominant species in this habitat within the BSA. Freshwater marsh within the BSA is potentially subject to CDFW jurisdiction as riparian/wetland habitat, and potentially subject to USACE and RWQCB jurisdiction as wetland WUS.

5. Disturbed Wetland

Disturbed wetland is dominated by exotic wetland species that invade areas that have been previously altered or undergone periodic disturbances. These non-natives become established more readily following natural or human-induced habitat disturbance than the native wetland flora.

Disturbed wetland occurs as a single stand of habitat in the western portion of the BSA, adjacent to southern riparian forest. Water primrose (*Ludwigia grandiflora*) is the dominant species in this habitat within the BSA. Disturbed wetlands within the BSA are potentially subject to CDFW jurisdiction as riparian/wetland habitat, and potentially subject to USACE and RWQCB jurisdiction as wetland WUS.

6. Open Water

Open water in the BSA consists of a portion of a pond excavated within the San Diego River in the eastern portion of the BSA. Open water within the BSA potentially falls under CDFW jurisdiction, and is potentially subject to USACE and RWQCB jurisdiction as non-wetland WUS.

7. Ephemeral and Perennial Streams

Ephemeral stream consists of unvegetated channels with an ephemeral hydrologic regime. Ephemeral stream within the BSA consists of two narrow channels in the eastern portion of the

BSA, ranging in width from two to eight ft. One channel parallels Carlton Hills Boulevard, conveying ephemeral flows south to the San Diego River, and the other conveys ephemeral flows below the Carlton Hills Boulevard bridge, connecting to the San Diego River. Ephemeral streams within the BSA are potentially subject to USACE and RWQCB jurisdiction as non-wetland WUS, and streambed by the CDFW. Potential USACE and RWQCB jurisdiction extends to the OHWM, while CDFW jurisdiction extends to top of bank.

Perennial stream consists of unvegetated portions of the San Diego River, which has a perennial hydrologic regime. Perennial stream within the BSA is potentially subject to USACE and RWQCB jurisdiction as non-wetland WUS. Potential USACE and RWQCB jurisdiction extends to the OHWM of these channels (or to the outer edge of adjacent wetland habitat where wetland WUS occur adjacent to the channel).

Perennial stream within the BSA that is not otherwise potentially subject to CDFW jurisdiction as riparian/wetland habitat is potentially subject to CDFW jurisdiction as streambed. The San Diego River channel is covered by riparian canopy along its entire length within the BSA, except for below the Carlton Hills Boulevard bridge. Therefore, only the unvegetated perennial stream area below this bridge would potentially be subject to CDFW jurisdiction as streambed; all other San Diego River riparian habitat within the BSA would be subject to CDFW jurisdiction as riparian/wetland habitat. Potential CDFW jurisdiction over perennial stream extends to top of bank.

C. SAMPLING POINTS

Below is a summary of the six wetland delineation sampling points taken in the BSA.

1. Sampling Point 1

This sampling point was located in southern riparian forest in the western portion of the BSA. Vegetation was dominated by four wetland plant species (box-elder [dominant in two strata], evening primrose, and spearscale), thus meeting the USACE wetland vegetation criterion. Two secondary wetland hydrology indicators were present: drift deposits (B3) and FAC-neutral test (D5), thus meeting the USACE wetland hydrology criterion. A soil pit excavated to 16 inches did not reveal the presence of hydric soil indicators. This sampling point met only two of the three USACE wetland criteria and, therefore, is not likely subject to USACE jurisdiction as a wetland WUS. It is, however, potentially subject to CDFW jurisdiction as riparian/wetland habitat.

2. Sampling Point 2

This sampling point was located in disturbed wetland in the western portion of the BSA. Vegetation was dominated by a single wetland plant species: large-flowered water primrose, thus meeting the USACE wetland vegetation criterion. Two primary wetland hydrology indicators were present: surface water (A1) and aquatic invertebrates (B1), as well as two secondary wetland hydrology indicators: drift deposits (B3) and FAC-neutral test (D5), thus meeting the USACE wetland hydrology criterion. Hydric soil was assumed present based on long duration

of inundation resulting in anaerobic conditions, coupled with dominance by obligate vegetation and an abrupt boundary between wetland and upland habitat. This sampling point met all three of the USACE wetland criteria and is potentially subject to USACE jurisdiction as wetland WUS. It is potentially subject to CDFW jurisdiction as riparian/wetland habitat.

3. Sampling Point 3

This sampling point was located in southern riparian forest in the central portion of the BSA. Vegetation was dominated by four wetland plant species: western sycamore, black willow, arroyo willow, and bristly ox-tongue, thus meeting the USACE wetland vegetation criterion. Two secondary wetland hydrology indicators were present: sediment deposits (B2) and drift deposits (B3), thus meeting the USACE wetland hydrology criterion. A soil pit excavated to 16 inches did not reveal the presence of hydric soil indicators. This sampling point met only two of the three USACE wetland criteria and, therefore, is not likely subject to USACE jurisdiction as wetland WUS. It is, however, potentially subject to CDFW jurisdiction as riparian/wetland habitat.

4. Sampling Point 4

This sampling point was located in southern riparian forest in the central portion of the BSA on a low terrace adjacent to the San Diego River channel. Vegetation was dominated by four wetland plant species: box-elder, wild celery, sedge, and common plantain, thus meeting the USACE wetland vegetation criterion. Four primary wetland hydrology indicators were present: surface water (A1), high water table (A2), saturation (A3), and hydrogen sulfide (C1), as well as three secondary wetland hydrology indicators: sediment deposits (B2), drift deposits (B3), and FAC-neutral test (D5), thus meeting the USACE wetland hydrology criterion. A soil pit excavated to 12 inches revealed the presence of hydrogen sulfide odor (A4), thus meeting the USACE hydric soil criterion. This sampling point met all three of the USACE wetland criteria and is therefore potentially subject to USACE jurisdiction as wetland WUS, and potentially subject to CDFW jurisdiction as riparian/wetland habitat.

5. Sampling Point 5

This sampling point was located in southern riparian forest in the central portion of the BSA, upslope of Sampling Point 4. Vegetation was dominated by three wetland plant species: box-elder, evening primrose, and common plantain, thus meeting the USACE wetland vegetation criterion. Three secondary wetland hydrology indicators were present: sediment deposits (B2), drift deposits (B3), and FAC-neutral test (D5), thus meeting the USACE wetland hydrology criterion. A soil pit excavated to 13 inches did not reveal the presence of hydric soil indicators. This sampling point met only two of the three USACE wetland criteria and, therefore, is not likely subject to USACE jurisdiction as wetland WUS. It is, however, potentially subject to CDFW jurisdiction as riparian/wetland habitat.

6. Sampling Point 6

This sampling point was located in southern riparian forest in the eastern portion of the BSA. Vegetation was dominated by six wetland plant species: western cottonwood (dominant in two strata), mule fat, goldenbush, southwestern spiny rush, and yerba mansa, thus meeting the USACE wetland vegetation criterion. No primary and only one secondary wetland hydrology indicators were present: FAC-neutral test (D5); therefore, the USACE wetland hydrology criterion was not met. A soil pit excavated to 18 inches did not reveal the presence of hydric soil indicators. This sampling point met only one of the three USACE wetland criteria and, therefore, is not likely subject to USACE jurisdiction as wetland WUS. It is, however, potentially subject to CDFW jurisdiction as riparian/wetland habitat.

Notes on Sampling Points

Sampling points were not taken in stands of freshwater marsh, which were dominated by obligate wetland vegetation, contained standing water, and are located in landscape positions likely to support hydric soils. Freshwater marsh within the BSA is considered wetland WUS potentially subject to USACE jurisdiction. Sampling points were not taken in the small stands of mule fat scrub, which are dominated by a facultative species and are clearly located above the OHWM in a landscape position that would not support hydric soils and would not meet all three USACE wetland criteria. Sampling points were not taken within southern willow scrub, as similarly situated southern riparian forest was used as a baseline for determining wetland conditions in this habitat type.

D. SUMMARY OF POTENTIALLY JURISDICTIONAL RESOURCES

Potential jurisdictional wetlands, habitats, and other resources within the BSA include southern riparian forest (including disturbed and burned), southern willow scrub, mule fat scrub, freshwater marsh, disturbed wetland, open water, and non-wetland WUS/ephemeral and perennial stream. As shown in Tables 3 and 4, within the BSA there are approximately 10.40 acres of wetland and non-wetland WUS potentially subject to USACE jurisdiction, and approximately 31.91 acres of riparian/wetland habitat and streambed potentially subject to CDFW jurisdiction.

1. Potential U.S. Army Corps of Engineers Jurisdiction – Wetland and Non-Wetland Waters of the U.S.

Potential USACE jurisdiction within the BSA totals approximately 10.40 acres, made up of approximately 8.14 acres of wetland WUS and approximately 2.26 acres of non-wetland WUS (Figures 6a-6e; Table 3).

Table 3 POTENTIAL USACE JURISDICTION WITHIN THE BIOLOGICAL STUDY AREA	
POTENTIAL USACE JURISDICTION	**ACREAGE***
Wetland Waters of the U.S.	
Southern Riparian Forest	7.50
Southern Willow Scrub	0.09
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Wetland Waters of the U.S. Subtotal	***8.14***
Non-wetland Waters of the U.S.	
Open Water	0.52
Ephemeral Stream	0.03
Perennial Stream	1.71
Non-wetland Waters of the U.S. Subtotal	***2.26***
TOTAL	**10.40**

*Acreage is rounded to the nearest 0.01 acre.

Potential RWQCB jurisdiction within the BSA follows the same boundaries of potential USACE jurisdiction for wetland and non-wetland WUS. There are no isolated waters of the State within the BSA subject to exclusive RWQCB jurisdiction pursuant to the State Porter-Cologne Water Quality Control Act.

2. Potential California Department of Fish and Wildlife Jurisdiction – Wetland/Riparian Habitat and Streambed

Potential CDFW jurisdiction within the BSA totals approximately 31.91 acres, made up of approximately 31.30 acres of wetland/riparian habitat and approximately 0.61 acre of unvegetated streambed or open water (Table 4; Figure 7a-7e).

Table 4 POTENTIAL CDFW JURISDICTION WITHIN THE BIOLOGICAL STUDY AREA	
POTENTIAL CDFW JURISDICTION	**ACREAGE***
Riparian/Wetland Habitat	
Southern Riparian Forest (including burned and disturbed)	29.14
Southern Willow Scrub	1.10
Mule Fat Scrub	0.51
Freshwater Marsh	0.54
Disturbed Wetland	0.01
Riparian/Wetland Habitat Subtotal	***31.30***

Table 4 (cont.)
POTENTIAL CDFW JURISDICTION
WITHIN THE BIOLOGICAL STUDY AREA

POTENTIAL CDFW JURISDICTION	ACREAGE*
Stream Channel/Unvegetated Habitat	
Open Water	0.52
Streambed	0.09
Stream Channel/Unvegetated Habitat Subtotal	***0.61***
TOTAL	**31.91**

*Acreage is rounded to the nearest 0.01 acre.

IV. REFERENCES

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Appendix A

FEDERAL JURISDICTIONAL INFORMATION

Appendix A
FEDERAL JURISDICTIONAL INFORMATION

Wetlands and "Waters of the U.S." Definitions

Wetlands. The U.S. Army Corps of Engineers (USACE; Federal Register 1982) and the Environmental Protection Agency (Federal Register 1980) jointly define wetlands as "[t]hose areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (Environmental Laboratory 1987).

Waters of the U.S. The official definition of "Waters of the U.S." and their limits of jurisdiction (as they may apply) are defined by the USACE' Regulatory Program Regulations (Section 328.3, paragraphs [a] 1-3 and [e], and Section 328.4, paragraphs [c] 1 and 2) as follows:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. all interstate waters including interstate wetlands;
3. all other waters such as intrastate lakes, rivers, streams (including intermittent streams) , mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters,
    i. which are or could be used by interstate or foreign travelers for recreation or other purposes; or
    ii. from which fish or shellfish are or could be taken and sold in interstate commerce; or
    iii. which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
5. Tributaries of waters …;
6. The territorial seas;
7. Wetlands adjacent to waters (other than waters that are themselves wetlands)…

Non-tidal Waters of the U.S. The limits of jurisdiction in non-tidal waters: In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or when adjacent wetlands are present, the jurisdiction extends to the limit of the adjacent wetlands.

The term ordinary high water mark (OHWM) means that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation (scouring), the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Waters of the U.S. must exhibit an OHWM or other evidence of surface flow created by hydrologic physical changes. These physical changes include (Riley 2005):

- Natural line impressed on the bank
- Shelving
- Changes in the character of soil
- Destruction of terrestrial vegetation
- Presence of litter and debris
- Wracking
- Vegetation matted down, bent, or absent
- Sediment sorting
- Leaf litter disturbed or washed away
- Scour
- Deposition
- Multiple observed flow events
- Bed and banks
- Water staining
- Change in plant community

Further guidance on identifying the OHWM in the Arid Southwest (Lichvar and McColley 2008). This publication provided geomorphic and vegetation OHWM indicators specific to the Arid Southwest.

.Jurisdictional areas also must be connected to Waters of the U.S. (Guzy and Anderson 2001; U.S. Supreme Court 2001).

As a consequence of the U.S. Supreme Court decision in Rapanos v. United States, a memorandum was developed regarding Clean Water Act jurisdiction (Grumbles and Woodley 2007). The memorandum states that the EPA and the USACE will assert jurisdiction over traditional navigable waters (TNW), wetlands adjacent to TNW, tributaries to TNWs that are a relatively permanent water body (RPW), and wetlands adjacent to TNW. An RPW has year round flow or continuous seasonal flow (i.e., typically for three months or longer). Jurisdiction over other waters (i.e., non TNW and RPW) will be based on a fact specific analysis to determine if they have a significant nexus to a TNW.

Pursuant to the USACE Instructional Guidebook (USACE and EPA 2007), the significant nexus evaluation will cover the subject reach of the stream (upstream and downstream) as well as its adjacent wetlands (Illustrations 2 through 6, USACE and EPA 2007). The evaluation will include the flow characteristics, annual precipitation, ability to provide habitat for aquatic species, ability to retain floodwaters and filter pollutants, proximity of the subject reach to a TNW, drainage area, and the watershed.

Wetland Criteria

Wetland boundaries are determined using three mandatory criteria (hydrophytic vegetation, wetland hydrology, and hydric soil) established for wetland delineations and described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Following is a brief discussion of the three criteria and how they are evaluated.

Vegetation

"Hydrophytic vegetation is defined herein as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987).

The wetland indicator status (obligate upland, facultative upland, facultative, facultative wetland, obligate wetland, or no indicator status) of the dominant plant species of all vegetative layers is determined. Species considered to be hydrophytic include the classifications of facultative, facultative wetland, and obligate wetland as defined in the current list of wetland plants of the Arid Southwest (Lichvar, et. al. 2014; Table A-1). The percent of dominant wetland plant species is calculated. The hydrophytic vegetation criterion is considered to be met if it meets the "Dominance Test," "Prevalence Index," or the vegetation has morphological adaptations for prolonged inundation.

Table A-1
DEFINITIONS OF PLANT INDICATOR CATEGORIES

INDICATOR CATEGORIES	ABBREVIATION	QUALITATIVE DESCRIPTION
Obligate	OBL	Almost always occur in wetlands
Facultative Wetland	FACW	Usually occur in wetlands but may occur in non-wetlands
Facultative	FAC	Occur in wetlands and non-wetlands
Facultative Upland	FACU	Usually occur in non-wetlands but may occur in wetlands
Upland	UPL	Almost never occur in wetlands

Hydrology

"The term 'wetland hydrology' encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic reducing conditions, respectively" (Environmental Laboratory 1987).

Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for at least 5 percent of the growing season during a normal rainfall year (approximately 18 days for most of low-lying southern California). Hydrology criteria are evaluated based on the characteristics listed below (USACE 2008). Where positive indicators of wetland hydrology are present, the limit of the OHWM (or the limit of adjacent wetlands) is noted and mapped. Evidence of wetland hydrology is met by the presence of a single primary indicator or two secondary indicators.

Primary

- surface water (A1)
- high water table (A2)
- saturation (A3)
- water marks (B1; non-riverine)
- sediment deposits (B2; non-riverine)
- drift deposits (B3; non-riverine
- surface soil cracks (B6)
- inundation visible on aerial imagery (B7)
- water-stained leaves (B9)
- salt crust (B11)
- biotic crust (B12)
- aquatic invertebrates (B13)
- hydrogen sulfide odor (C1)
- oxidized rhizospheres along living roots (C3)
- presence of reduced iron (C4)
- recent iron reduction in tilled soils (C6)
- thin muck surface (C7)

Secondary

- watermarks (B1; riverine)
- sediment deposits (B2; riverine)
- drift deposits (B3; riverine)
- drainage patterns (B10)
- dry-season water table (C2)
- crayfish burrows (C8)
- saturation visible on aerial imagery (C9)
- shallow aquitard (D3)
- FAC-neutral test (D5)

In the absence of all other hydrologic indicators and in the absence of significant modifications of an area's hydrologic function, positive hydric soil characteristics are assumed to indicate positive wetland hydrology. This assumption applies unless the site visit was done during the wet season of a normal or wetter-than-normal year. Under those circumstances, wetland hydrology would not be present.

Soils

The USACE and Environmental Protection Agency, in their administration of Section 404 of the Clean Water Act, rely on the National Technical Committee for Hydric Soils (NTCHS) for a definition of hydric soils. According to the NTCHS "A hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part." (Federal Register 1994)

Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation. Soil matrix and mottle colors are identified at each sampling plot using a Munsell soil color chart (Kollmorgen 1994). Generally, an 18-inch or deeper pit is excavated with a shovel at each sampling plot unless refusal occurs above 18 inches.

Soils in each area are closely examined for hydric soil indicators, including the characteristics listed below. Hydric soil indicators are presented in three groups. Indicators for "All Soils" (A) are used in any soil regardless of texture, indicators for "Sandy Soils" (S) area used in soil layers with USDA textures of loamy fine sand or coarser, and indicators for "Loamy and Clayey Soils" (F) are used with soil layers of loamy very fine sand and finer (USACE 2008).

- histosols (A1)
- histic epipedons (A2)
- black histic (A3)
- hydrogen sulfide (A4)
- stratified layers (A5)
- 1 cm muck (A9)
- depleted below dark surface (A11)
- thick dark surface (A12)
- sandy mucky mineral (S1)
- sandy gleyed matrix (S4)
- sandy redox (S5)
- stripped matrix (S6)
- loamy mucky mineral (F1)
- loamy gleyed matrix (F2)
- depleted matrix (F3)
- redox dark surface (F6)
- depleted dark surface (F7)
- redox depressions (F8)
- vernal pools (F9)
- 2 cm muck (A10)
- reduced vertic (F18)
- red parent material (TF2)

Hydric soils may be assumed to be present in plant communities that have complete dominance of obligate or facultative wetland species. In some cases, there is only inundation during the growing season and determination must be made by direct observation during that season, recorded hydrologic data, testimony of reliable persons, and/or indication on aerial photographs.

Non-wetland Waters of the U.S.

The non-wetland Waters of the U.S. designation is met when an area has periodic surface flows but lacks sufficient indicators to meet the hydrophytic vegetation and/or hydric soils criteria. For purposes of delineation and jurisdictional designation, the non-wetland Waters of the U.S. boundary in non-tidal areas is the OHWM as described in the Section 404 regulations (33 CFR Part 328).

USGS Mapping

The USGS Quad maps are one of the resources used to aid in the identification and mapping of jurisdictional areas. Their primary uses include understanding the subregional landscape position of a site, major topographical features, and a project's position in the watershed.

In our experience the designation of watercourse as a blue-line stream (intermittent or perennial) on USGS maps has been unreliable and typically overstates the hydrology of most streams. This has also been the experience of others, including the late Luna Leopold. Leopold was a hydrologist with USGS from 1952 to 1972, Professor in the Department of Geology and Geophysics, and Department of Landscape Architecture, University of California, Berkeley from 1972 to 1986, and Professor Emeritus from 1987 until his death in 2006. In regard to USGS maps, Dr. Leopold wrote "I tried to devise a way of defining hydrologic criteria for the channels shown on topographic maps and developed some promising procedures. None were acceptable to the topographers, however. I learned that the blue lines on a map are drawn by nonprofessional, low-salaried personnel. In actual fact, they are drawn to fit a rather personalized aesthetic." (1994)

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Appendix B

STATE JURISDICTIONAL INFORMATION

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STATE JURISDICTIONAL INFORMATION

California Department of Fish and Wildlife Regulations

The California Department of Fish and Wildlife (CDFW; Department) regulates alterations or impacts to streambeds or lakes (wetlands) under Fish and Game Code Sections 1600 through 1616 for any private, state, or local government or public utility-initiated projects. The Fish and Game Code Section 1602 requires any entity to notify the Department before beginning any activity that will do one or more of the following: (1) substantially obstruct or divert the natural flow of a river, stream, or lake; (2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or (3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers and streams as well as lakes in the state.

In order to notify the Department, a person, state, or local governmental agency or public utility must submit a complete notification package and fee to the Department regional office that serves the county where the activity will take place. A fee schedule is included in the notification package materials. Under the Permit Streamlining Act (Government Code Sections 65920 et seq.), the Department has 30 days to determine whether the package is complete. If the requestor is not notified within 30 days, the application is automatically deemed to be complete.

Once the notification package is deemed to be complete, the Department will determine whether the applicant will need a Lake or Streambed Alteration Agreement (SAA) for the activity, which will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an SAA is required, the Department will conduct an on-site inspection, if necessary, and submit a draft SAA that will include measures to protect fish and wildlife resources while conducting the project. If the applicant is applying for a regular SAA (less than five years), the Department will submit a draft SAA within 60 calendar days after notification is deemed complete. The 60-day time period does not apply to notifications for long-term SAAs (greater than 5 years).

After the applicant receives the SAA, the applicant has 30 calendar days to notify the Department whether the measures in the draft SAA are acceptable. If the applicant agrees with the measures included in the draft SAA, the applicant will need to sign the SAA and submit it to the Department. If the applicant disagrees with any measures in the draft SAA, the applicant must notify the Department in writing and specify the measures that are not acceptable. Upon written request, the Department will meet with the applicant within 14 calendar days of receiving the request to resolve the disagreement. If the applicant fails to respond in writing within 90 calendar days of receiving the draft SAA, the Department may withdraw that SAA. The time periods described above may be extended at any time by mutual agreement.

After the Department receives the signed draft SAA, the Department will make it final by signing the SAA; however, the Department will not sign the SAA until it both receives the notification fee and ensures that the SAA complies with the California Environmental Quality

Act (Public Resources Code Section 21000 et seq.). After the applicant receives the final agreement, the applicant may begin the project the agreement covers, provided that the applicant has obtained any other necessary federal, state and/or local authorizations.

Water Resource Control Board Regulations

Section 401 Water Quality Certification

Whenever a project requires a federal Clean Water Act (CWA) Section 404 permit or a Rivers and Harbors Act Section 10 permit, it must first obtain a CWA Section 401 Water Quality Certification. The Regional Water Quality Control Board (RWQCB) administers the 401 Certification program. Federal CWA Section 401 requires that every applicant for a Section 404 permit must request a Water Quality Certification that the proposed activity will not violate state and federal water quality standards.

Porter-Cologne Water Quality Control Act

The State Water Resource Control Board (SWRCB) and the RWQCB regulate the discharge of waste to waters of the State via the 1969 Porter-Cologne Water Quality Control Act (Porter-Cologne) as described in the California Water Code (SWRCB 2008). The California Water Code is the State's version of the Federal CWA. Waste, according to the California Water Code, includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal. State waters that are not federal waters may be regulated under Porter-Cologne. A Report of Waste Discharge must be filed with the RWQCB for projects that result in discharge of waste into waters of the State. The RWQCB will issue Waste Discharge Requirements (WDRs) or a waiver. The WDRs are the Porter-Cologne version of a CWA 401 Water Quality Certification.

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Appendix C

JURISDICTIONAL DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/22/16

Applicant/Owner: SANDAG State: CA Sampling Point: 1

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%):

Subregion (LRR): C Lat: 32.84007877060 Long: -117.02305036000 Datum:

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: PFOC-frshwtr/frstd scrb

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes No ✓	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:

Sampling point located in southern riparian forest habitat. Area does not meet Corps wetland criteria or non-wetland Waters of the U.S. criteria. Sampling point located in CDFW riparian habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r=20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	70	X	FACW
2. Salix lasiolepis	5		FACW
3.			
4.			
	75 = Total Cover		
Sapling/Shrub Stratum (Plot size: r=20')			
1. Acer negundo	10	X	FACW
2. Eucalyptus sp.	< 1		UPL
3. Quercus agrifolia	< 1		UPL
4.			
5.			
	10 = Total Cover		
Herb Stratum (Plot size: r=15')			
1. Oenothera elata	14	X	FACW
2. Atriplex prostrata	10	X	FACW
3. Apium graveolens	4		FACW
4. Plantago major	2		FAC
5. Artemisia douglasiana	2		FAC
6. Medicago polymorpha	2		FACU
7. Epilobium ciliatum	1		FACW
8. Helminthotheca echioides	1		FAC
	39* = Total Cover		
Woody Vine Stratum (Plot size: r=15')			
1. continue Herb Stratum: Euphorbia peplus*	1		UPL
2. continue Herb Stratum: Polypogon monspel.*	2		FACW
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Hydrophytic vegetation present.

Photo 15.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100	n/a	n/a	n/a	n/a	sand	
4-12	10YR 3/2	100	n/a	n/a	n/a	n/a	silty clay	loam
12-16	10YR 3/2	100	n/a	n/a	n/a	n/a	sandy lm	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hydric soil absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Two secondary indicators present - wetland hydrology criterion met.

FAC-Neutral test = 8:4 / met

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/22/16

Applicant/Owner: SANDAG State: CA Sampling Point: 2

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): C Lat: 32.83908831770 Long: -117.02234029900 Datum: _____

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: PFOC-frshwtr/frstd scrb

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

Sampling point located in disturbed wetland habitat within a creek. Area meets Corps wetland criteria (and also is CDFW wetland).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r=10')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: r=10')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: r=10')			
1. Ludwigia grandiflora	50	X	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: r=10')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Hydrophytic vegetation present.

Photo 19.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
no pit								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ✓ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil assumed present based on aquic moisture regime/long duration of inundation, coupled with dominance by OBL vegetation. Sampling point located in standing water within a creek bed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 5"

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Two primary indicators and two secondary indicators present - wetland hydrology criterion is met.
Note: aquatic invertebrates = crayfish
FAC-Neutral test = 1:0 / met

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/22/16

Applicant/Owner: SANDAG State: CA Sampling Point: 3

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): creek terrace Local relief (concave, convex, none): concave Slope (%):

Subregion (LRR): C Lat: 32.83725481030 Long: -117.01569162600 Datum:

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: PFOC-frshwtr/frstd scrb

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No	**Is the Sampled Area within a Wetland?** Yes No ✓
Hydric Soil Present?	Yes No ✓	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:

Sampling point located in southern riparian forest habitat upslope of river channel on south side of berm adjacent to the golf course. Area does not meet Corps wetland criteria or non-wetland Waters of the U.S. criteria. Sampling point located in CDFW riparian habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'x30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus racemosa	20	X	FAC
2. Salix gooddingii	35	X	FACW
3. Acer negundo	10		FACW
4.			
	65 = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'x30')			
1. Salix lasiolepis	10	X	FACW
2. Melia azedarach	2		UPL
3.			
4.			
5.			
	12 = Total Cover		
Herb Stratum (Plot size: 10'x30')			
1. Helminthotheca echioides	12	X	FAC
2. Oenothera elata	3		FACW
3. Rosa californica	2		FAC
4. Erigeron canadensis	1		FACU
5. Melilotus albus	1		UPL
6. Ambrosia psilostachya	< 1		FACU
7. Xanthium strumarium	< 1		FAC
8. Raphanus sativus	< 1		UPL
	20 = Total Cover		
Woody Vine Stratum (Plot size: 10'x30')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Hydrophytic vegetation present.

Photos 24-25.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/2	100	n/a	n/a	n/a	n/a	loam	
10-16	10YR 3/2	100	n/a	n/a	n/a	n/a	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Hydric soil absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Two secondary indicators of wetland hydrology observed, criterion met.

FAC-Neutral test = 4:5 / not met

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/23/16

Applicant/Owner: SANDAG State: CA Sampling Point: 4

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): low terrace adjacent to creek Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR): C Lat: 32.83774888350 Long: -117.00783184300 Datum: _____

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: PFOC-frshwtr/frstd scrb

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

Sampling point located in southern riparian forest habitat on a low creek terrace. Area meets Corps wetland criteria (and also is CDFW wetland).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 8'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 8'x20')			
1. Acer negundo	5	X	FACW
2. Washingtonia robusta	1		FACW
3.			
4.			
5.			
	6 = Total Cover		
Herb Stratum (Plot size: 8'x20')			
1. Apium graveolens	10	X	FACW
2. Cyperus sp.	10	X	FACW
3. Plantago major	10	X	FAC
4. Melilotus albus	5		UPL
5.			
6.			
7.			
8.			
	35 = Total Cover		
Woody Vine Stratum (Plot size: 8'x20')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Hydrophytic vegetation present.

Note: Ground surface covered in leaf litter and willow "fluff" from the seed heads.
Photo 32.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3/3	100	n/a	n/a	n/a	n/a	loamy	sand
7-12	10YR 3/1	100	n/a	n/a	n/a	n/a	sandy	loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✓ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soil present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ✓ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ✓ Sediment Deposits (B2) (Riverine)
- ✓ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): > 6"

Water Table Present? Yes ✓ No ___ Depth (inches): 8"

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 1"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Four primary indicators and three secondary indicators present - wetland hydrology criterion is met.

FAC-Neutral test = 4:1 / met

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/23/16

Applicant/Owner: SANDAG State: CA Sampling Point: S

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): creek bank / slope Local relief (concave, convex, none): concave Slope (%):

Subregion (LRR): C Lat: 32.83779488340 Long: -117.00780058600 Datum:

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: PFOC-frshwtr/frstd scrb

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No	Is the Sampled Area within a Wetland? Yes No ✓
Hydric Soil Present?	Yes	No ✓	
Wetland Hydrology Present?	Yes ✓	No	

Remarks:

Sampling point located in southern riparian forest habitat upslope of river channel on south side of berm adjacent to the golf course. Area does not meet Corps wetland criteria or non-wetland Waters of the U.S. criteria. Sampling point located in CDFW riparian habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 4'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 4'x20')			
1. Acer negundo	5	X	FACW
2.			
3.			
4.			
5.			
	5 = Total Cover		
Herb Stratum (Plot size: 4'x20')			
1. Oenothera elata	10	X	FACW
2. Plantago major	7	X	FAC
3. Cyperus eragrostis	5		FACW
4. Apium graveolens	5		FACW
5. Erigeron canadensis	3		FACU
6.			
7.			
8.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: 4'x20')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

Prevalence Index is ≤3.0[1]

Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Hydrophytic vegetation present.

Photos 33-35.

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	n/a	n/a	n/a	n/a	loam	
5-13	10YR 3/2	98	10YR 5/6	2	C	M	loam	does not meet any criterion

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicator met / hydric soil absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ✓ Sediment Deposits (B2) (**Riverine**)
- ✓ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Three secondary indicators of wetland hydrology present / wetland hydrology criterion met.

FAC-Neutral test = 4:1 / met

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: SD River Trail - Carlton Oaks Golf Course Sgmt City/County: Santee&San Diego/San Diego Sampling Date: 6/23/16

Applicant/Owner: SANDAG State: CA Sampling Point: 6

Investigator(s): S. Nigro & T. Rachels Section, Township, Range: unsectioned lands in El Cajon Land Grant

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%):

Subregion (LRR): C Lat: 32.84320940390 Long: -117.00071905700 Datum:

Soil Map Unit Name: Riverwash (Soil Map Symbol Rm) NWI classification: not on NWI map

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No	Is the Sampled Area within a Wetland? Yes No ✓
Hydric Soil Present?	Yes	No ✓	
Wetland Hydrology Present?	Yes	No ✓	

Remarks:

Sampling point located in southern riparian forest habitat. Area does not meet Corps wetland criteria or non-wetland Waters of the U.S. criteria. Sampling point located in CDFW riparian habitat.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: r=15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus fremontii	10	X	FAC
2.			
3.			
4.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: r=15')			
1. Populus fremontii	15	X	FAC
2. Baccharis salicifolia	10	X	FAC
3. Salix lasiolepis	5		FACW
4. Isocoma menziesii	10	X	FAC
5.			
	40 = Total Cover		
Herb Stratum (Plot size: r=10')			
1. Juncus acutus ssp leopoldii	30	X	FACW
2. Anemopsis californica	30	X	OBL
3. Juncus mexicanus	10		FACW
4. Melilotus albus	10		UPL
5. Polypogon monspeliensis	5		FACW
6. Cortaderia sp.	5		FACU
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: r=10')			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

__ Prevalence Index is ≤3.0[1]

__ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks:

Hydrophytic vegetation present.

Photos 43-44.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3	100	n/a	n/a	n/a	n/a	loam	
10-14	10YR 4/3	95	n/a	n/a	n/a	n/a	sandy lm	
10-14	10YR 2/1	5	n/a	n/a	n/a	n/a	sandy lm	sandy organic material/staining
14-18	10YR 3/3	100	n/a	n/a	n/a	n/a	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (LRR C)
- ___ 1 cm Muck (A9) (LRR D)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR C)
- ___ 2 cm Muck (A10) (LRR B)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No hydric soil indicator met / hydric soil absent.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (Nonriverine)
- ___ Sediment Deposits (B2) (Nonriverine)
- ___ Drift Deposits (B3) (Nonriverine)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (Riverine)
- ___ Sediment Deposits (B2) (Riverine)
- ___ Drift Deposits (B3) (Riverine)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No primary and only one secondary indicator of wetland hydrology present / wetland hydrology criterion not met.

FAC-Neutral test = 5:2 / met

Appendix D

SAMPLING POINT AND SITE PHOTOS



Sampling Point 1. Looking west at southern riparian forest in the western portion of the study area. Sampling point is within CDFW jurisdictional habitat.



Sampling Point 2. Looking south at disturbed wetland in the western portion of the study area. Sampling point is within wetland Waters of the U.S. and CDFW jurisdictional habitat.

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Sampling Point and Site Photos

JURISDICTIONAL DELINEATION REPORT FOR THE
SAN DIEGO RIVER TRAIL – CARLTON OAKS SEGMENT PROJECT
Appendix D



Sampling Point 3. Looking east at southern riparian forest along the San Diego River in the central portion of the study area. Sampling point is within CDFW jurisdictional habitat.



Sampling Point 4. Looking north at southern riparian forest along the San Diego River in the central portion of the study area. Sampling point is within wetland Waters of the U.S. and CDFW jurisdictional habitat.

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Sampling Point and Site Photos

JURISDICTIONAL DELINEATION REPORT FOR THE
SAN DIEGO RIVER TRAIL – CARLTON OAKS SEGMENT PROJECT
Appendix D



Sampling Point 5. Looking north at southern riparian forest in the central portion of the study area, just upslope of Sampling Point 4. Sampling point is within CDFW jurisdictional habitat.



Sampling Point 6. Looking north at southern riparian forest in the eastern portion of the study area. Sampling point is within CDFW jurisdictional habitat.

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Sampling Point and Site Photos

JURISDICTIONAL DELINEATION REPORT FOR THE
SAN DIEGO RIVER TRAIL – CARLTON OAKS SEGMENT PROJECT
Appendix D



Photo 1. Looking south at freshwater marsh and southern willow scrub along Sycamore Creek in the western portion of the study area.



Photo 2. Looking east at the existing dirt trail on top of the berm in the western portion of the study area.

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Photo 3. Looking east at southern willow scrub in the central portion of the study area. This habitat is north of the berm that abuts the San Diego River.



Photo 4. Looking east at the existing dirt trail on top of the berm in the central portion of the study area.

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Photo 5. Looking west at the San Diego River channel and associated riparian forest habitat in the central portion of the study area.



Photo 6. Looking southwest at a stand of southern riparian forest adjacent to the golf course in the eastern portion of the study area.

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Photo 7. Looking north at a small stand of southern riparian forest east of the golf course maintenance building in the eastern portion of the study area.



Photo 8. Looking north at the existing San Diego River Trail just east of the golf course.

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Photo 9. Looking east at the existing San Diego River Trail just east of the golf course.



Photo 10. Looking south at riparian forest along the existing San Diego River Trail in the eastern portion of the study area.

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Photo 11. Looking east at a small bridge crossing of non-wetland Waters of the U.S. and CDFW riparian habitat in the eastern portion of the study area.



Photo 12. Looking east at the undeveloped trail below the Carlton Hills Boulevard bridge in the eastern portion of the study area.

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Photo 13. Looking northwest at disturbed southern riparian forest in Mast Park, just east of Carlton Hills Boulevard.



Photo 14. Looking east at an existing dirt trail in Mast Park in the eastern portion of the study area.

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CULTURAL RESOURCES TECHNICAL REPORT FOR THE SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT, CITIES OF SAN DIEGO AND SANTEE, SAN DIEGO COUNTY, CALIFORNIA

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March 2017

San Diego Association of Governments

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EXECUTIVE SUMMARY

The purpose of this study is to determine the potential effects on cultural resources during construction of the San Diego River Trail (SDRT) Carlton Oaks Golf Course Segment located in the Cities of San Diego and Santee, San Diego County, California. The San Diego Association of Governments (SANDAG) proposes to construct a Class I bikeway and related minor physical improvements over an approximately two-mile long segment between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course. The project area includes both the direct Area of Potential Effects (APE) and indirect APE. The direct APE was established as the project footprint, which includes all areas of permanent and temporary impacts. The indirect APE was established as the legal parcel on which the direct APE is located. The direct APE measures 17 acres and the indirect APE measures 262 acres. The depth of excavation along the entire bike path would be approximately 2.5 feet. The installation of a retention wall would require approximately five feet of excavation along the east slope of West Hills Parkway where the bike path will connect to West Hills Parkway. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet. SANDAG is the Lead Agency under the California Environmental Quality Act.

A cultural resources records search was completed by the South Coastal Information Center (SCIC) at San Diego State University for a 1.0 mile radius around the indirect APE on November 17, 2016. The record search indicates that no cultural resources have been previously recorded within the direct APE; however, six prehistoric archaeological sites are located within the indirect APE. Outside of the indirect APE but within the one-mile record search radius, a total of 54 cultural resources have been previously documented and consist of 31 prehistoric archaeological sites, 11 prehistoric isolates, two multicomponent sites, four historic archaeological sites, two historic isolates, and four historic resources.

An intensive pedestrian survey of the indirect and direct APEs was conducted on November 22, 2016. An existing dirt path, dirt berm, and portions of the landscaped and paved Carlton Oaks Golf Course are located within the direct APE. The survey was negative for cultural resources within the direct APE. Of the six previously recorded resources within the indirect APE, four were re-identified during the survey (P-37-005050, P-37-008594, P-37-009243, and P-37-030866). The other two resources, P-37-000205 and P-37-010148, could not be re-identified during this survey.

The direct APE has been highly disturbed as is evident by the presence of the existing dirt trail, dirt berm, and landscaping for the Carlton Oaks Golf Course. Ground disturbance for this portion of the project is anticipated to be approximately 2.5 feet. The potential for buried archaeological deposits within 2.5 feet is low due to the disturbed soils. The potential for buried archaeological

deposits under the Carlton Hills Boulevard bridge within 3 feet in is low due to the disturbed soils. One area of deeper excavation is planned for the installation of a retention wall along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. This feature would require approximately 5 feet of excavation. The potential for buried archaeological deposits within the 5 feet is low because the excavation will be within a fill condition.

The proposed project would not result in adverse impacts to any of the previously recorded cultural resources located within the indirect APE as no project activities are planned within the prehistoric sites' boundaries.

While the potential for buried archaeological deposits is low for this project due to the minimal depth of excavation within disturbed soils, the project vicinity is considered sensitive for prehistoric archaeological sites based on the number of prehistoric resources previously recorded within the indirect APE and a one-mile radius. The following recommendation is made in the event that ground disturbing activities extend into native soils.

It is recommended that prior to project implementation, all construction personnel participate in cultural resources sensitivity training conducted by a qualified archaeologist. The training will detail what types of cultural resources might be encountered and the procedure to follow if cultural resources are discovered inadvertently. The training will include a discussion on the importance of, and the legal basis for, the protection of significant archaeological resources. All personnel will sign that they understand the material presented and be issued a hard hat sticker to verify training. In addition it is recommended that a qualified archaeologist be retained on an on-call basis to respond to any unanticipated discoveries.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist can evaluate it. If human remains are unearthed during excavation, State Health and Safety Code Section 7050.5 states "there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered... [has made the appropriate assessment, and] …recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code."

Further in accordance with California Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact

the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the health and safety code have been met.

INTRODUCTION

The purpose of this study is to determine the potential effects on cultural resources during construction of the San Diego River Trail (SDRT) Carlton Oaks Golf Course Segment (proposed project) located in the Cities of San Diego and Santee, San Diego County, California (Figure 1). The proposed project would consist of a Class I bikeway and related minor physical improvements over an approximately two-mile long segment between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

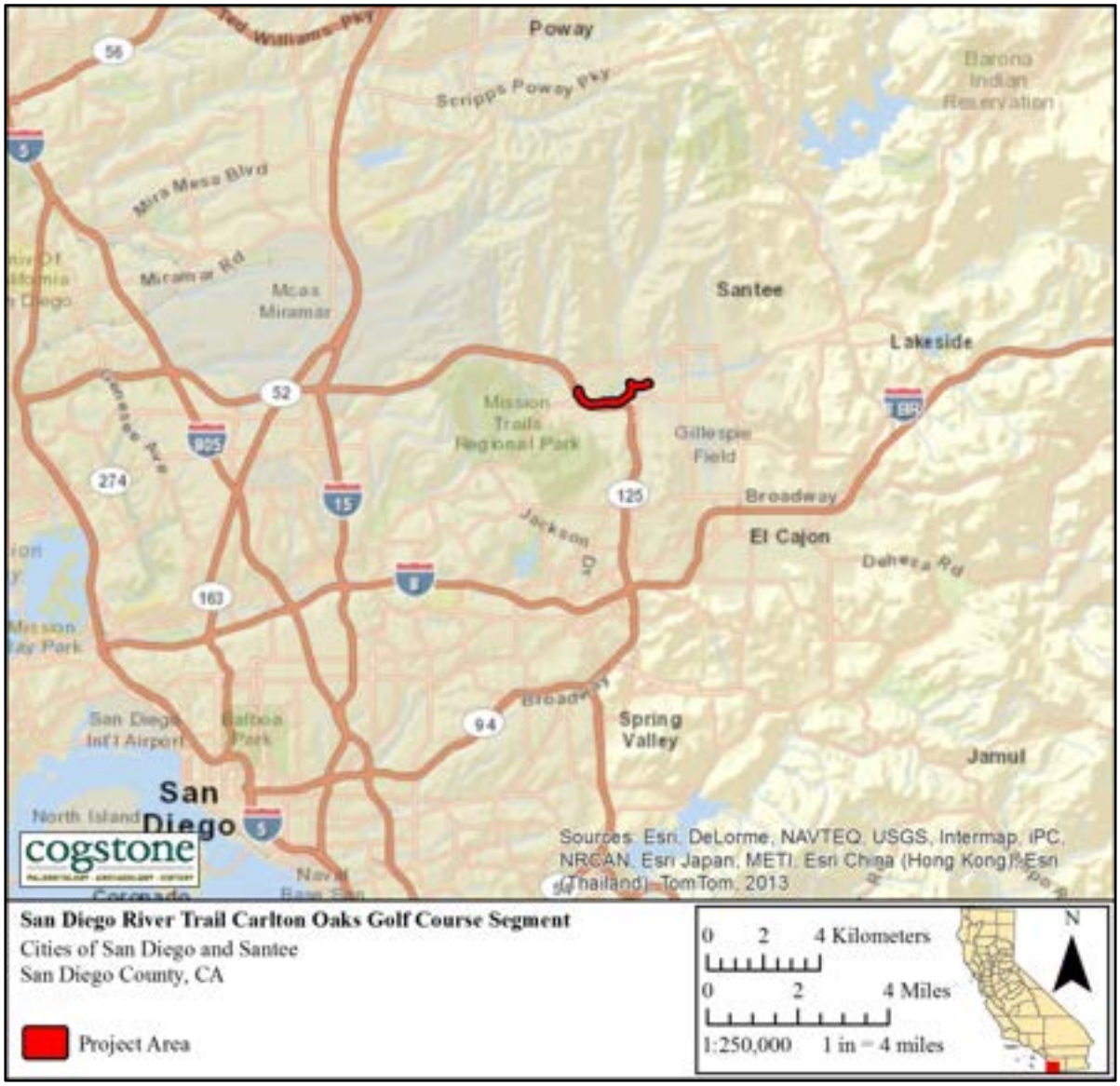


Figure 1. Project Vicinity

PROJECT DESCRIPTION AND LOCATION

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard Bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

The project is located in the El Cajon and La Mesa 7.5’ USGS topographic quadrangles within Sections 29 and 30 of Township 15 South, Range 1 West, San Bernardino Base Meridian (Figure 2). Generally, the eastern half of the bike path is located in the City of Santee and the western half is located in the City of San Diego.

The project area includes both the direct Area of Potential Effects (APE) and indirect APE. The

direct APE was established as the project footprint, which includes all areas of permanent and temporary impacts. The indirect APE was established as the legal parcel in which the direct APE is located. The direct APE measures 17 acres and the indirect APE measures 262 acres (Figures 3A-3E).

The depth of excavation along the entire bike path would be approximately 2.5 feet. The depth of excavation for the installation of a retention wall would be approximately five feet along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. The excavation of the retention wall is expected to be within a fill condition. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet, also within a fill condition.



Figure 2. Project Location

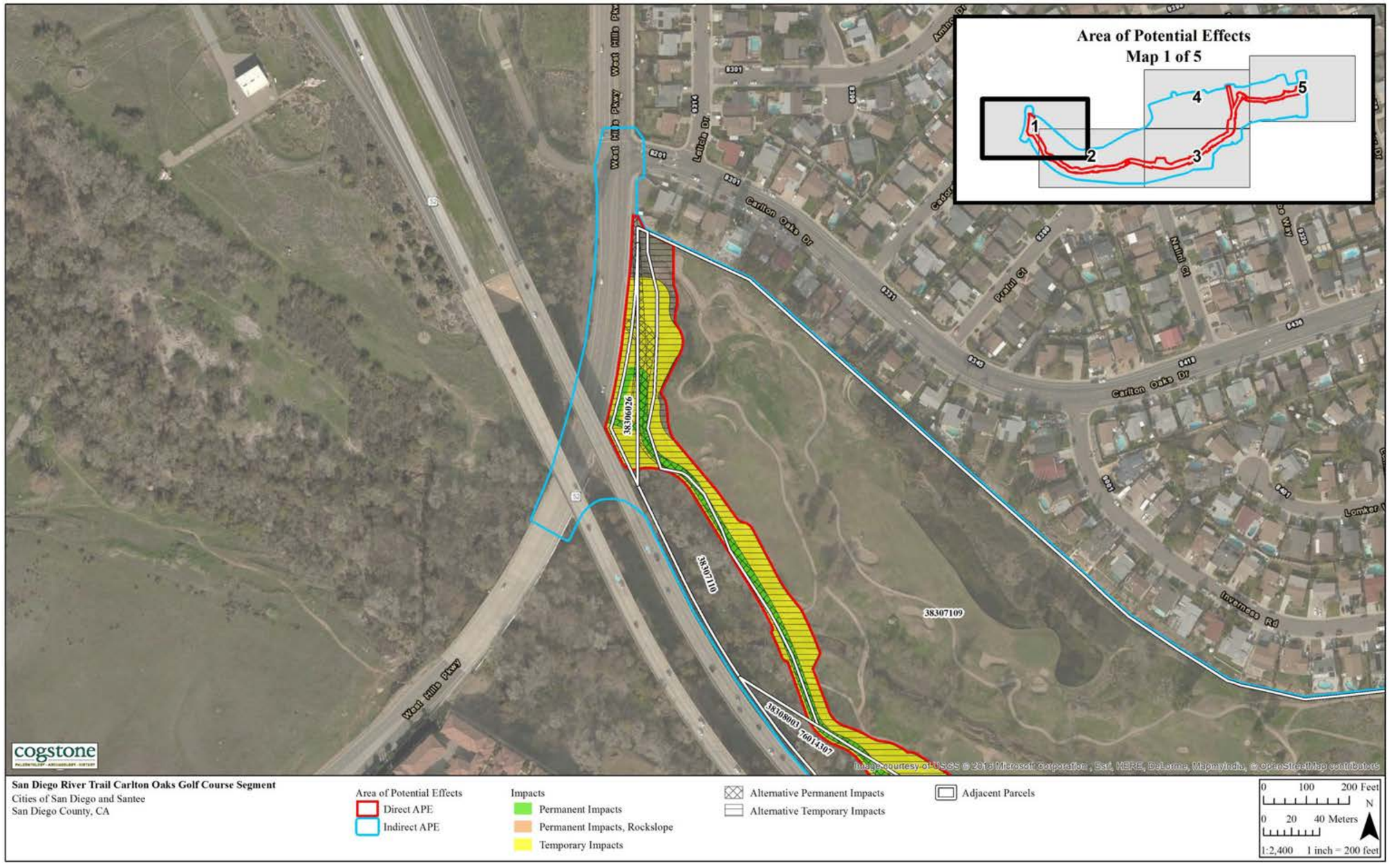


Figure 3A. Project Aerial Map (2010) Showing APE Boundary, Map 1 of 5

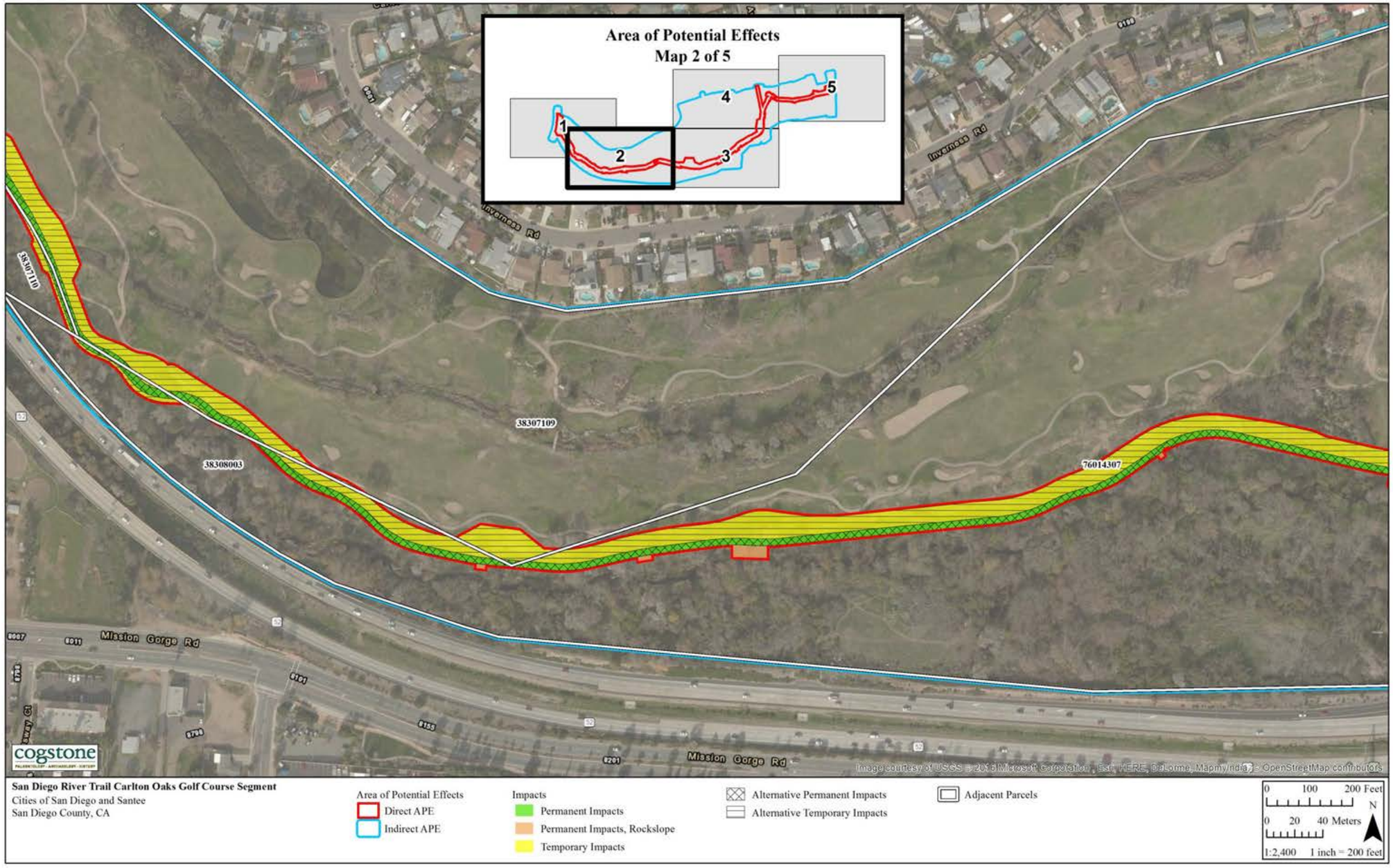


Figure 4B. Project Aerial Map (2010) Showing APE Boundary, Map 2 of 5

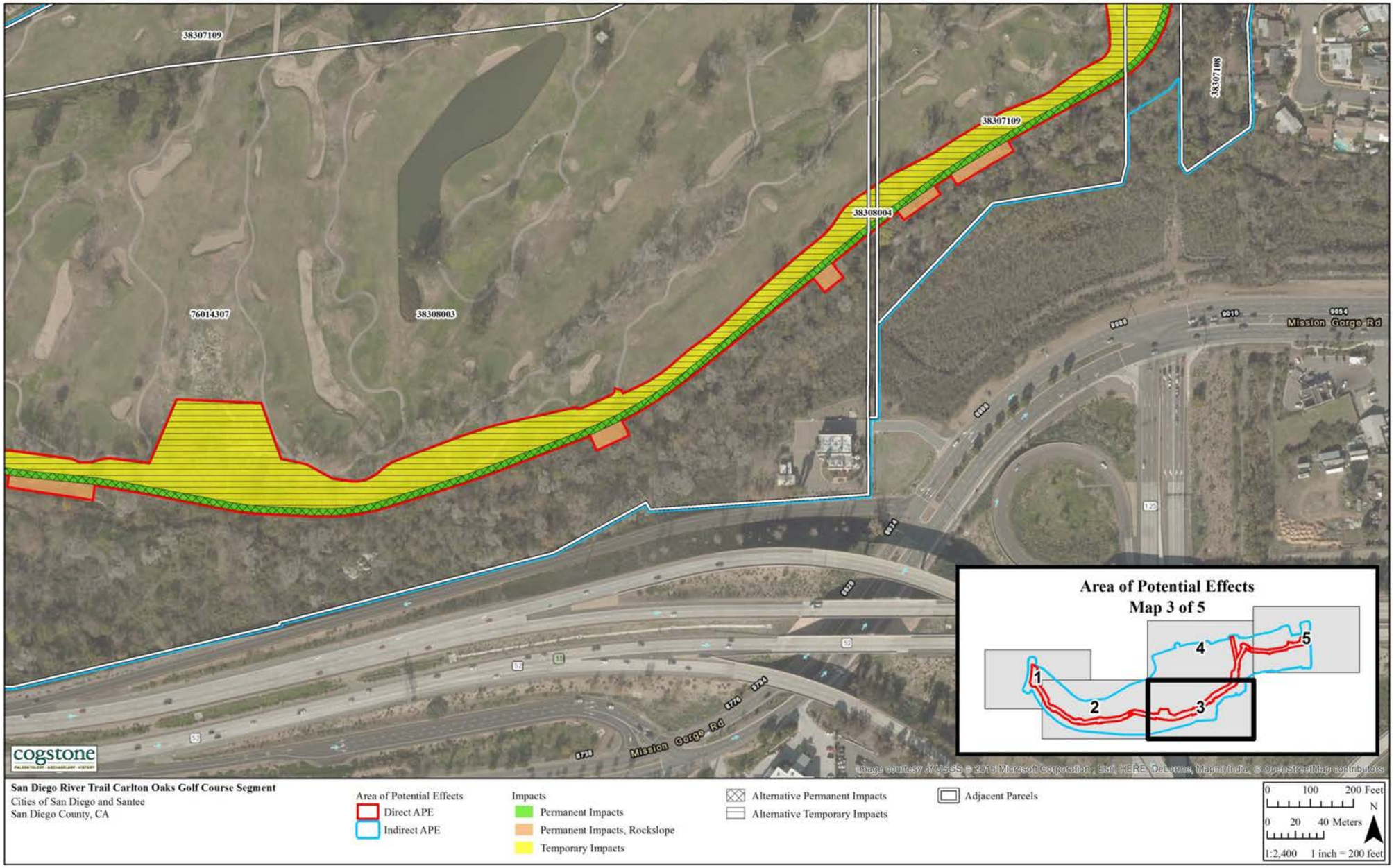


Figure 5C. Project Aerial Map (2010) Showing APE Boundary, Map 3 of 5

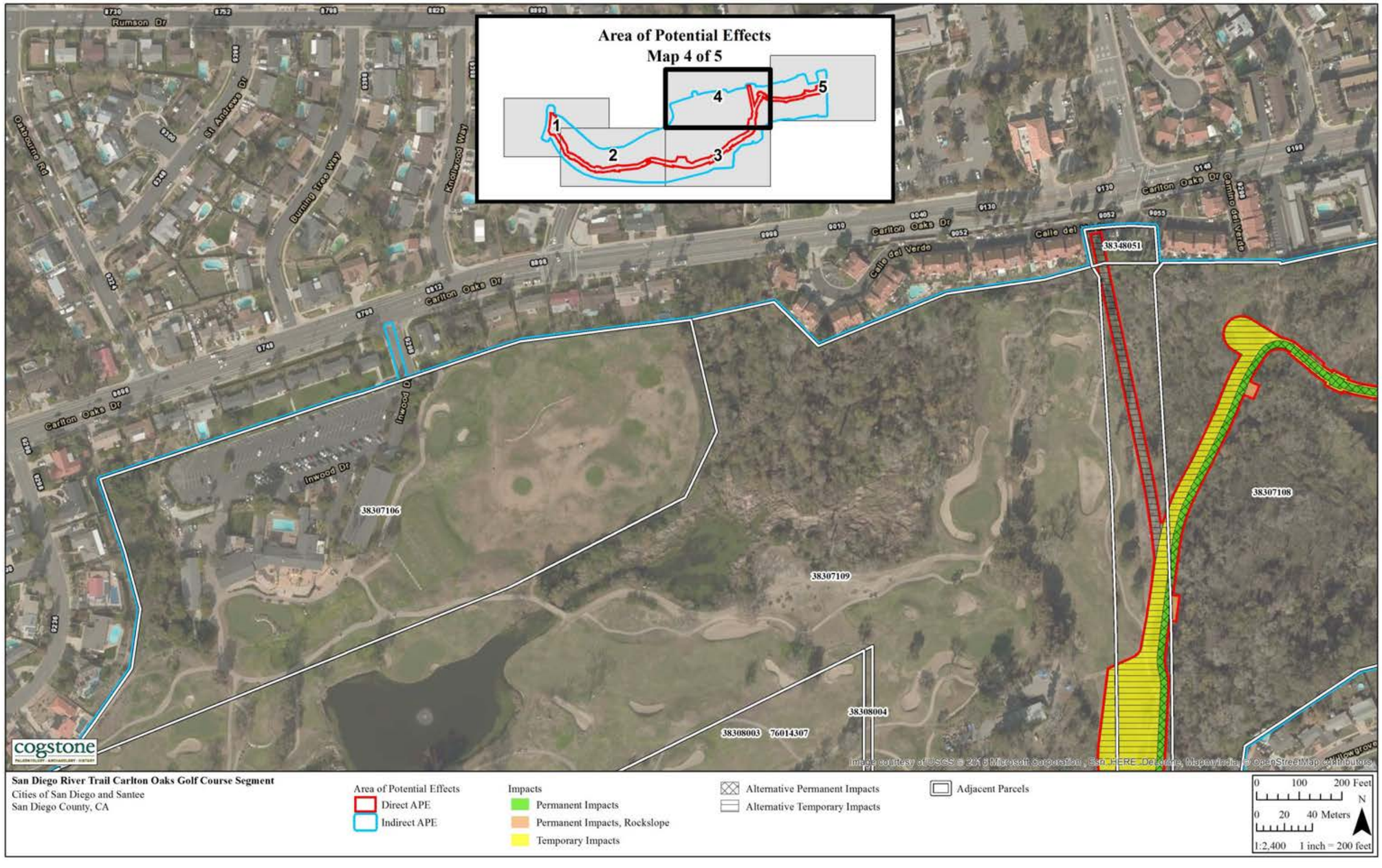


Figure 6D. Project Aerial Map (2010) Showing APE Boundary, Map 4 of 5

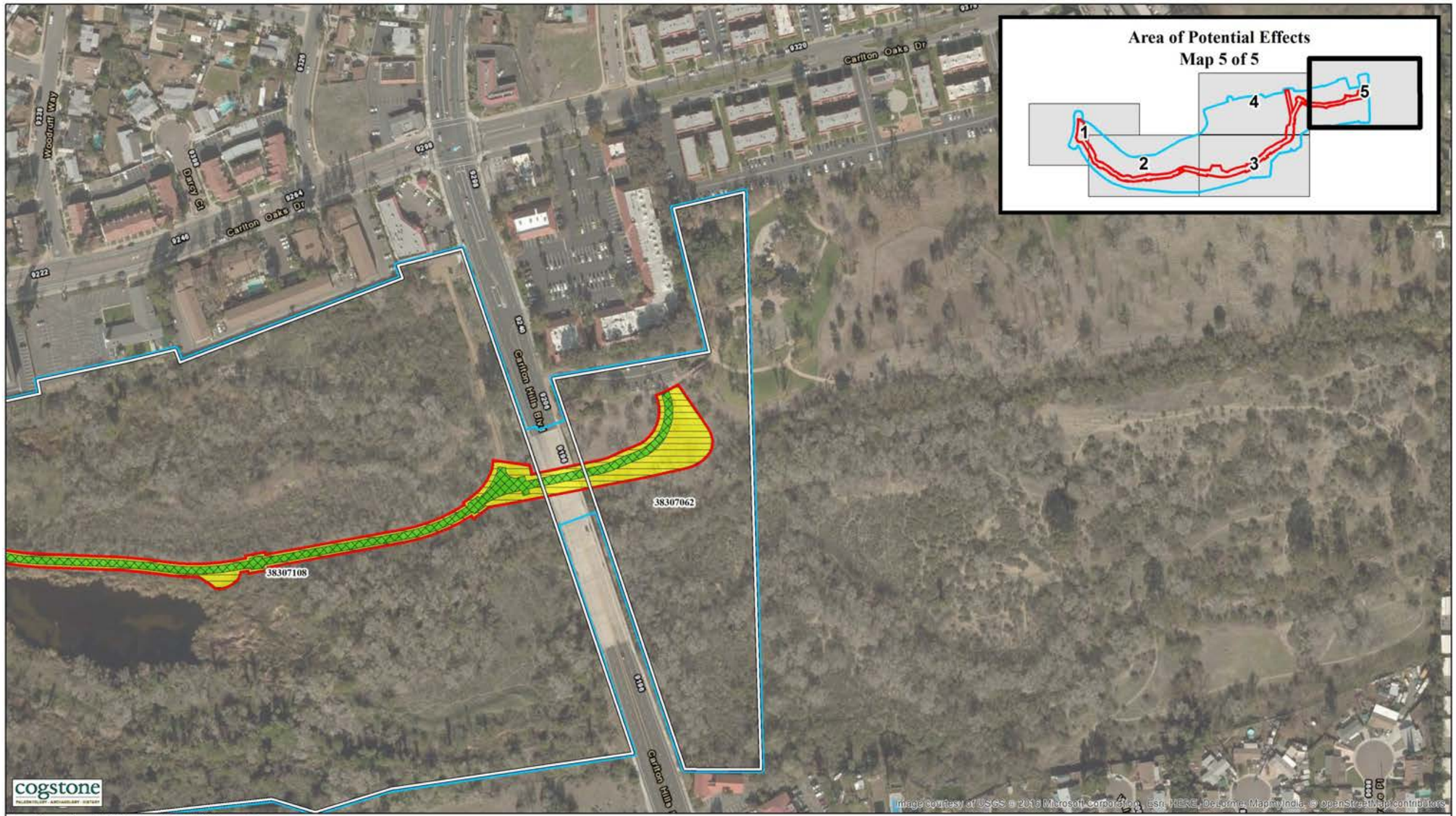


Figure 7E. Project Aerial Map (2010) Showing APE Boundary, Map 5 of 5

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted this study. All personnel meet the Secretary of the Interior's Standards for Archaeology and Historic Preservation (36 CFR Part 61). Qualifications of Cogstone personnel are provided in Appendix A.

Desireé Martinez, M.A. served as the Project Manager, managed all work, and edited the report. Martinez has an M.A. in Anthropology from Harvard University and is a qualified archaeologist with 21 years of experience in California Archaeology.

Molly Valasik served as Principal Investigator and lead author. Ms. Valasik is a Registered Professional Archaeologist (RPA) and holds a B.A. in Anthropology from Ohio State University as well as an M.A. in Anthropology from Kent State University in Ohio. Ms. Valasik has over seven years of experience in California archaeology.

Sherri Gust served as author and prepared the background section of the report. Ms. Gust has a B.S. in Anthropology from the University of California at Davis and an M.S. in Anatomy from the University of Southern California and more than 35 years of experience and is an RPA.

André Simmons served as Geographic Information Systems (GIS) Analyst for the project. Mr. Simmons is a RPA and holds B.A. degrees in Anthropology and History as well as an M.A. in Anthropology (Anthropological Archaeology) from California State University, Fullerton. He has over six years of experience in California Archaeology.

Michelle Courtney conducted the survey. Ms. Courtney holds a B.S. in Anthropology and is a certified City of San Diego archaeologist with 16 years of experience in Southern California Archaeology. Holly Duke and Megan Wilson prepared portions of this report. Ms. Duke holds a B.A. in Archaeology from Simon Fraser University in Canada and has over four years of experience in California Archaeology. Ms. Wilson holds a M.A. in Anthropology from California State University, Fullerton, in an RPA and has over nine years of experience in California Archaeology. Qualifications of key project personnel are provided (Appendix A).

REGULATORY ENVIRONMENT

The project must meet the requirements of the California Environmental Quality Act (CEQA). The following discussion of applicable state laws has been excerpted and reordered from the California Department of Transportation's (Caltrans) on-line Environmental Handbook

(http://www.dot.ca.gov/ser/envhand.htm); more specifically, this information summarizes the regulatory section of Exhibit 3 of Volume 2, Cultural Resources (2001).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) (PRC § SECTION 21000 ET SEQ.)

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities" (Caltrans 2001). It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. In the event that a project is determined to have a significant environmental effect, the act requires consideration of mitigation measures and alternatives that would avoid or substantially lessen the significant effect. CEQA includes historic and archaeological resources as integral features of the environment.

TRIBAL CULTURAL RESOURCES

In 2015 CEQA was amended and established that “[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (Pub. Resources Code, § 21084.2). A “tribal cultural resource” is defined as a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a California Native American Tribe and is either:

(1) listed, or determined to be eligible for listing, on the national, state, or local register of historic resources, or
(2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource.

To help determine whether a project may have such an effect, the lead agency must consult with any California Native American Tribe that requests consultation and is traditionally and culturally affiliated with the geographic location of a proposed project. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (Pub. Resources Code, § 21080.3.1).

In applying those criteria, a lead agency must consider the value of the resource to the tribe. For example, in considering the criterion that a resource is “associated with the lives of persons important in our past,” a lead agency would ask whether the resource is associated with the lives of persons important to the relevant tribe’s past. That determination must be supported with substantial evidence.

If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. Public Resources Code §20184.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES (PRC § 5024.1)

PRC § 5024.1 establishes the California Register of Historical Resources. Historic resources encountered during the Project may be eligible for inclusion on the CRHR. The register is a listing of all properties considered to be significant historical resources in the state. The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks from No. 770 on. The criteria for listing are the same as those of the National Register. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources which must be given consideration under CEQA (see above). Other resources, such as resources listed on local registers of historic registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register is not automatic.

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historic integrity and are historically significant at the local, state or national level under one or more of the following four criteria:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2) It is associated with the lives of persons important to local, California, or national history;

3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or

changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof. Consequently local project proponents as well as state entities are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

BACKGROUND

ENVIRONMENTAL SETTING

The project area is located in the Cities of San Diego and Santee within the County of San Diego and is situated in the San Diego area of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges are the result of the Pacific Plate and the North American Plate grinding past each other and forming north-south trending mountain ranges where the two plates collide along the San Andreas Fault Zone. The Peninsular Range Province extends from Mount San Jacinto in the north, to Baja California in the south. The project area is characterized as a wide-open valley floor surrounded by low, boulder-strewn hills. The proposed project would be located just north of the San Diego River. The River flows approximately 52 miles from the Volcan Mountains to the Pacific Ocean in Mission Bay.

Today’s Mediterranean-like climate is characterized by warm, dry summers and cool, moist winters, with rainfall predominantly falling between November and May. Climatic conditions in this region varied substantially during prehistoric times. Paleoclimatic data based on pollen from coastal sites indicate that there was a dramatic increase in both annual temperature and precipitation between 8000 and 7000 Before Present (B.P.), which would have led to a rich, local marsh habitat. By 7000 B.P., sea levels were 10 to 15 meters below current levels, and the shore

line was at least 500 meters farther off shore than it is today (Altschul et al. 2007). The project area is within low-lying land, close to the ocean and to marshes, both of which would have offered people varied food and other resources in the past.

Natural vegetation in this portion of San Diego County includes plants from the Coastal Sage Scrub Plant Community, the Chaparral Plant Community, and marsh and wetland plants. Plants in these communities consist of coastal sagebrush, buckwheat, poison oak, lemonade berry, cacti and yucca, and would have been used for food and medicine in a prehistoric context. Trees in the area include sycamores, willows, cottonwoods, alders and maples.

PREHISTORIC SETTING

Prehistoric cultural chronology for the San Diego region subsequent to approximately 12,000 years ago is divided into three broad temporal periods: Paleoindian (San Dieguito Complex), Archaic (La Jolla Complex/Encinitas Tradition), and Late Prehistoric. The sequence is based on syntheses by M. Rogers (1939, 1945, 1966); Wallace (1955, 1978); Moriarty (1966); Warren (1967, 1968) and True (1980), among others. There is no accepted evidence of occupation in this region prior to 12,000 years ago.

The three prehistoric periods defined for the prehistoric cultural chronology of the San Diego area are as follows:

- San Dieguito Complex. This period dates from 9,030 to 8,000 years B.P. Sites from this period have been identified as part of the Western Lithic Co-Tradition or part of the Western Pluvial Lakes Tradition (Davis et al. 1969; Bedwell 1970). Occupants of most sites dating to this time period made use of coastal and inland resources. Artifacts include bifaces, knives, scrapers, cobble tools, milling tools and bone tools, used to process plants, shellfish, fish, bird and small and large mammals.
- La Jolla Complex/Encinitas Tradition. This period dates from 8,600 to 1,300 years B.P. Doughnut stones, discoidals, stone balls, plummets, Elko-eared points and stone, shell and bone beads appear in this period and shellfish gathering decreases. Hunting tools initially consisted of the atlatl and dart but quickly advanced to bow and arrow. Most sites were located in coastal areas.
- Late Prehistoric. This period dates from 1,300 years B.P. to historic contact. The cultures are divided into two groups: “San Luis Rey” (Shoshonean) in northern San Diego County and “Kumeyaay” (Yuman) in southern San Diego County. Sites from this period include ceramics, although Cuyamaca sites have a variety of type artifacts, such as pipes and effigies. Use of other traditional tools continues; marked differences between the two groups include Cuyamaca clay-lined hearths and cemeteries separate from living areas.

ETHNOGRAPHY

The project area is located within the historical territory of the Kumeyaay whose tribal territory extended as far north as the San Luis Rey River. The Kumeyaay were historically referred to as the Diegueño for their association with the Mission San Diego de Alcalá. The Takic-speaking Luiseño and Cahuilla lived to the north of the Kumeyaay, and other tribes speaking languages belonging to the Yuman language family were located to the east and to the south (Loumala 1978). The Kumeyaay can be divided into two regional groups separated by the San Diego River. The northern group is known as the Ipai and the southern group is known as the Tipai. The project area lies within the traditional territory of the Tipai group.

The Kumeyaay were organized into autonomous bands which usually occupied a main village and several smaller habitation sites. The Tipai regional group had a village called *Sinyeweche* on the San Diego River within the present-day city of Santee. Communities disbanded seasonally and established smaller groups of between 200 and 1,000 people in order to gather, process and store resources. Subgroups spoke individual dialects and often intermarried (Royo 1999).

As typical California seasonal hunters and gatherers, the Kumeyaay diet consisted mainly of plant foods, especially acorns, but also various other seeds and bulbs. This was supplemented by small game, including mammals and reptiles, and coastal inhabitants also had access to fish, shellfish and sea mammals (Loumala 1978). Plants were also utilized for medicinal and ceremonial, as well as utilitarian purposes. The medicinal use of plants covered a wide range of ailments, including European-introduced diseases such as syphilis, small pox and tuberculosis (Gallegos et al. 1998). Ceremonial usage included tattoos, girls' puberty ceremonies and rock art. A variety of objects were manufactured with plant materials, including houses, granaries, baskets, nets, adhesives, clothing and soaps (Gallegos et al. 1998). The Kumeyaay maintained extensive trade networks as far east as the Colorado River, moving acorns, dried seafood and seashells eastward and bringing salt, seeds and mesquite beans west (Loumala 1978).

HISTORIC SETTING

EXPLORATION

The earliest explorations of the San Diego area began in 1542, when Juan Rodríguez Cabrillo and his party landed near Point Loma. Cabrillo had been tasked with the exploration of the interior of the western United States by the Spanish monarch. Interaction with the Kumeyaay was initiated, but overall little attention was given to California until the 1700s.

Spanish settlement of the San Diego area began in 1769 when the Spanish developed plans to build four presidios (forts), and three towns along the California coastline stretching from San Diego northward to Monterey. The town sites, established between 1777 and 1797, included present-day Los Angeles, San Jose and a small town near Santa Cruz, named Branciforte; while the presidios were established at San Diego, Santa Barbara, Monterey and San Francisco. Under Spain, the "borderlands were colonized as defenses against the intrusion of the English, French, Dutch, and Russians, with the Manila trade an important item for protection in California. They were held by two typical institutions: the mission and the presidio" (Bolton 1913; 1921; 1930 as cited in Aviña 1976).

Mission San Diego Alcalá was also founded in 1769, the first of twenty-one Franciscan missions built along the coast on the El Camino Real, from San Diego to Sonoma. The goals of the missions were tri-fold: they helped establish a Spanish presence on the west coast, allowed for a means to Christianize the native peoples, and served to exploit the native population as laborers. The missionaries, or padres, would essentially serve as a mayor, or head of the town. The Kumeyaay socio-political structure was severely disrupted by the Mission, especially those living closest to the grounds (Loumala 1978).

THE SPANISH (1776-1820) AND MEXICAN RANCHO ERA (1821-1847)

The arrival of the Spanish missionaries brought about prevailing changes for the Native Americans, including high mortality rates and social changes due to the introduction of European diseases and customs (e.g., European farming methods) (Dobyns 1983; Walker and Hudson 1989). Due to the high mortality rates, many Native American villages were abandoned, with inhabitants fleeing to the missions.

The Kumeyaay population decreased due to disease, revolts, and changes to their traditional ways of life. The San Diego Mission however, was unique in that it allowed neophytes to move freely between the mission and traditional villages in order to hunt and gather food for the struggling mission. This allowed the Kumeyaay to experience a smaller population decline than Native Americans at other California missions. Those who did not return to the mission however, were hunted as criminals (Carrico 2008).

Mexico gained independence from Spain in 1821 taking control of the lands Spain once held. The Secularization Act of 1833 transferred much of the mission lands to political appointees. Between 1840 and 1846, the Governors of California, Juan B. Alvarado, Manuel Micheltorena and Pio Pico, made a series of land grants, transferring Mission properties to private ownership (Cowan 1977; Ohles 1997). Ranches and farms were established throughout the greater San Diego area including Rancho El Cajon of which the current project area is located.

STATEHOOD

In 1846, the Mexican-American war broke out in part because of American excursions into California. In 1847, General Andrés Pico and John C. Frémont signed the Articles of Capitulation, ending hostilities between the United States and Mexico. The U.S. and Mexico signed the Treaty of Guadalupe Hidalgo, which resulted in Mexico ceding the lands of present-day California, New Mexico, and Texas to the U.S. for $15 million (Fogelson 1993:10). Within two years of the Treaty of Guadalupe Hidalgo, California applied for admission as a state.

The County of San Diego was established in 1850, the same year as the City of San Diego. A wharf was built by business partners William Heath Davis and Alonzo Horton shortly after the County was established, and the U.S. government built supply warehouses. Davis, a businessman from San Francisco, lost his wealth in a fire and development in San Diego slowed. However in 1867, Horton purchased 960 acres on the waterfront, which was established as the New San Diego. The City population tripled over the next 20 years and reached 35,000 by the 1870s, due to gold rushes, land booms and developments in transportation (San Diego History Center 2014). A railroad connected the City to Barstow to San Diego, but slow economic development in San Diego caused the population to drop to approximately 16,150 by 1890 as people moved to Los Angeles (San Diego History Center 2014).

PROJECT AREA HISTORY

The Spanish parceled the San Diego region into land grants, which they gave to Spanish soldiers for their services. The soldiers later sold the land to American settlers, one of whom was George A. Cowles. Cowles was a prominent rancher and one of the early business leaders in San Diego. He and his wife, Jennie Blodgett Cowles, made several large purchases of ranch land in the El Cajon Valley in 1875. They began ranching two years later in 1877 and used the land to develop vineyards. Cowles also introduced pomegranate and magnolia trees to the area. By the time of his death in 1887 their estate totaled approximately 4,000 acres (City of Santee: 2014).

The City of Santee was originally founded with the name Cowleston after Cowles. When Cowles died in 1887, his widow married Milton Santee in 1890. Santee was a 19th century civil engineer, surveyor, miner, real estate developer, and entrepreneur. Originally a lieutenant from Pennsylvania in the Union Army, Santee traveled to California where he developed the city of Ramona, California and was elected to represent the 4th electoral district of the Los Angeles Common Council from 1884-1886. In 1891, the post office was established in Santee's name and later the first school, Cowles School, was built. In 1893, Cowleston was renamed Santee after Jennie lobbied to rename it in honor of her new husband, which was reluctantly passed by its citizens. In 1885, Hosmer P. McKoon purchased 9,453 acres, which he named Fanita Ranch after his wife Fannie. In 1898, the Scripps family, who found fame and fortune in newspapers, acquired 7,000 acres of Fanita ranch. They used this land to raise cattle and established a country resort for the family (City of Santee: 2014).

During World War II, the federal government acquired 2,300 acres of Fanita Ranch to the west of Santee, which they used as a military training ground. Another 4,300 acres of Fanita Ranch was purchased in 1958 by the Carlton Company (later known as the Santee-Carlton Company). The Carlton Oaks Golf Course was developed by the company and has been a local landmark since 1958. In 1976 the attempt to incorporate the city failed, but it was later incorporated in 1980 as the City of Santee (City of Santee: 2014).

A review of historic maps and imagery available for the project area indicate that as early as 1942 an unimproved road crossed the length of the northern portion of the indirect APE as well as a second road which ran north to south in the eastern portion of the indirect APE. At this time the San Diego River is depicted within the southern portion of the indirect APE as a wide wash. Little change is seen in the indirect APE until the late 1950s when the Carlton Oaks Golf Course was developed.

By 1964, aerial imagery shows a reservoir in the northern section of the indirect APE as well as access roads and evidence of grading. A second reservoir is added in the northeast indirect APE by 1980. The San Diego River also undergoes changes and by 1969, the River is depicted as a narrow wash. Between 1964 and 1971 the area around the indirect APE experiences substantial residential and urban development which continued until 1988.

RECORDS SEARCH

CALIFORNIA HISTORICAL RESOURCES INVENTORY SYSTEM

Cogstone requested a search of the California Historical Resources Inventory System (CHRIS) from the South Coastal Information Center (SCIC) at San Diego State University that included the indirect APE as well as a 1.0-mile radius buffer. The SCIC completed the request on November 17, 2016 and the results of the record search indicate that 117 previous studies have been completed within 1.0 mile of the indirect APE. Of these, 27 studies included portions of the indirect APE (Appendix B).

The results of these studies indicate that no cultural resources have been previously recorded within the direct APE; however, six prehistoric cultural resources are located within the indirect APE. None of these resources are listed in the Archaeological Determinations of Eligibility maintained by the California Office of Historic Preservation (OHP) and have not been formally evaluated for listing in the National Register of Historic Places (NRHP).

Outside of the indirect APE but within the one-mile record search radius, a total of 54 cultural resources have been previously documented (Table 1). These consist of 31 prehistoric

archaeological sites, 11 prehistoric isolates, two multicomponent sites, four historic archaeological sites, two historic isolates, and four historic resources (Table 2).

Table 1. Cultural Resource Types within 1 mile of the APE

Distance from APE in miles	Cultural Resource Type
Within the Direct APE	None
Within the Indirect APE	6 prehistoric archaeological sites
0-0.25	4 prehistoric archaeological sites
	1 multicomponent site (both prehistoric and historic materials)
0.25-0.50	7 prehistoric archaeological sites
	2 prehistoric isolates
0.50-1.0	20 prehistoric archaeological sites
	9 prehistoric isolates
	1 multicomponent site (both prehistoric and historic materials)
	4 historic archaeological sites
	2 historic isolates
	4 historic resources (built environment)

Table 2. Previously Recorded Resources within 1 mile of the APE

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-000140	CA-SDI-000140	Prehistoric Archaeological Site	Not defined	Unknown	0-0.25
P-37-000203	CA-SDI-000203	Prehistoric Archaeological Site	Prehistoric village: Bedrock milling features, ceramic sherds, lithic tools, groundstone, hearths	1978, 1994	0.5-1
P-37-000204	CA-SDI-000204	Prehistoric Archaeological Site	Bedrock milling features, shell and lithic scatter	1978, 1992, 2009	0-0.25
P-37-000205	CA-SDI-000205	Prehistoric Archaeological Site	Bedrock milling features, shell and lithic scatter	1978, 1992, 2009	Within
P-37-000206	CA-SDI-000206	Prehistoric Archaeological Site	Not defined	1978	0-0.25
P-37-004353	CA-SDI-004353	Prehistoric Archaeological Site	Milling features, quarry	1975	0.5-1
P-37-004354	CA-SDI-004354	Prehistoric Archaeological Site	Lithic scatter, cobble quarry	1975, 1996	0.5-1
P-37-004510	CA-SDI-004510	Prehistoric Archaeological Site	Temporary habitation site: Milling feature, lithics, midden	1975, 1978	0.5-1
P-37-005050	CA-SDI-005050	Prehistoric Archaeological Site	Temporary habitation site: Milling feature, lithics, ceramics, hearths, midden, groundstone	1979	Within
P-37-005052	CA-SDI-005052	Prehistoric Archaeological Site	Bedrock milling features	1972	0.5-1
P-37-005053	CA-SDI-005053	Prehistoric Archaeological Site	Rockshelter, cupules, bedrock milling features, lithic tools, ceramic sherds,	1986	0.25-0.5

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-005535	CA-SDI-005535	Multicomponent site	Groundstone, lithic tools; cobblestone foundations	1980, 1986	0.5-1
P-37-005689	CA-SDI-005689	Prehistoric Archaeological Site	Bedrock milling features	1978	0.5-1
P-37-005690	CA-SDI-005690	Prehistoric Archaeological Site	Projectile point, lithic scatter	1978	0.5-1
P-37-005691	CA-SDI-005691	Prehistoric Archaeological Site	Lithic tools, lithic scatter	1978	0.5-1
P-37-005985	CA-SDI-005985	Prehistoric Archaeological Site	Lithic tools	1968	0.5-1
P-37-007603	CA-SDI-007603	Prehistoric Archaeological Site	Lithic tools, groundstone, hearth	1981	0.5-1
P-37-008594	CA-SDI-008594	Prehistoric Archaeological Site	Habitation Site, bedrock milling features, lithic tools, groundstone, ceramic sherds, bone tool, daub, faunal remains, ceremonial artifacts	1967, 1975, 1992, 2009	Within
P-37-009242	CA-SDI-009242	Multicomponent site	Lithic tools, groundstone, historic artifacts	1967, 1982, 1986, 1992	0-0.25
P-37-009243	CA-SDI-009243	Prehistoric Archaeological Site	Habitation site; human remains, bedrock milling features, hearths, lithic tools, groundstone, ceramics, fish net weight, midden	1978, 1982, 1984, 1992, 2009	Within
P-37-009245	CA-SDI-009245	Historic Archaeological Site	Historic trash scatter	1982	0.5-1
P-37-010052	CA-SDI-010052	Prehistoric Archaeological Site	Bedrock milling feature	1978	0.5-1
P-37-010053	CA-SDI-010053	Prehistoric Archaeological Site	Lithic tools and debitage	1978	0.25-0.5
P-37-010054	CA-SDI-010054	Prehistoric Archaeological Site	Milling features, groundstone, lithic tools and debitage	1978, 1996	0.25-0.5
P-37-010148	CA-SDI-010148	Prehistoric Archaeological Site	Lithic tools and debitage, groundstone, faunal remains, hearth, ceramic sherd	1984, 1986, 2009	Within
P-37-011057	CA-SDI-011057	Prehistoric Archaeological Site	Bedrock milling feature, groundstone, lithic tools and debitage	1988, 1990, 1993	0.25-0.5
P-37-011459	CA-SDI-011459	Prehistoric Archaeological Site	Lithic and groundstone scatter	1989	0.25-0.5
P-37-011542	CA-SDI-011542	Historic Archaeological Site	Foundations, historic refuse deposit	1989	0.5-1
P-37-011543	CA-SDI-011543	Prehistoric Archaeological Site	Lithic Scatter	1989	0.5-1
P-37-011606	CA-SDI-011606	Prehistoric Archaeological Site	Bedrock milling features, ceramic scatter	1990	0.5-1
P-37-011607	CA-SDI-011607	Prehistoric Archaeological Site	Lithic and groundstone scatter, hearth	1990	0.5-1
P-37-011608	CA-SDI-011608	Prehistoric Archaeological Site	Lithic and groundstone scatter, hearth	1990	0.5-1
P-37-011761	CA-SDI-011761	Historic Archaeological Site	Historic cistern	1990	0.5-1

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-012086	CA-SDI-012086	Prehistoric Archaeological Site	Prehistoric fishing weir, lithic tools, hearth	1990	0.5-1
P-37-013592	CA-SDI-013592	Prehistoric Archaeological Site	Lithic tools and debitage	1994	0.25-0.5
P-37-013593	CA-SDI-013593	Prehistoric Archaeological Site	Lithic tools and debitage	1994, 2011	0.25-0.5
P-37-014905		Prehistoric Isolate	Lithic tool	1988	0.5-1
P-37-014908		Prehistoric Isolate	Lithic tool	1989	0.25-0.5
P-37-014909		Prehistoric Isolate	Lithic tool	1989	0.5-1
P-37-016210		Prehistoric Isolate	Lithic tool	1997	0.5-1
P-37-016211		Prehistoric Isolate	Lithic tool	1997	0.5-1
P-37-020910		Historic Resource	Dam; "Old Mission Dam"; 1800: HRI: 2138-0011-0000, California Historic Landmark No. 52	Unknown	0.5-1
P-37-025460	CA-SDI-016904	Prehistoric Archaeological Site	Lithic and groundstone scatter	2003	0.5-1
P-37-029009		Historic Resource	Single family residence, post WWII ranch-style, 1951	2012	0.5-1
P-37-029011		Historic Resource	Single family residence, vernacular-style, 1936	2012	0.5-1
P-37-030866	CA-SDI-019604	Prehistoric Archaeological Site	Bedrock milling feature	2009	Within
P-37-032809	CA-SDI-020746	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032810	CA-SDI-020747	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032811	CA-SDI-020748	Historic Archaeological Site	Trash scatter	2012	0.5-1
P-37-032812	CA-SDI-020749	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032813		Historic Isolate	Abandoned cars	2011	0.5-1
P-37-032814		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032815		Prehistoric Isolate	Lithic tool	2011	0.5-1
P-37-032819		Prehistoric Isolate	Groundstone	2012	0.25-0.5
P-37-032820		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032821		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032822		Prehistoric Isolate	Groundstone	2012	0.5-1
P-37-032823		Historic Isolate	Abandoned car	2012	0.5-1

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-032824		Historic Resource	Engineering structure: Sycamore Landfill, 1963	2012	0.5-1
P-37-035815	CA-SDI-021860	Prehistoric Archaeological Site	Lithics, groundstone, hearths, shell and faunal remains	2016	0-0.25

CULTURAL RESOURCES LOCATED WITHIN THE INDIRECT APE

P-37-000205 (CA-SDI-000205)

P-37-000205 is a prehistoric archaeological site located on the southern boundary of the indirect APE and 419 feet south of the direct APE. The site was originally recorded by Malcom Rogers in an unknown year, who noted the site as approximately one acre in size, consisting of "lithic material". Caltrans was unable to relocate the site in 1986 and 1991. Archaeological monitoring in 1992 identified a number manos, cobbles, and cores in the western portion of the site. An archaeological survey in 2009 by Brian Williams and Lucas Piek of ASM Affiliates was unable to locate the site.

P-37-005050 (CA-SDI-005050)

P-37-005050 is a prehistoric archaeological site located on the southeastern boundary of the indirect APE and 503 feet south of direct APE. The site was recorded by Roy Pettus in 1979 who described it as a Late Prehistoric site with midden, numerous milling features, ceramic and lithic artifacts.

P-37-008594 (CA-SDI-008594)

P-37-008594 is a prehistoric habitation site located on the southern boundary of the indirect APE and 254 feet south of the direct APE. The site was originally recorded by Chris Christensen and Lynne Christensen in 1981 as a bedrock milling feature with two mortars, numerous slicks and basins, and two mano fragments. In 1986, the site was revisited by Joyce Corum who recorded seven bedrock milling features with two mortars, 12 basins, and 15 slicks and three features with eight slicks. Subsurface testing uncovered 296 pieces of debitage, three cores, two flakes, and 129 pieces of animal bones. In 1992 Carolyn Kyle of Gallegos and Associates expanded the site to included 19 bedrock milling features with basins, slicks, mortars, and grinding areas, a yoni (ceremonial feature) lithic tools, bone tools, groundstone, metates, daub fragments, and ceramic sherds. A 2009 survey by Brian Williams and Lucas Piek of ASM Affiliates recorded possible historic glass. The SCIC documents two site locations for P-37-008594. It is likely that the site was originally mapped in one location and then relocated in another area in a subsequent survey.

P-37-009243 (CA-SDI-009243)
P-37-009243 is a prehistoric habitation site located on the southern boundary of the indirect APE and 205 feet south of the direct APE. This site was originally recorded by Anna Noah in 1982 as a milling feature with seven basins and one slick, and three possible quartz flakes. In 1986 the site was revisited by Joyce Corum and Karen Crotteau and updated to include six milling basins, several slicks, ground stone and lithics. In 1986, subsurface testing indicated the presence of 34 potsherds, 17,065 pieces of debitage, 49 cores, 19 hammer stones, 36 flake tools, 12 core tools, 40 projectile points, 14 bifaces, 58 manos, 21 groundstone fragments, marine shell and animal bone, as well as two cupules. Theodore Cooley and Patricia Mitchell of Ogden Environmental and Energy Services visited the site in 1992 and subsurface testing found bedrock milling features, four hearths, two kiln features, two oven features, 65,876 pieces of debitage, lithic tools, projectile points and bifaces, groundstone, ceramics, bone tools, fishing tools, asphaltum, ochre, daub, marine shell and faunal remains, and possible human remains. Radiocarbon samples dated the site to between 5740 +/- 100 B.P. and 1340 +/- 60 B.P. A survey by Brian Williams and Lucas Piek of ASM Affiliates in 2009 relocated the site and observed more lithic tools, groundstone, milling features, and animal bone on the surface.

P-37-010148 (CA-SDI-10148)
P-37-010148 is a prehistoric archaeological site located on the southern boundary of the indirect APE and 164 feet south of the direct APE. The site was originally recorded in 1984 by Jay Thasken of Westec Services as consisting of lithic tools, debitage, groundstone, and one ceramic sherd. Subsurface testing uncovered additional lithic tools and debitage as well as groundstone artifacts. Joyce Corum relocated the site in 1986 and subsurface testing produced 1,354 pieces of debitage, eight core tools, five hammerstones, debitage, 2,485 pieces of animal bone, hearth features and charcoal. No artifacts were observed in the 2009 survey by Brian Williams and Lucas Piek of ASM Affiliates.

P-37-030866 (CA-SDI-019604)
P-37-030866 is a prehistoric milling feature located in the east-central indirect APE and 433 feet north of the direct APE. The site was recorded by Brian Williams and Lucas Piek of ASM Affiliates in 2009 and consists of two bedrock milling outcrops with six milling surfaces.

OTHER SOURCES

In addition to the records at the SCIC, a variety of sources were consulted by Megan Wilson in November 2016 to obtain information regarding the indirect APE (Table 3). Sources include the National Register of Historical Places (NRHP), California Register of Historical Resources

(CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI) and local historical registers. Specific information about the project area, obtained from historic maps and aerial photography is presented in the Project Area History section of this report.

Table 3. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP; 1979-2002 & supplements)	Negative
Historic USGS Topographic Maps	The 1942 La Mesa 1:31,680 topographic map and 1942 El Cajon 1:62,500 topographic map show an unimproved road crossing the length of the northern portion of the indirect APE and another road cutting north/south on the eastern portion. The San Diego River is seen on the southern portion of the indirect APE as a wide wash and by 1967 the La Mesa and El Cajon 1:24,000 topographic maps depict the river as a narrow wash. The 1955 El Cajon 1:24,000 topo map shows that the northern unimproved road removed. A major residential development surrounds the indirect APE by 1969 and development continues until 1998.
Historic US Department of Agriculture Aerial Photographs	The 1953 aerial shows the indirect APE as undeveloped and consists of the San Diego River plain. In 1964, the aerial show a reservoir established in the north-central section of the indirect APE along with access roads and evidence of grading. Between 1964 and 1971 around the indirect APE experienced substantial residential development. In 1980, another reservoir was added to the northeast portion of the indirect APE.
California Register of Historical Resources (CRHR; 1992-2014)	Negative
California Historical Resources Inventory (CHRI; 1976-2014)	Negative
California Historical Landmarks (CHL; 1995 & supplements to 2014)	Negative
California Points of Historical Interest (CPHI; 1992 to 2014)	Negative
Bureau of Land Management (BLM) General Land Office Records	Positive; Helena Miguel Victoria Isabel Miguel Miguel Pedrorena Dona Maria Antonio Peronena Maria Antonio Peronena Thomas W. Sutherland; Spanish/Mexican Land Grant, 1851

FIELD SURVEY

SURVEY METHODS

The survey stage is important in a project's environmental assessment phase to verify the exact location of each identified cultural resource, the condition or integrity of the resource, and the proximity of the resource to areas of cultural resources sensitivity. All undeveloped ground surface areas within the ground disturbance portion of the project area were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics). Existing ground disturbances (e.g., cutbanks, ditches, animal burrows, etc.) were visually inspected. Photographs of the project area, including ground surface visibility and items of interest, were taken with a digital camera.

Michelle Courtney of Cogstone conducted an intensive-level pedestrian survey of the direct and indirect APE on November 22, 2016. The survey consisted of 15 meter-wide parallel transects within the APE, other than in hardscaped areas with no ground visibility, while closely inspecting the ground surface.

SURVEY RESULTS

An existing dirt path, dirt berm, and portions of the landscaped and paved Carlton Oaks Golf Course are located within the direct APE limiting ground visibility. Outside of the landscaped golf course, ground visibility ranged from poor to good. Visibility was poor (approximately 10 percent) in areas where vegetation such as cottonwood leaves covered the ground (Figure 4). Visibility was good (approximately 95-100 percent) along the existing dirt path however the path is heavily disturbed (Figure 5). The survey of the direct APE was negative for cultural resources.

Ground visibility within the indirect APE was poor. Areas around the river had poor visibility due to dense vegetation with visibility ranging from approximately 50 to 75 percent (Figure 6). Modern trash was noted throughout the indirect APE, but was mostly concentrated around the river. Homeless tents were heavily concentrated in one location near the river, which was not surveyed due to safety concerns. Invasive non-cultural shell was noted at UTM (NAD 83) coordinates 0498028 mE 3633285 mN, but no midden was present. No materials were collected during the survey and no new cultural resources were identified within the indirect APE.



Figure 4. Ground Visibility along Future West End of Dirt Bike Path, View to the East



Figure 5. Ground Visibility along Future West End of Dirt Bike Path, View to the East



Figure 6. Ground Visibility near River, View to the North

CULTURAL RESOURCES WITHIN THE INDIRECT APE

A total of six prehistoric resources were previously recorded within the indirect APE (Confidential Appendix C). Of these, four of the resources, P-37-005050, P-37-008594, P-37-009243, and P-37-030866, were re-identified during the pedestrian survey. All sites were found in the same condition as recorded on their respective Department of Parks and Recreation (DPR) 523 site forms, site record updates were not prepared. Two sites, P-37-000205 and P-37-010148, could not be re-identified during this survey.

STUDY FINDINGS

No cultural resources have been previously recorded and none were observed within the direct APE during the pedestrian survey (see Confidential Appendix C). However, prehistoric archaeological sites are known within the indirect APE including six prehistoric archaeological sites of which four were re-identified during the survey.

The direct APE has been highly disturbed as is evident by the presence of the existing dirt trail, dirt berm, and landscaping for the Carlton Oaks Golf Course. Ground disturbance for this portion of the project is anticipated to be approximately 2.5 feet. The potential for buried archaeological deposits within 2.5 feet is low due to the disturbed soils. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet. The potential

for buried archaeological deposits within 3 feet in this area is low due to the disturbed soils. One area of deeper excavation is planned for the installation of a retention wall along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. This feature would require approximately 5 feet of excavation. The potential for buried archaeological deposits within the 5 feet is low because the excavation will be within a fill condition.

No impacts are anticipated for the previously recorded cultural resources located within the indirect APE as no project activities are planned within the prehistoric sites' boundaries.

RECOMMENDATIONS

While the potential for buried archaeological deposits is low for this project due to the minimal depth of excavation within disturbed soils, the project vicinity is considered sensitive for prehistoric archaeological sites based on the number of prehistoric resources previously recorded within the indirect APE and one-mile radius. The following recommendation is made in the event that ground disturbing activities extend into native soils.

It is recommended that prior to project implementation all construction personnel participate in cultural resources sensitivity training conducted by a qualified archaeologist. The training will detail what types of cultural resources might be encountered and the procedure to follow if cultural resources are discovered inadvertently. The training will include a discussion on the importance of, and the legal basis for, the protection of significant archaeological resources. All personnel will sign that they understand the material presented and be issued a hard hat sticker to verify training.

In addition it is recommended that a qualified archaeologist be retained on an on-call basis to respond to any unanticipated discoveries.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist can evaluate it. If human remains are unearthed during excavation, State Health and Safety Code Section 7050.5 states "there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered... [has made the appropriate assessment, and] …recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code."

Further in accordance with California Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the health and safety code have been met.

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APPENDIX A: QUALIFICATIONS

MOLLY VALASIK, RPA

Principal Investigator for Archaeology

EDUCATION

2009 M.A., Anthropology, Kent State University, Kent, Ohio
2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

SUMMARY QUALIFICATIONS

Ms. Valasik is a Registered Professional Archaeologist (RPA) with eight years of professional and academic archaeological field and research experience. She meets the qualifications required by the Secretary of the Interior's *Standards for Archaeology*, and is a skilled professional who is well-versed in the compliance procedures of CEQA and Section 106 of the NHPA and in working with a variety of federal, state, and local agencies throughout California. Ms. Valasik has managed a variety of projects at Cogstone in the water, transportation, energy, development and federal sectors. Her role at Cogstone has ranged from GIS Manager, Field Director, Archaeology Supervisor, and beginning in 2014 Principal Investigator for Archaeology.

SELECTED PROJECTS

Rose Creek Bike Trail, San Diego Association of Governments (SANDAG), San Diego, San Diego County, CA. Prepared archaeological Phase I assessment including record search, Native American consultation, survey, impact analysis and recommendations for new 2-mile bike trail along creek. Sub to Nasland Engineering. Principal Investigator. 2014

13th Street Bridge, County of San Diego Department of Public Works, Caltrans, San Diego County, CA. Prepared archaeological Phase I assessment including record search, survey, impact analysis and recommendations for bridge replacement. Sub to ICF Jones & Stokes. Principal Investigator. 2013

SR-138 Palmdale Boulevard PA/ED (Sierra Highway), Caltrans District 7, Palmdale, Los Angeles County, CA. Managed cultural resource assessment including records search, Sacred Lands search, NAHC consultation, field survey, mapping. Prepared an Archaeological Survey Report (ASR) and Historic Property Survey Report (HPSR) to Caltrans standards for PA/ED environmental documents. Sub to Parsons. Task Manager/Principal Investigator. 2015-ongoing

Park Place Extension and Grade Separation EIR EA, Caltrans District 7, El Segundo, Los Angeles County, CA. Managed a pedestrian survey to record and evaluate cultural resources within the archaeological and architectural APEs for a ~0.5-mile project along NBSF and UPRR rail lines and spur tracks on behalf of the City of El Segundo. Cogstone's services included records search, NAHC consultation, Historic Properties Survey Report (HPSR) with appended Archaeological Survey Report (ASR) and a Historic Resources Evaluation Report (HRER). Seven built-environment resources were identified, evaluated, and DPR 523 forms were prepared. Sub to Michael Baker. Principal Investigator. 2015-ongoing

I-5 Jeffrey Open Space Trail (JOST) Segments 1 & 2, Caltrans District 12, Irvine, Orange County, CA. For the construction of a recreational trail and bridge, coordinated record search, Sacred Lands search, NAHC consultation; preparation of Area of Potential Effects (APE) maps for archaeological and architectural resources with RBF and Caltrans; intensive pedestrian survey and mapping; preparation of ASR, HPSR, PIR technical reports on behalf of the City of Irvine in compliance with CEQA. Sub to Michael Baker. Task Manager/ Principal Archaeologist. 2015-ongoing

I-405 Freeway Trail Lighting Improvements Project, City of Irvine/ Caltrans District 12, Orange County, CA. Literature and Sacred Lands searches, extended Native American consultation, hydrogeological study of San Diego Creek Watershed, survey, and technical reports (HPSR and ASR) for improvements to lighting along existing bikeway. NHPA Section 106 compliance. Sub to RBF. Archaeologist and Co-Author. 2014

SHERRI GUST, RPA
Principal Investigator for Archaeology and Paleontology

EDUCATION

1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles

1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS

Gust is a Registered Professional Archaeologist and Qualified Professional Paleontologist with more than 35 years of experience in California. She is accepted as a principal investigator for both prehistoric and historical archaeology by the State Office of Historic Preservation's Information Centers. She holds statewide BLM permits for cultural and paleontology as a principal investigator, a BLM paleontology permit for Nevada as principal investigator and is a certified/qualified principal archaeologist and paleontologist in most California cities and counties that maintain lists. Gust is a Research Associate of the Natural History Museum of Los Angeles County in the Vertebrate Paleontology and Rancho La Brea Sections. She is a Member of the Society of Vertebrate Paleontology, Society for Archaeological Sciences, Society for Historical Archaeology, the Society for California Archaeology and others. She has special expertise in the identification and analysis of human, animal and fossil bone. In addition, she is a Reader at the Huntington Library and is experienced in archival research.

SELECTED SAN DIEGO PROJECTS

Rose Creek Bike Trail, San Diego Associate of Governments, San Diego, CA. The project proposed construction of a bike trail to connect existing trails. Managed all work to prepare a cultural resources constraints analysis, Archaeological Survey Report (ASR), Historic Property Survey Report (HPSR) and Historic Resources Evaluation Report (HRER). Sub to Nasland Engineering. Project Manager/Principal Archaeologist. 2012-2016

Pilgrim Creek Vector Habitat Remediation Design, Oceanside, San Diego County, CA. The project is located at the Oceanside municipal golf course adjoining MCB Camp Pendleton and will implement long-term solutions to reduce or eliminate mosquito breeding habitat. Conducted a records search, sacred lands search, Native American consultation, reporting and mitigation recommendations. Sub to Michael Baker. Project Manager/Principal Archaeologist. 2014

SR 94 Improvement Project, between Jamacha and Jamul, Caltrans District 11, San Diego County, CA. The project was improvement to six interchanges. Managed record searches, research, survey and co-authored a combined Paleontological Identification Report and Paleontological Evaluation Report (PIR/PER). Sub to Environmental Data Systems. Project Manager/Principal Paleontologist. 2013

Environmental Consulting Services on an As-Needed Basis for FHWA-Funded Projects, County of San Diego Department of Public Works, San Diego County, CA. Assessments, surveys, record searches, APE mapping, ASR/HPSR, Native American consultation, monitoring and compliance reporting for various projects including: 13th Street Bridge, Descanso Pathway, and Buckman Springs Bridge. Sub to ICF. Project Manager/Principal Archaeologist. 2013-2016

Batiquitos Lagoon Double Track, San Diego Associate of Governments (SANDAG), Leucadia, Encinitas, Carlabad, San Diego County, CA. The project proposes to construct a 2.7-mile-long segment of double-track, grade crossing modifications, site improvements (drainage, culverts, utilities), signal modifications and a bridge crossing at Batiquitos Lagoon. Managed record searches, sacred lands search, Native American consultation, survey and separate cultural and paleontology reports. Co-author of reports. Currently preparing to conduct Phase II testing of a prehistoric archaeological site. Sub to HNTB. Principal Investigator. 2013-present

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

DESIREÉ RENEÉ MARTINEZ
Task Manager/Archaeologist

EDUCATION

1999 M.A., Anthropology (Archaeology), Harvard University, Cambridge
1995 B.A., Anthropology, University of Pennsylvania, Philadelphia

SUMMARY QUALIFICATIONS

Ms. Martinez is a qualified archaeologist with 20 years of experience in archaeological fieldwork, research, and curation. She has expertise in the planning, implementation, and completion of all phases of archaeological work and has participated in archaeological investigations as a crew member, tribal monitor, and principal researcher. She meets national standards in archaeology set by the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the standards outlined in Attachment 1 to Caltrans Section 106 Programmatic Agreement with the FHWA. Her experience also includes compliance with CEQA, NEPA, NAGPRA, SB 18 and other cultural resource laws. In addition, Ms. Martinez has vast experience in lab analysis and museum collections management. Ms. Martinez also has extensive experience consulting with Native American leaders and community members in a variety of contexts.

SELECTED PROJECTS

High Desert Corridor/ SR-138 Widening Project, Caltrans District 7 On-Call (07A3145)/LA Metro, Los Angeles and San Bernardino Counties, CA. This project proposed by Caltrans and Metro involves construction of a new, approximately 63-mile long, east-west freeway/expressway and rail line between SR-14 in Los Angeles County and SR-18 in San Bernardino County. Phase II/III testing and data recovery at the three sites that will be directly impacted by the project. Analyzed lithic material. Compliance with Section 106 of the NHPA and CEQA are required. Sub to Parsons Transportation Group. Principal Archaeologist. 2015-ongoing

Devers-Palos Verde 500 kV No. 2 Transmission Line Project, Southern California Edison, Devers Valley, Riverside County, CA. Provided regulatory oversight and project management regarding cultural and paleontological resources. This new transmission line connects several large-scale solar and conventional generation projects. Developed environmental compliance training to inform and guide construction and major capital project teams. Assisted in the preparation of the Historic Properties Treatment Plan. Provided environmental analyses and clearance documentation of project modifications during construction without delay to project. Oversaw the monitoring of sites along the Devers-Valley portion of the project. Collected extensive archaeological, ethnohistorical and historical information about the use and significance of Edom Hill, located in Desert Hot Springs, and the Lakeview Mountains, located in Lakeview, to the Southern California Native American tribes. Prepared evaluation reports of the hill and mountains for inclusion in the National Register of Historic Places as a Traditional Cultural Properties. Lead In-house Consultant Archaeologist. 2011- 2014

Devers-Mirage Project, Southern California Edison, Palm Springs, Riverside County, CA. Evaluated Garnet Hill (aka Hoon wit ten ca va), located in Palm Springs, for inclusion in the National Register of Historic Places as a Traditional Cultural Property. Collected extensive archaeological, ethnohistorical and historical information about the use and significance of the hill to the Cahuilla people. Documented findings in a written report and gave public presentations of results in a number of professional venues. In-house Consultant Archaeologist. 2011-2013

Sentinel Power Plant, Southern California Edison, Palm Springs, Riverside County, CA. Provided regulatory oversight and project management of cultural and paleontological resources. Provided cultural and paleontological assessment of the APE. Worked with generator's consultants to ensure that SCE's project scope was described accurately and reviewed by their environmental assessments and documents. Conducted a cultural resources through supplemental pedestrian survey, and summarized findings in a written technical report. Created GIS shapefiles and maps delineating cultural resource boundaries and survey corridors. Oversaw cultural and paleontological resources monitoring during construction. In-house Consultant Archaeologist. April 2011-July 2013

ANDRE-JUSTIN C. SIMMONS
Archaeologist/GIS Supervisor

EDUCATION

2014 M.A., Anthropology: Specializing in Anthropological Archaeology, California State University, Fullerton
2010 B.A., Anthropology and History, California State University, Fullerton, graduated *cum laude*
2012 Certificate in Geographic Information Systems, California State University, Fullerton

SUMMARY QUALIFICATIONS

Mr. Simmons is a qualified archaeologist and cross-trained paleontologist with extensive field experience in survey, monitoring, faunal analysis, and excavation. He exceeds the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Further, he is certified in Geographic Information Systems (GIS) and specializes in ESRI's ArcGIS software. Mr. Simmons is responsible for supervising GIS data collection and management, geospatial analysis, and the production of GIS maps and databases for large and small-scale projects. His key research interests include settlement patterns and use of space among Paleoindians, the American Southwest, early historic and prehistoric California, and historical Mexico. He has over six years of experience in California Archaeology and paleontological monitoring along with more than 24 hours of paleontology training and over four years of GIS experience.

SELECTED PROJECTS

Del Sur Solar EIR, City of Lancaster, Los Angeles County, CA. The project involves development of a 100 MW solar facility on 725 acres in the western portion of the Antelope Valley along with a 2-4 mile gen-tie line to Antelope Substation. Tasks include records search, Sacred Lands search, NAHC consultation and intensive-level survey to support technical reports for inclusion in the project EIR. Sub to Aspen Environmental Group. GIS Specialist. 2015

Rio Hondo-Saugus 220kV Idle Line Removal, Southern California Edison, Angeles National Forest and Private Property, Los Angeles County, CA. Paleontological assessment that included a records search and recommendation for mitigation monitoring during removal of ~2.5 miles of idle transmission line and 13 towers along with the associated foundations and hardware. Sub to Compass Rose. Field Technician/GIS Specialist. 2014

High Desert Corridor/ SR 138 Widening Project, FHWA/Caltrans District 7, Los Angeles and San Bernardino Counties, CA. This project involves construction of a new, approximately 63-mile long, east-west freeway/expressway between SR 14 in Los Angeles County and SR 18 in San Bernardino County. Records search, pedestrian survey, GIS mapping and site recording for Extended Phase I (XPI) Testing, subsurface testing of four archaeological sites in the Area of Potential Effects (APE). Caltrans is the lead federal and state agency; compliance with Section 106 and CEQA required. Sub to Parsons. Archaeologist/GIS Supervisor. 2014-2015

SR-138 North Corridor Improvements, On-Call Environmental Services (07A3144), Caltrans District 7, Los Angeles County, CA. Conducted records search and prepared GIS maps for a combined Paleontological Identification Report (PIR) and Paleontological Evaluation Report (PER) for improvements to a 35-mile segment of SR-138 from SR-14 north of Lancaster to I-5 south of Gorman. The APE is 600 feet wide. Caltrans, in cooperation with Metro, is evaluating three build alternatives. Sensitivity for paleontological resources was determined using the Caltrans sensitivity scale and the Potential Fossil Yield Classification (PFYC) system. Formations in the project area are not sensitive for fossil resources. Cogstone recommended preparation of a Paleontological Mitigation Plan. Sub to ECORP Consulting. GIS Supervisor. 2014

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

MICHELLE SAVALA COURTNEY
Archaeologist

EDUCATION

2000 B.S., Anthropology, Univerisity of California, Riverside

SUMMARY OF QUALIFICATIONS

Ms. Courtney is certified by the City of San Diego as a dual-qualified archaeologist/paleontologist with 16 years of experience in cultural resource management. She has worked on all aspects of historical, prehistoric and paleontological resources projects throughout southern California. She is knowledgeable of environmental compliance requirements under CEQA, NEPA, NHPA Sec. 106/110, NAGPRA and local agencies regulations. Her experience includes project management, records search, archival research, and Native American consultation. Her field activities include scheduling and managing field crews, conducting, Phase I and II surveys and excavations, data recovery, site recording, construction monitoring, coordinating with Native American monitors, and preparing compliance reports. She has been responsible for directing laboratory technicians for sorting, identifying, archiving, documenting, and cataloging artifacts and fossils. She has prepared and delivered collections to and maintained professional relations with local Native American groups, the San Diego Archaeological Center, and the San Diego Natural History Museum. She has completed the Advisory Council on Historic Preservation refresher course, 40-hour HAZWOPER (2009) and 8-hour refresher (current), and rail safety training for NTSD.

SELECTED PROJECTS

Lane Field South Hotel, Lane Field LLC, Hensel Phelps, San Diego, San Diego County, CA. Conducted archaeological and paleontological awareness training and mitigation monitoring during ground disturbing activities in compliance with the Subsurface Mitigation Plan on behalf of the developer. The project involves construction of a new multi-story high-rise hotel with ground level retail space and underground parking. It is located on the site of the former Lane Field baseball stadium (c. 1936-1957). The site is currently a paved parking lot at Pacific Coast Highway and Broadway in downtown San Diego Archaeological/Paleontological Monitor. 2016-ongoing

Palatino Little Italy Apartments Project, Kirkham Road and McMillin Little Italy, City of San Diego, San Diego County, CA. Providing cultural and paleontological resources compliance and mitigation monitoring during ground disturbing activities for construction of a 100 unit multi-family housing development at State and Elm Streets in the Little Italy area of San Diego on behalf of the developer. Sub to Spindrift Archaeological Monitor. 2016-ongoing

Hotel Indigo, San Diego, CA. Served as a paleontological lab technician for future Hotel site under the supervision of the project paleontologist, Dr. George Kennedy. Processed and curated invertebrates from *Pleistocene Bay Point* and *Middle Pleistocene.*

University City Village, San Diego, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Eocene, Mission Valley Formation and Pleistocene, Lindavista Formation.*

The Loft @ 707 10th Ave, San Diego, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Pleistocene, "Bay Point Formation".*

South Block Lofts, San Diego, CA. Served as a paleontological lab technician under the supervision the project paleontologist, Dr. George Kennedy. *Pleistocene Bay Point, middle Pleistocene.*

Sewer Group 741, Hillcrest, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Pleistocene, Lindavista Formation and Pliocene, San Diego Formation.*

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

HOLLY DUKE
Lab and Data Manager
Archaeologist and Cross-trained Paleontologist

EDUCATION

2009 B.A., Archaeology/History, Simon Fraser University, Canada

SUMMARY QUALIFICATIONS

Ms. Duke is a qualified archaeologist and cross-trained paleontologist with four years of experience in survey, monitoring, excavation, and the identification of human and faunal skeletal remains. She is Cogstone's Lab and Data Manager. Her laboratory responsibilities include: identification and analysis of human skeletal remains; cleaning and identification of faunal bones for inclusion in faunal collections; measuring and cataloging prehistoric and historic artifacts; washing, sorting, and identifying seeds; as well as fossil preparation and stabilization. As Data Manager, she is responsible for the organization of field data, lab supervision and organization, and maintaining the iPads used for data collection in the field.

Metropole Vault Replacements, Southern California Edison, Avalon, Catalina Island, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities of a 30,000 s.f. APE for replacement of two underground electrical vaults. The site is located in proximity to the original Tongva tribal village on the island. Coordinated with the Most-Likely Descendant (MLD) and Native American monitor during the excavation of human remains. Responsible for the collections management of all artifacts and remains during excavation. Created spreadsheet databases to manage artifacts and features. Identified, cleaned, and recorded human remains per the MLD's instructions. Assisted with the repatriation of human remains prior to construction completion. Managed and organized field photos and feature data after construction was complete. Archaeological Monitor/Lab and Data Manager. 2014

Bodie Hills FY14-15 Cultural Resources Survey, Desert Restoration Project, Bureau of Land Management, Bishop Field Office, Mono County, CA. The project is a Class III Cultural Resources Inventory survey of
2,721 acres of BLM land identified for vegetation management. Conducted intensive pedestrian survey, organized and maintained data collected in the field, and prepared site records for final report. Archaeology Technician/Lab and Data Manager. 2014-2015

High Desert Corridor/ SR 138 Widening Project, FHWA/Caltrans District 7, Los Angeles and San Bernardino Counties, CA. The project consists of a field pedestrian survey for Extended Phase I (XPI) Testing and subsurface testing of four archaeological sites in the Area of Potential Effects (APE). Prepared two progress reports, cataloged all artifacts collected during testing, identified faunal remains, and prepared the entire collection for curation. Sub to Parsons Transportation Group. Lab and Data Manager. 2014-2015

Exposition Light Rail Phase 2 Project, Los Angeles County. Conducted archaeological and paleontological monitoring along a 6.6-mile segment of the historic electric railroad known as the Santa Monica Air Line that is being replaced with a new light rail line. Coordinated with construction work crews and inspectors, conducted awareness training, provided daily reporting, recovered artifacts related to the historic rail line and documented historic rail line features. Sub to URS/AECOM. Archaeology/Paleontology Monitor. 2012-2014

Marina del Rey 18-Inch Waterline Replacement Phase IIIB Project, Los Angeles Department of Public Works, Marina del Rey, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities for two alignments along Fiji Way and Via Marina in Marina del Rey. Cataloged artifacts recovered during monitoring and managed field data and photos. Sub to RBF Consulting. Archaeology Monitor/Lab and Data Manager. 2015

MEGAN PATRICIA WILSON, RPA
Archaeologist/GIS Specialist

EDUCATION

2014 M.A. Anthropology, California State University, Fullerton *cum laude*

2013 GIS Certificate, California State University, Fullerton

2006 B.A., Anthropology, University of California, Los Angeles *cum laude*

SUMMARY QUALIFICATIONS

Ms. Wilson is a Registered Professional Archaeologist (RPA) and cross-trained paleontologist with 9 years of experience in survey, excavation, and laboratory preparation/curation analysis. She meets the qualifications required by the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Her key research areas include prehistoric subsistence and settlement patterns of coastal southern California, protohistoric and historic archaeology of southern California and the Great Basin, and paleoenvironmental reconstructions based on archaeological flora and faunal analysis. She is GIS proficient and assists with the digitizing and mapping of spatial data for archaeology projects. Ms. Wilson conducts records searches, background research, and NAHC consultations; prepares DPR site records, and is a contributor to cultural resources technical reports. Ms. Wilson has five years of experience in southern California archaeology and is an expert in prehistoric and historic Orange County archaeology and artifact identification.

SELECTED PROJECTS

Olive View – UCLA Medical Center Campus Master Plan EIR, LADPW, Sylmar, Los Angeles County, CA. Conducted a record search, AB 52 Tribal consultation assistance to support a cultural resources Phase I pedestrian survey of open ground surfaces within the 235-acre project site in compliance with CEQA. Contributed to an archaeological resources technical report. Sub to ICF Jones & Stokes. Archaeologist. 2016

Marina del Rey 18-Inch Waterline Replacement Phase IIIB Project, Los Angeles Department of Public Works, Marina del Rey, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities for two alignments along Fiji Way and Via Marina in Marina del Rey. Cataloged artifacts recovered during monitoring and managed field data and photos. Sub to RBF Consulting. Archaeology Monitor. 2015

Accelerated Charter Elementary School, Los Angeles Unified School District, Los Angeles, Los Angeles County, CA. Conducted background research and contributed to preparation of DPR forms. The project involves documentation of five historic-age buildings prior to demolition, background research, mitigation monitoring plans, archaeological and paleontological monitoring and preparation of a monitoring compliance report. LAUSD is constructing a new facility on a 2.3-acre site in South Central Los Angeles consisting of classrooms, open areas and parking. Sub to Gafon. Archaeologist. 2015

Banna Crossing Homes, City of Covina, Los Angeles County, CA. Conducted a literature review and records search. Prepared a cultural resources letter report for the proposed 8.5-acre project area (PA), including a one-mile radius around the PA. Sub to Environmental Advisors. Archaeologist. 2015

Park Place Extension and Grade Separation EIR EA, Caltrans District 7, El Segundo, Los Angeles County, CA. Conducted a pedestrian survey to record and evaluate cultural resources within the archaeological and architectural APEs for a ~0.5-mile project along NBSF and UPRR rail lines and spur tracks on behalf of the City of El Segundo. Cogstone's services included records search, NAHC consultation, HPSR/ASR/HRER and paleontological reports. Seven built-environment resources were identified, evaluated, and DPR 523 forms were prepared. Sub to Michael Baker. Archaeologist. 2015

APPENDIX B: PREVIOUS CULTURAL RESOURCE STUDIES WITHIN 1.0 MILES OF THE APE

Previous Cultural Resource Studies within 1.0 miles of the APE

Report No.	Author(s)	Title	Year	Distance from APE
SD-00090	American Pacific Environmental Consultants, Inc.	AEIS and Technical Reports for Fletcher Hills Meadows #9.	1980	Outside
SD-00098	Archaeological Systems Management	An Archaeological Reconnaissance of the Fletcher Hills Meadows #6 Property El Cajon, California.	1976	Outside
SD-00348	Carrico, Richard	Appendix B: Archaeological and Historical Survey of the Proposed Grossmont Union High School District Sites.	1976	Outside
SD-00409	Carrico, Richard	Archaeological Survey of the Carlton Hills Community Phase I	1977	Outside
SD-00415	Carrico, Richard	Archaeological and Historical Survey of the Mast Boulevard Housing Project Site.	1982	Outside
SD-00517	Cupules, Sue Ann and Ruth Tolles	Mast Boulevard Archaeological Survey and Mitigation Report	1974	Within
SD-00546	Cupules, Sue Ann	An Archaeological Survey of the San Diego River Valley	1975	Within
SD-00586	Cheever, Dayle M.	Cultural Resources Survey of the Proposed Santee-La Mesa 30-inch Gas Pipeline	1989	Outside
SD-00618	Fink, Gary R.	The Archaeology of Cuyamaca Street Extension	1973	Outside
SD-00771	Corum, Joyce M.	Extended Phase I and Phase II Archaeological Test Excavations at Sites CA-SDi-205, 5053, 8594, 9242, and 10,148 Santee, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1986	Outside
SD-00778	Corum, Joyce M. and Chris White	Extended Phase I and Phase II Archaeological Test Excavations at SDi-9243 Santee, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1986	Within
SD-00779	Corum, Joyce and Karen Crotteau	Archaeological Test Excavation at Sites CA-SDI-5655, 5658, 9239, 9240, 9246, 9247, 9913 in Shepherd Canyon, San Diego, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Within
SD-00780	Corum, Joyce	First Addendum Archaeological Survey Report for Proposed State Route 52 Santo Road to State Route 67 (Portion) 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Outside
SD-00835	Fink, Gary	Archaeological Survey for the Gillespie Field Master Plan Project PN 8393	1973	Outside
SD-00863	Fink, Gary	Archaeological Survey for the Proposed Forester Creek Drainage Channel Project	1973	Outside
SD-00866	Fink, Gary R.	An Archaeological Survey of the Upper San Diego River Mosquito Abatement and Water Pollution Control Project Phase I	1973	Outside
SD-00935	Fink, Gary R.	An Archaeological Survey of the Sycamore Canyon Landfill Site	1973	Outside
SD-00994	Hanna, David	A Cultural Resource Study of the Murray, Cowles, and Fortuna Mountain Regional Park	1978	Outside
SD-01206	Corum, Joyce M.	Second Addendum Phase I Archaeological Survey and Extended Phase I Investigation for Proposed State Route 52, Santo Road to State Route 67 11-SD-	1988	Within

Report No.	Author(s)	Title	Year	Distance from APE
		52 P.M.7.3/17.2 11222-047040.		
SD-01244	Hatley, Melvin Jay and Russell L. Kaldenberg	Archaeological Survey Report for the Carlton Hills Substation.	1976	Outside
SD-01269	Pettus, Roy E.	A Cultural Survey of Portions of the Las Chollas, South Las Chollas, Los Coches Forester, and Loma Alta Stream Basins in San Diego County, California.	1979	Within
SD-01370	Rosen, Martin D.	Archaeological Survey Report for the Proposed Extension of Route 125 from Fletcher Parkway in La Mesa to State Route 52 in Santee, San Diego County, California.	1986	Outside
SD-01521	Underwood, Bradley R., John Cook, Patrick H. A. Welch, and Richard D. Glenn	Preliminary Archaeology Survey Lakeview Carlton Hills Santee County of San Diego	1977	Outside
SD-01829	Corum, Joyce M.	Third Addendum Archaeological Survey for Proposed State Route 52, 11-SD-52 P.M. 7.3/17.2, 11222-047050	1989	Outside
SD-01855	Hector, Susan	Fanita Ranch Property	1986	Outside
SD-01904	Smith, Brian F.	An Archaeological Survey of the Santee Village Shopping Center Project	1990	Outside
SD-01909	Hector, Susan	Investigations Conducted at Archaeological Site SDM-W-2409 (SDi-7603) Santee, California	1981	Outside
SD-02182	Multi Systems Associates, Inc	Draft Environmental Impact Report Woodside Meadows EM 3710 Santee, County of San Diego	1977	Outside
SD-02191	Multi Systems Associates, Inc.	Draft Environmental Impact Report Mission Dam Views a Residential Project Santee Community Planning Area County of Dan Diego TM4148 R80-39 P30-38 EAD LOG#80-13-34	1980	Outside
SD-02196	Abel Parra	Draft Environmental Impact Report Proposed Removal of Sand Upper San Diego River, San Diego County P79-112 RP79-16 EAD LOG#79-14-261	1980	Outside
SD-02198	Padre Dam Municipal Water District	Padre Dam Municipal Water District, Santee California, Santee Lakes Initial Study	1980	Outside
SD-02221	Smith, Brian F.	An Archaeological Survey of the St. George Antioch Church Project, City of Santee, Application #PA 90-14	1991	Outside
SD-02454	Alter, Ruth	Cultural Resources Survey of the Mission Trails East Park Entrance Property	1991	Outside
SD-02583	Kyle, Carolyn and Dennis Gallegos	Cultural Resource Monitoring Sewer for East Mission gorge Interceptor Sewer System Force Main Construction Project DEP #880089	1993	Within
SD-02625	Bull Charles	A Cultural Resources Survey of The Tirrera Santa Norte Waterline, San Diego California	1991	Outside
SD-02632	Carrico, Richard	A Cultural Resources Testing, Evaluation, and Proposed Data Recovery Program for the East Mission Gorge Pump Station and Force Main Project	1991	Within
SD-02633	Carrico, Richard	A Cultural Resources Testing, Evaluation, and Proposed Data Recovery Program for the East Mission Gorge Pump Station and Force Main Project	1991	Within

Report No.	Author(s)	Title	Year	Distance from APE
SD-02749	Gallegos, Dennis and Carolyn Kyle	Draft Archaeological Evaluation of Prehistoric Sites CA-SDI-11606 AND CA-SDI-11057 LOCI A and D, Kumeyaay Lake Campground, San Diego, California	1993	Outside
SD-02761	Kyle, Carolyn	Data Recovery for a Prehistoric Site CA-SDI-110148, East Mission Gorge Pump Station and Force Main, San Diego, California	1993	Within
SD-02822	City of San Diego	Proposed Mitigated Negative Declaration of PACTEL Cellular Communications Facility, East Elliot, San Diego	1994	Outside
SD-02888	Rosen, Martin, D., Karen Crafts, and Joyce Corum	Negative Archaeological Survey Report: 2nd Addendum for Extension of Route 124 from Fletcher Parkway in LA Mesa to Route 52 in Santee	1994	Outside
SD-02905	McDonald, Meg, Carol Serr, and Daniel M. Saunders	Phase III Data Recovery of CA-SDI-9243 A Multicomponent Site in the San Diego River Valley Santee, California	1994	Within
SD-02916	Peak & Associates, Inc.	Cultural Resources Assessment of AT&T's Proposed San Bernardino to San Diego Fiber Optic Cable, San Bernardino, Riverside and San Diego Counties, California	1990	Within
SD-02928	Smith, Brian F. and Stephen J. Burke	A Cultural Resource Study for the PACTEL Cellular-Fischer Project	1994	Outside
SD-02929	Smith, Brian F.	Results of a Cultural Resource Evaluation Study for the Padre Dam Municipal Water District Phase I Reclaimed Water System Project	1993	Within
SD-03039	Robbins-Wade, Mary	Archaeological Survey of the SDG&E Power Line Relocation for Little Sycamore Canyon Landfill, San Diego County, California	1995	Outside
SD-03073	Hanna, David	Cultural Resources Survey of Sycamore Landfill Entrance Facility in San Diego, California	1994	Outside
SD-03098	Smith. Brian	Results of a Cultural Resource Study of the Padre Dam Municipal Water District Phase I Reclaimed Water System Project	1992	Within
SD-03110	Kyle, Carolyn E. and Dennis R. Gallegos	Draft Historic Properties Inventory for the East Mission Gorge Trunk Sewer Rehabilitation Project, City of San Diego	1995	Within
SD-03162	Carrico, Richard, Theodore C. Cooley, and Brian K. Glenn	National Archaeological Data Base (NADB) Information Sheet East Mission Gorge Interceptor Pump Station and Force Main Project Cultural Resource Data Recovery Report for CA SDI 9,243	1994	Within
SD-03228	Monserrate, Laurence C.	East Mission Gorge Trunk Sewer (EMGTS) Rehabilitation	1995	Within
SD-03331	Dames & Moore	Cultural Resources Survey for Ordnance Clearance at Former Camp Elliot, Mission Trails Regional Park, San Diego, California	1991	Outside
SD-03342	Kyle, Carolyn and Dennis Gallegos	Archaeological Evaluation of Prehistoric Sites CA-SDI-11606, CA-SDI-11057A AND CA-SDI-11057B, Kumeyaay Lake Campground, San Diego, California	1994	Outside
SD-03720	Schroth, Adella B., Dennis R. Gallegos, Peti Mcherny, and Nina	Historical/Archaeological Survey Report for the Water Repurification Pipeline and Advanced Water Treatment Facility, City of San Diego, California	1996	Outside

Report No.	Author(s)	Title	Year	Distance from APE
	Harris			
SD-03758	Dietler, John and Andrew R. Pigniolo	Cultural Resource Monitoring Report for the Magazine Road North Repair Project on Miramar Marine Corps Air Station San Diego County, California	2000	Within
SD-04181	City of San Diego	Clean Water Program for Greater San Diego Santee Basin Water Reclamation Project Draft Environmental Report	1990	Within
SD-04184	Sue Hector	A Cultural Resources Survey of the Proposed East Elliott Community Planning Area	1988	Within
SD-04185	Recon	Draft Environmental Impact Report for the Lake Murray, Cowles, and Fortuna Mountain Regional Park	1978	Outside
SD-04324	Westec Services, Inc. and Richard Carrico	Archaeological Survey of the Carlton Hills Community, Phase I Plan	1977	Outside
SD-04675	City of San Diego	Mitigated Negative Declaration for Sycamore Landfill Continued Operations-Brushing and Clearing	2001	Outside
SD-04692	Corum, Joyce	First Supplemental Historic Property Survey 11-SD-52 P.M. 7.3/17.2	1986	Outside
SD-04769	City od San Diego	Final Environmental Impact Report for the East Mission Gorge Trunk Sewer Rehabilitation Project, San Diego, CA	1995	Outside
SD-04934	Corum, Joyce	Extended Phase I and Phase II Archaeological Test Excavations at Sites CA-SDI-205, 5053, 8594, 9242, 10148, Santee, CA 11-SD-52 P.M. 7.3/17.2	1986	Within
SD-04981	RECON	Environmental Impact Analysis for the Santee Regional Shopping Center	1980	Outside
SD-05043	Corum, Joyce	First Addendum Archaeological Survey Report for Proposed State Route 52 Santo Road to State Route 67 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Within
SD-05138	Pigniolo, Andrew	Historic Property Survey Report for the Forester Creek Project Santee California	2001	Outside
SD-05288	Crafts, Karen C.	Negative Archaeological Survey Report-Second Addendum 11-SD-125 P.M. 20.0-22.4	1994	Outside
SD-05447	Rosen, Martin	Historical Property Survey Report Proposed Extension of State Route 125 from Fletcher Parkway in La Mesa to State Route 52 in Santee	1987	Outside
SD-05675	Kelsay, Richalene	Negative Area Survey Report District II County of San Diego	1987	Outside
SD-06014	City of San Diego	Draft EIR - Mission City Parkway Bridge and Associates Facilities	2001	Outside
SD-06301	Duke, Curt	Cultural Resource Assessment: AT&T Wireless Services Facility #10046A San Diego County, CA	2002	Outside
SD-06324	City of San Diego	Scope of Work for a Draft Environmental Impact Report for the Sycamore Landfill Master Plan (Project No. 5617)	2003	Outside
SD-06377	Robbins-Wade, Mary	Archaeological Resources Survey - Mission Trails Regional Park, Multi-Use Staging Area, San Diego	2001	Outside
SD-06526	Donovan, Mary	Negative Archaeological Survey Report, 8 Fairmount Ave., Westbound Auxiliary Lane	1985	Outside

Report No.	Author(s)	Title	Year	Distance from APE
SD-06608	Rosen, Martin D.	Negative Archaeological Survey Report-First Addendum District 11, County of San Diego	1988	Outside
SD-07464	ERCE	Santee Light Rail Transit Project: Cultural Resources Technical Report	1990	Outside
SD-07735	Tift, Larry	Cultural Resources of the Hollins Lake Campground, City of San Diego	1990	Outside
SD-07892	CALTRANS	Historic Property Survey Report I15-SR67	2001	Outside
SD-08019	Pierson, Larry J.	An Archaeological Report for the Mitigation Monitoring and Reporting Program at the Sewer Group 708 Project.	2002	Within
SD-08816	Kyle, Carolyn	Cultural Resources Survey for the Santee Aquatic/Gymnastic Center, City of Santee, California	2001	Outside
SD-08888	Kyle, Carolyn	Cultural Resource Survey for the Town Center Park, City of Santee, California	2003	Outside
SD-08993	McGinnis, Patrick and Michael Baksh	Archaeological Survey Report for the Christ the King Lutheran Church Project, Santee San Diego County, California	2004	Outside
SD-09048	Kyle, Carolyn	Cultural Resource Assessment for Cingular Wireless Facility SD 487-03, City of Santee San Diego County, California	2002	Outside
SD-09214	Robbins-Wade, Mary	Archaeological Monitoring for the East Mission Gorge Trunk Sewer Rehabilitation Project, San Diego, California (DEP NO. 94-0077; SCH NO. 95-061026)	1998	Outside
SD-09427	Gross, Timothy and Robbins-Wade, Mary	Cultural Resources Inventory: Mast Boulevard Extension Santee, California	1989	Outside
SD-09570	Guerrero, Monica and Dennis R. Gallegos	Cultural Resource Survey for the Sycamore Landfill EIR Project, City of San Diego, California	2003	Outside
SD-09661	Shultz, Richard and Alex Wesson	Cultural Resources Survey of the Proposed West Hills High Cellular Communications Site, SD60XC105B, 8756 Mast Boulevard, Santee, San Diego County, California	2005	Outside
SD-09964	Price, Harry and Charly Bull	Cultural Resources Survey Report for the Ryan Corporate Office Park Master Plan	2004	Outside
SD-10156	Clifford, Jim, Michael Hares, Shaina Seivers, and Alex Wesson	Archaeological Survey of the Proposed Henry's Avocado Grove Cellular Communications Site, SAN-213-C, 3153 Purer Road, Escondido, San Diego County, California	2006	Outside
SD-10416	Hector, Susan M.	Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California	2006	Outside
SD-10536	Glenn, Brian	Report to the Historical Board for the City of San Diego Water utilities Department, Alvarado Filtration Plant Upgrade and Expansion CIP 73-261	1993	Outside
SD-11120	Kyle, Carolyn E.	Cultural Resource Monitoring for the Forester Creek Improvement Project, City of Santee, California	2007	Outside
SD-11128	Kyle, Carolyn E.	Cultural Resource Survey for the San Diego River Restoration Project Edgemoor Property, City of Santee, California	2006	Outside

Report No.	Author(s)	Title	Year	Distance from APE
SD-11189	Pierson, Larry J.	Results of Archaeological Monitoring at Town Center Community Park Mass Grading, Santee, California (CIP 2004-31) (NEGATIVE ARCHAEOLOGICAL MONITORING REPORT)	2007	Outside
SD-11190	Kennedy, George L. and Gerald I Shiller	Paleontological Monitoring Report, Town Center Community Park Mass grading Project, City of Santee, San Diego County, California (CIP2004-31)	2007	Outside
SD-11412	Crafts, Karen	Historic Property Survey Report: State Route 52 Stage 4	2000	Outside
SD-11513	City of San Diego	Draft Environmental Impact Report for the Sycamore Landfill Master Plan	2008	Outside
SD-11850	Hector, Susan	Historical Resources Study for the Old Mission Dam Mitigation Project, San Diego, California	2007	Within
SD-11969	Bonner, W.H.	Records Search Results for T-Mobile Site (CARLTON HILLS LUTHERAN), 9735 Halberns Boulevard, Santee, San Diego County, California	2007	Outside
SD-12319	Price, Harry J.	Santee Town Center Specific Plan Amendment, Appendices to the Draft Master Environmental Impact Report	2005	Outside
SD-12455	Gardener, Jill and Brian Williams	Cultural Resources Survey for the San Diego River Watershed Invasive Non-Native Plant Control and Habitat Restoration Program at the Carlton Oaks Golf Course, Santee, California	2009	Within
SD-12526	Bonner, Wayne and Sarah Williams	Cultural Resources Search and Site Visit Results for T-Mobile USA Candidate SD06512A (FANITA RANCH WATER TANK), 8500 Organdy Lane, Santee, San Diego, California	2008	Outside
SD-12612	Robbins-Wade, Mary	Archaeological Survey Report: Biological Mitigation Parcel for the SR 163/Friars Road Interchange Improvements Project, San Diego County, California	2010	Outside
SD-12635	Rosen. Martin	Historic Property Resource Survey for the State Route 163 and Friars Road Interchange	2010	Outside
SD-13184	City of San Diego	Sycamore Canyon Landfill Master Plan Expansion	2011	Outside
SD-13202	Rosen, Martin	Cultural Resources Technical Assessment for the Program Environmental Impact Report for the San Diego River Park Master Plan, City of San Diego, California	2011	Within
SD-13226	U.S. Army Corps of Engineers	Mast Park Habitation Restoration Project, City of Santee, San Diego County, California	2011	Outside
SD-13237	Zepeda-Herman, Carmen	National Park Service Land and Water Conservation Fund Application for Padre Dam's Santee Lakes Picnic Shelter Replacement; Project No. 06-01705	2011	Outside
SD-13413	Tennesen, Kristin	ETS #22188, Cultural Resources Monitoring for the Carl Inspections, 1819Ppoles, Carl Subarea Project, San Diego County, California (HDR #179459)	2012	Outside
SD-13560	City of San Diego	Environmental Impact Report, Castlerock	2012	Outside
SD-13610	Whitaker, James E.	ETS #8032; Cultural Resources Survey for the Replacement of Tree Distribution Poles in Central Inland San Diego County, California	2009	Outside
SD-13918	City of San Diego	The San Diego River Park Master Plan	2012	Within
SD-14043	Wolf, Scott	Cultural Resources Study for the Santee Walmart Expansion Project, City of Santee, San Diego	2011	Outside

Report No.	Author(s)	Title	Year	Distance from APE
		County, California		
SD-14123	Pigniolo, Andrew, Candace Ehringer, and Madeleine Bray	Draft Phase I Cultural Resources Survey and Assessment for the El Monte Valley Mining, Reclamation, and Groundwater Recharge Project	2011	Outside
SD-14747	Loftus, Shannon	Cultural Resource Records Search and Site Survey AT&T Site SD0699 52 South and Prospect 8865 Cuyamaca Street, Santee, San Diego County, California 92071	2013	Outside
SD-14871	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for the T-Mobile West. LLC Candidate SD06480A (SD480 AL'S SPORT SHOP) 9250 Mission Gorge Road, Santee, San Diego County, California	2013	Outside
SD-15141	Phil Fulton	Cultural Resource Assessment Class I Inventory Verizon Wireless Services Rio Seco Facility, City of Santee, San Diego County, California	2014	Outside

CONFIDENTIAL APPENDIX C: NOT INCLUDED

CULTURAL RESOURCES TECHNICAL REPORT FOR THE SAN DIEGO RIVER TRAIL – CARLTON OAKS GOLF COURSE SEGMENT, CITIES OF SAN DIEGO AND SANTEE, SAN DIEGO COUNTY, CALIFORNIA

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March 2017

San Diego Association of Governments

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EXECUTIVE SUMMARY

The purpose of this study is to determine the potential effects on cultural resources during construction of the San Diego River Trail (SDRT) Carlton Oaks Golf Course Segment located in the Cities of San Diego and Santee, San Diego County, California. The San Diego Association of Governments (SANDAG) proposes to construct a Class I bikeway and related minor physical improvements over an approximately two-mile long segment between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course. The project area includes both the direct Area of Potential Effects (APE) and indirect APE. The direct APE was established as the project footprint, which includes all areas of permanent and temporary impacts. The indirect APE was established as the legal parcel on which the direct APE is located. The direct APE measures 17 acres and the indirect APE measures 262 acres. The depth of excavation along the entire bike path would be approximately 2.5 feet. The installation of a retention wall would require approximately five feet of excavation along the east slope of West Hills Parkway where the bike path will connect to West Hills Parkway. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet. SANDAG is the Lead Agency under the California Environmental Quality Act.

A cultural resources records search was completed by the South Coastal Information Center (SCIC) at San Diego State University for a 1.0 mile radius around the indirect APE on November 17, 2016. The record search indicates that no cultural resources have been previously recorded within the direct APE; however, six prehistoric archaeological sites are located within the indirect APE. Outside of the indirect APE but within the one-mile record search radius, a total of 54 cultural resources have been previously documented and consist of 31 prehistoric archaeological sites, 11 prehistoric isolates, two multicomponent sites, four historic archaeological sites, two historic isolates, and four historic resources.

An intensive pedestrian survey of the indirect and direct APEs was conducted on November 22, 2016. An existing dirt path, dirt berm, and portions of the landscaped and paved Carlton Oaks Golf Course are located within the direct APE. The survey was negative for cultural resources within the direct APE. Of the six previously recorded resources within the indirect APE, four were re-identified during the survey (P-37-005050, P-37-008594, P-37-009243, and P-37-030866). The other two resources, P-37-000205 and P-37-010148, could not be re-identified during this survey.

The direct APE has been highly disturbed as is evident by the presence of the existing dirt trail, dirt berm, and landscaping for the Carlton Oaks Golf Course. Ground disturbance for this portion of the project is anticipated to be approximately 2.5 feet. The potential for buried archaeological deposits within 2.5 feet is low due to the disturbed soils. The potential for buried archaeological

deposits under the Carlton Hills Boulevard bridge within 3 feet in is low due to the disturbed soils. One area of deeper excavation is planned for the installation of a retention wall along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. This feature would require approximately 5 feet of excavation. The potential for buried archaeological deposits within the 5 feet is low because the excavation will be within a fill condition.

The proposed project would not result in adverse impacts to any of the previously recorded cultural resources located within the indirect APE as no project activities are planned within the prehistoric sites' boundaries.

While the potential for buried archaeological deposits is low for this project due to the minimal depth of excavation within disturbed soils, the project vicinity is considered sensitive for prehistoric archaeological sites based on the number of prehistoric resources previously recorded within the indirect APE and a one-mile radius. The following recommendation is made in the event that ground disturbing activities extend into native soils.

It is recommended that prior to project implementation, all construction personnel participate in cultural resources sensitivity training conducted by a qualified archaeologist. The training will detail what types of cultural resources might be encountered and the procedure to follow if cultural resources are discovered inadvertently. The training will include a discussion on the importance of, and the legal basis for, the protection of significant archaeological resources. All personnel will sign that they understand the material presented and be issued a hard hat sticker to verify training. In addition it is recommended that a qualified archaeologist be retained on an on-call basis to respond to any unanticipated discoveries.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist can evaluate it. If human remains are unearthed during excavation, State Health and Safety Code Section 7050.5 states "there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered... [has made the appropriate assessment, and] …recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code."

Further in accordance with California Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact

the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the health and safety code have been met.

INTRODUCTION

The purpose of this study is to determine the potential effects on cultural resources during construction of the San Diego River Trail (SDRT) Carlton Oaks Golf Course Segment (proposed project) located in the Cities of San Diego and Santee, San Diego County, California (Figure 1). The proposed project would consist of a Class I bikeway and related minor physical improvements over an approximately two-mile long segment between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

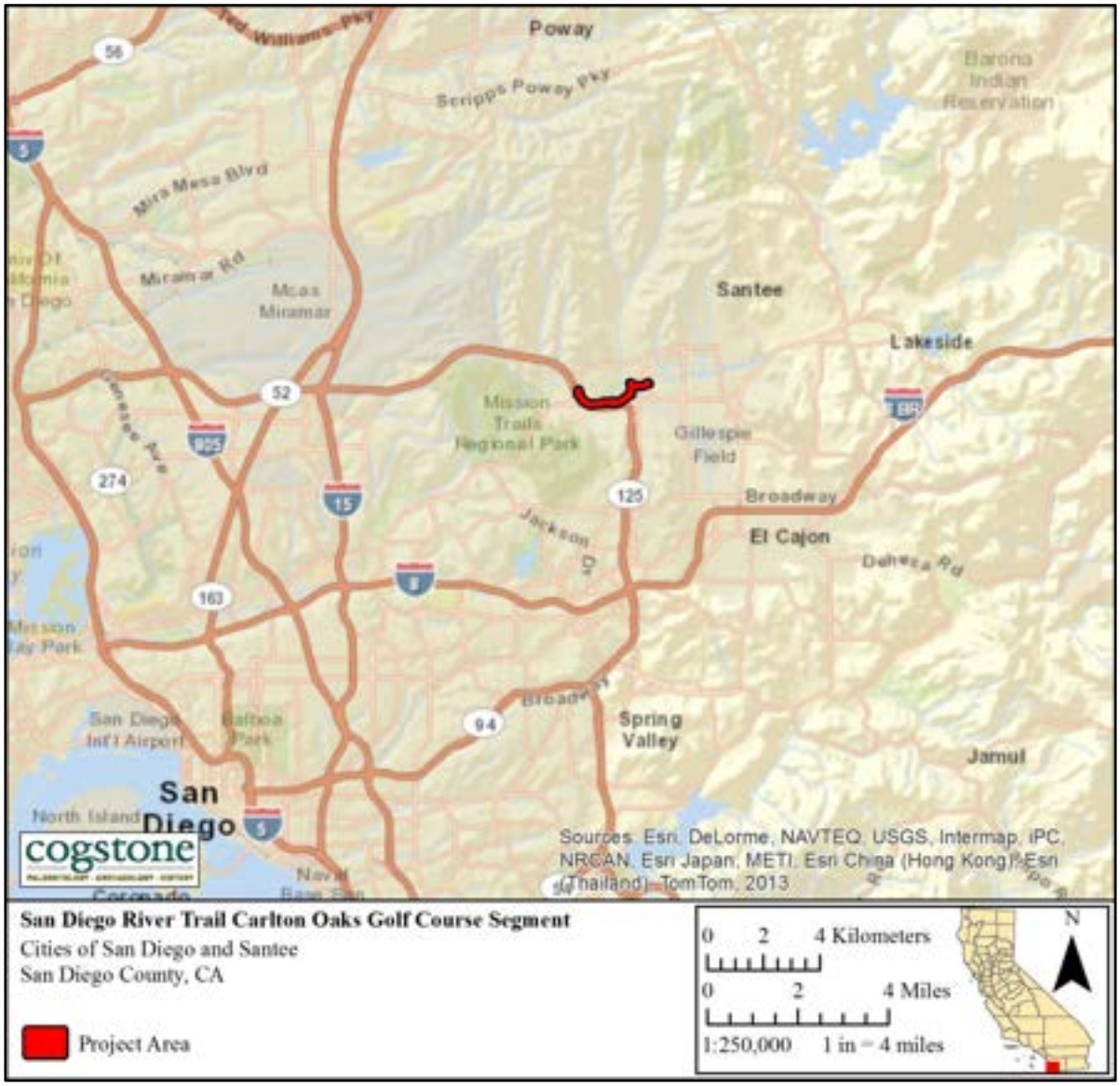


Figure 1. Project Vicinity

PROJECT DESCRIPTION AND LOCATION

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard Bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

The project is located in the El Cajon and La Mesa 7.5’ USGS topographic quadrangles within Sections 29 and 30 of Township 15 South, Range 1 West, San Bernardino Base Meridian (Figure 2). Generally, the eastern half of the bike path is located in the City of Santee and the western half is located in the City of San Diego.

The project area includes both the direct Area of Potential Effects (APE) and indirect APE. The

direct APE was established as the project footprint, which includes all areas of permanent and temporary impacts. The indirect APE was established as the legal parcel in which the direct APE is located. The direct APE measures 17 acres and the indirect APE measures 262 acres (Figures 3A-3E).

The depth of excavation along the entire bike path would be approximately 2.5 feet. The depth of excavation for the installation of a retention wall would be approximately five feet along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. The excavation of the retention wall is expected to be within a fill condition. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet, also within a fill condition.



Figure 2. Project Location

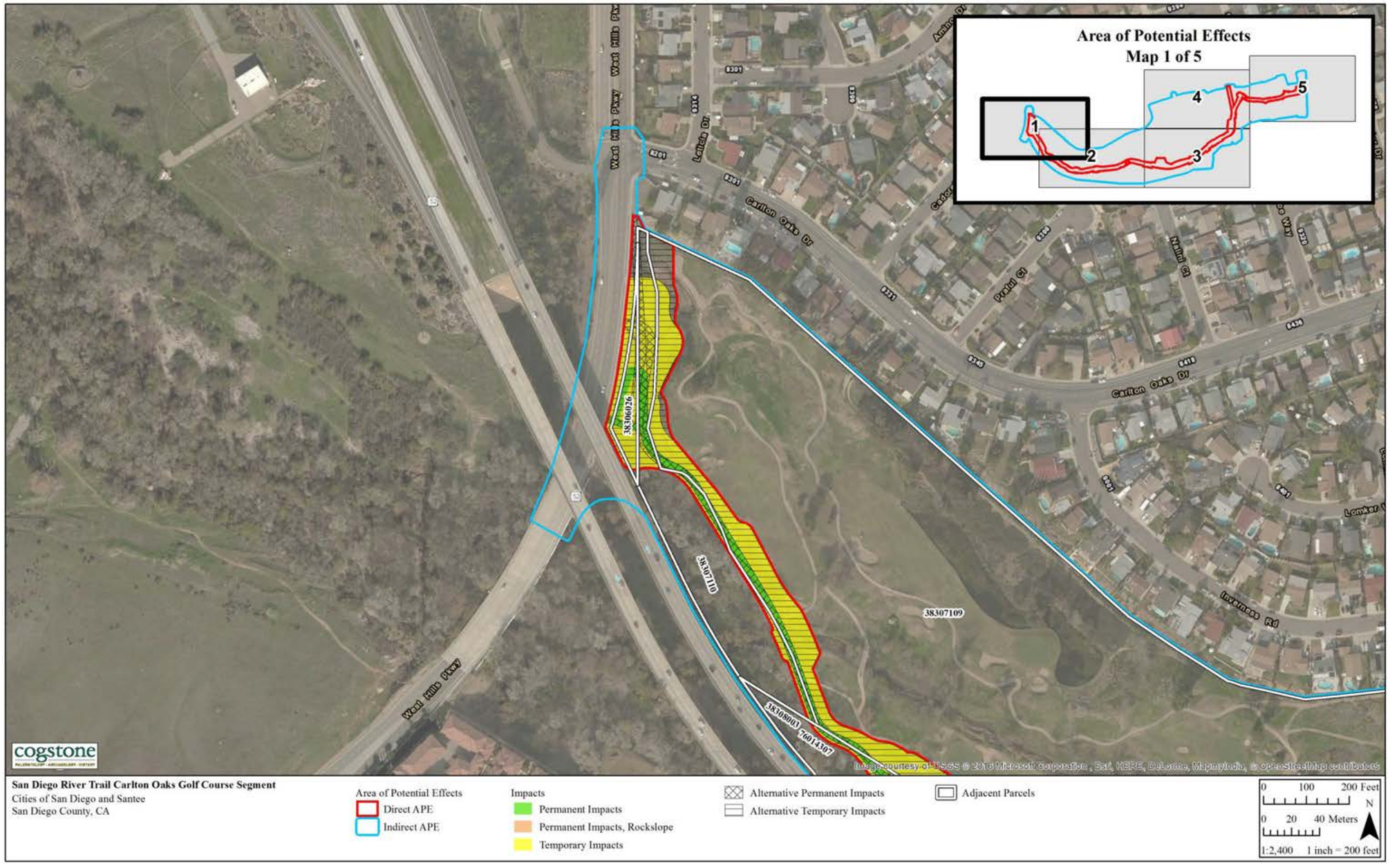


Figure 3A. Project Aerial Map (2010) Showing APE Boundary, Map 1 of 5

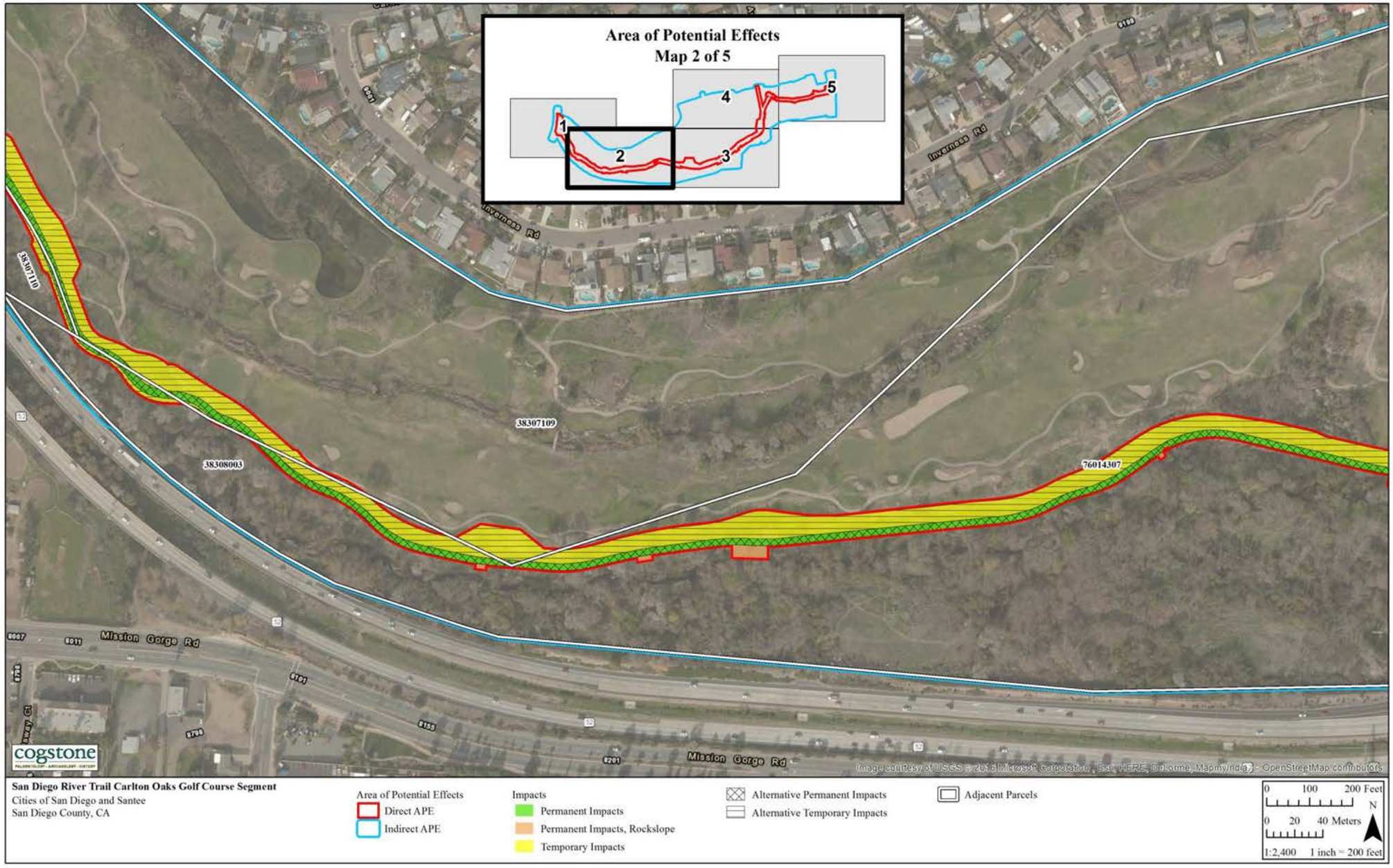


Figure 4B. Project Aerial Map (2010) Showing APE Boundary, Map 2 of 5

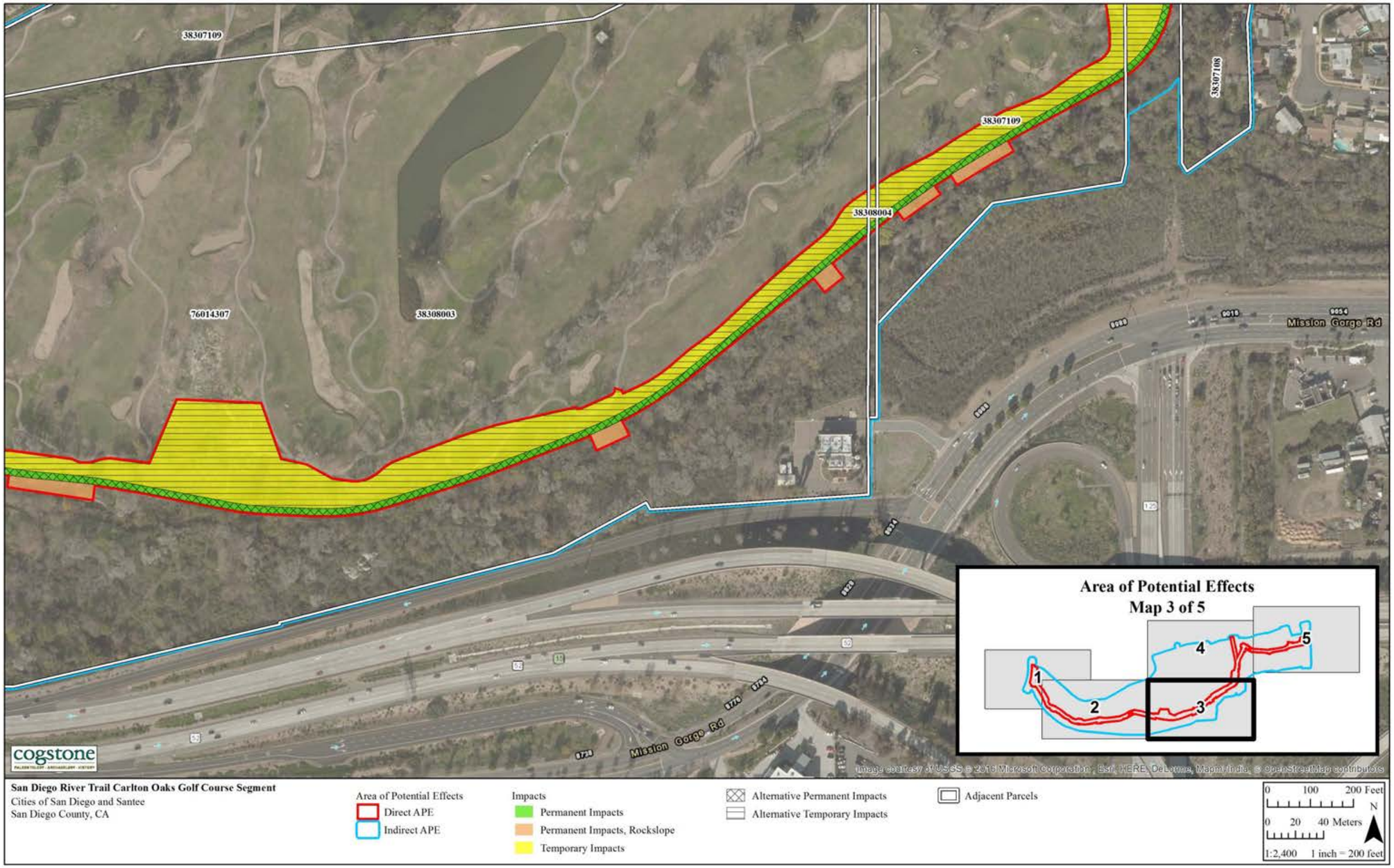


Figure 5C. Project Aerial Map (2010) Showing APE Boundary, Map 3 of 5

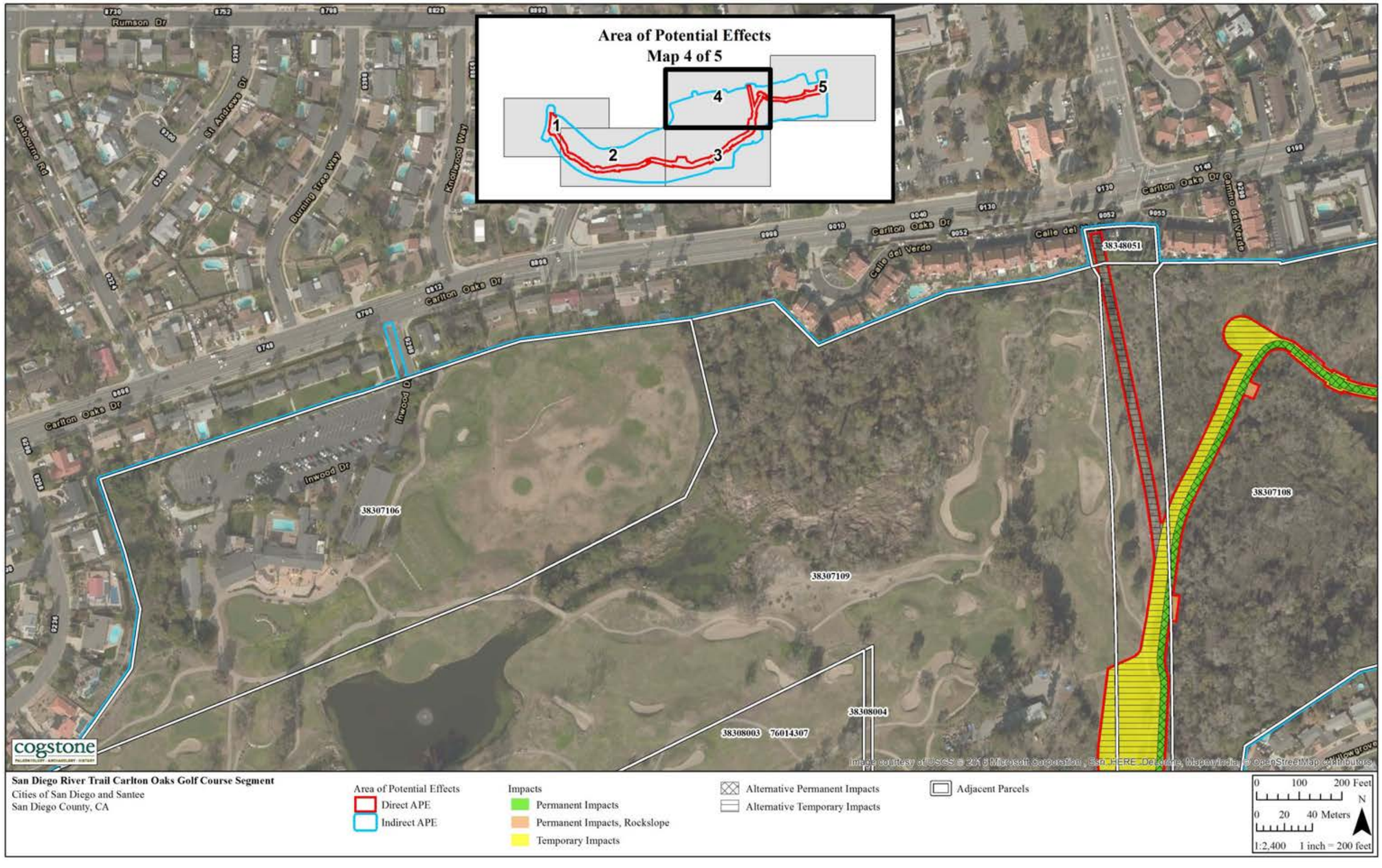


Figure 6D. Project Aerial Map (2010) Showing APE Boundary, Map 4 of 5

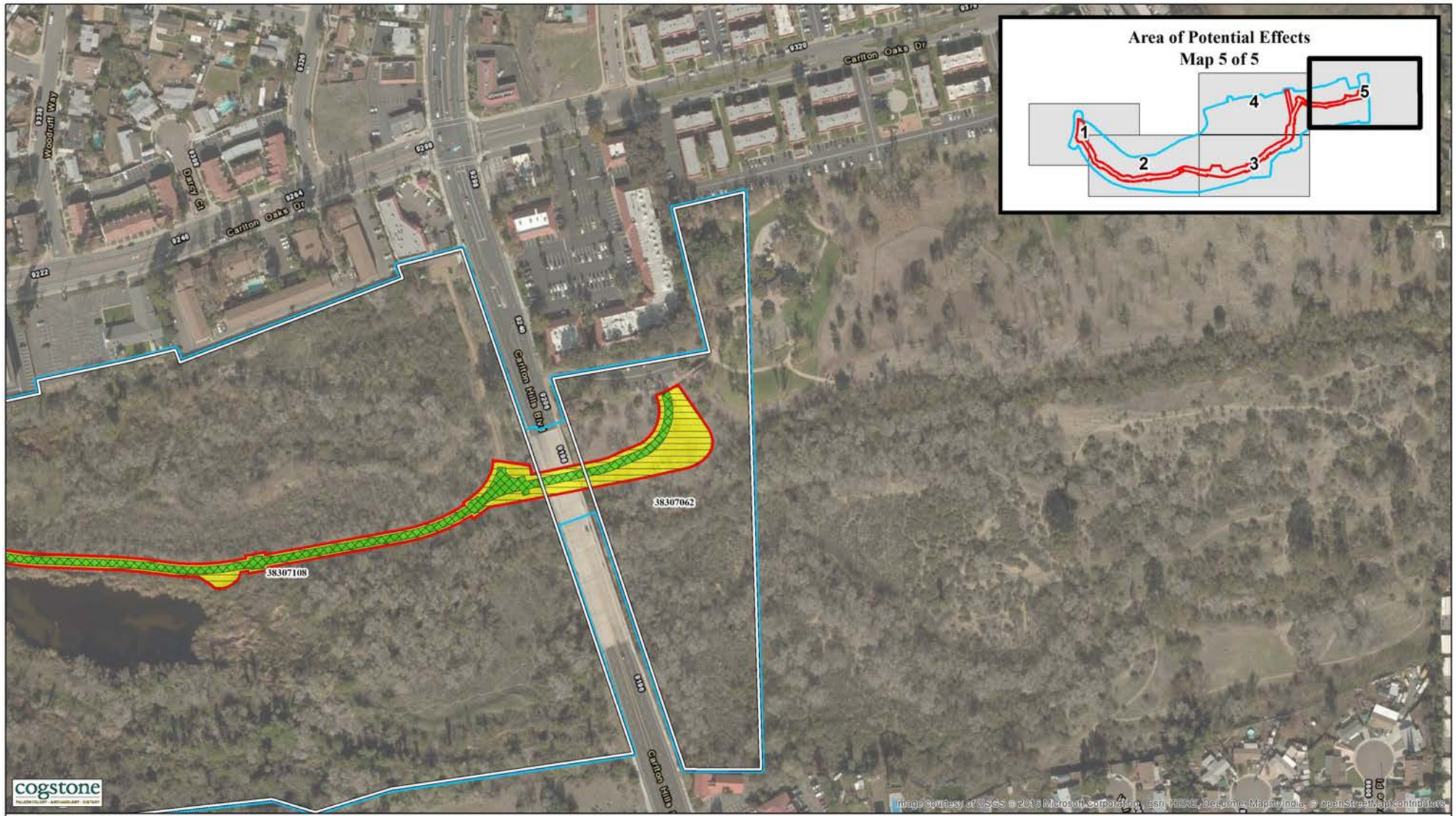


Figure 7E. Project Aerial Map (2010) Showing APE Boundary, Map 5 of 5

PROJECT PERSONNEL

Cogstone Resource Management Inc. (Cogstone) conducted this study. All personnel meet the Secretary of the Interior's Standards for Archaeology and Historic Preservation (36 CFR Part 61). Qualifications of Cogstone personnel are provided in Appendix A.

Desireé Martinez, M.A. served as the Project Manager, managed all work, and edited the report. Martinez has an M.A. in Anthropology from Harvard University and is a qualified archaeologist with 21 years of experience in California Archaeology.

Molly Valasik served as Principal Investigator and lead author. Ms. Valasik is a Registered Professional Archaeologist (RPA) and holds a B.A. in Anthropology from Ohio State University as well as an M.A. in Anthropology from Kent State University in Ohio. Ms. Valasik has over seven years of experience in California archaeology.

Sherri Gust served as author and prepared the background section of the report. Ms. Gust has a B.S. in Anthropology from the University of California at Davis and an M.S. in Anatomy from the University of Southern California and more than 35 years of experience and is an RPA.

André Simmons served as Geographic Information Systems (GIS) Analyst for the project. Mr. Simmons is a RPA and holds B.A. degrees in Anthropology and History as well as an M.A. in Anthropology (Anthropological Archaeology) from California State University, Fullerton. He has over six years of experience in California Archaeology.

Michelle Courtney conducted the survey. Ms. Courtney holds a B.S. in Anthropology and is a certified City of San Diego archaeologist with 16 years of experience in Southern California Archaeology. Holly Duke and Megan Wilson prepared portions of this report. Ms. Duke holds a B.A. in Archaeology from Simon Fraser University in Canada and has over four years of experience in California Archaeology. Ms. Wilson holds a M.A. in Anthropology from California State University, Fullerton, in an RPA and has over nine years of experience in California Archaeology. Qualifications of key project personnel are provided (Appendix A).

REGULATORY ENVIRONMENT

The project must meet the requirements of the California Environmental Quality Act (CEQA). The following discussion of applicable state laws has been excerpted and reordered from the California Department of Transportation's (Caltrans) on-line Environmental Handbook

(http://www.dot.ca.gov/ser/envhand.htm); more specifically, this information summarizes the regulatory section of Exhibit 3 of Volume 2, Cultural Resources (2001).

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) (PRC § SECTION 21000 ET SEQ.)

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities" (Caltrans 2001). It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. In the event that a project is determined to have a significant environmental effect, the act requires consideration of mitigation measures and alternatives that would avoid or substantially lessen the significant effect. CEQA includes historic and archaeological resources as integral features of the environment.

TRIBAL CULTURAL RESOURCES

In 2015 CEQA was amended and established that “[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (Pub. Resources Code, § 21084.2). A “tribal cultural resource” is defined as a site, feature, place, cultural landscape, sacred place or object, which is of cultural value to a California Native American Tribe and is either:

(1) listed, or determined to be eligible for listing, on the national, state, or local register of historic resources, or
(2) a resource that the lead agency chooses, in its discretion, to treat as a tribal cultural resource.

To help determine whether a project may have such an effect, the lead agency must consult with any California Native American Tribe that requests consultation and is traditionally and culturally affiliated with the geographic location of a proposed project. That consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (Pub. Resources Code, § 21080.3.1).

In applying those criteria, a lead agency must consider the value of the resource to the tribe. For example, in considering the criterion that a resource is “associated with the lives of persons important in our past,” a lead agency would ask whether the resource is associated with the lives of persons important to the relevant tribe’s past. That determination must be supported with substantial evidence.

If a lead agency determines that a project may cause a substantial adverse change to tribal cultural resources, the lead agency must consider measures to mitigate that impact. Public Resources Code §20184.3 (b)(2) provides examples of mitigation measures that lead agencies may consider to avoid or minimize impacts to tribal cultural resources.

CALIFORNIA REGISTER OF HISTORICAL RESOURCES (PRC § 5024.1)

PRC § 5024.1 establishes the California Register of Historical Resources. Historic resources encountered during the Project may be eligible for inclusion on the CRHR. The register is a listing of all properties considered to be significant historical resources in the state. The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks from No. 770 on. The criteria for listing are the same as those of the National Register. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources which must be given consideration under CEQA (see above). Other resources, such as resources listed on local registers of historic registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register is not automatic.

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historic integrity and are historically significant at the local, state or national level under one or more of the following four criteria:

1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;

2) It is associated with the lives of persons important to local, California, or national history;

3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or

changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion 4, it maintains the potential to yield significant scientific or historical information or specific data. No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof. Consequently local project proponents as well as state entities are required to comply with PRC 5097.5 for their own activities, including construction and maintenance, as well as for permit actions (e.g., encroachment permits) undertaken by others.

BACKGROUND

ENVIRONMENTAL SETTING

The project area is located in the Cities of San Diego and Santee within the County of San Diego and is situated in the San Diego area of the Peninsular Ranges Geomorphic Province. The Peninsular Ranges are the result of the Pacific Plate and the North American Plate grinding past each other and forming north-south trending mountain ranges where the two plates collide along the San Andreas Fault Zone. The Peninsular Range Province extends from Mount San Jacinto in the north, to Baja California in the south. The project area is characterized as a wide-open valley floor surrounded by low, boulder-strewn hills. The proposed project would be located just north of the San Diego River. The River flows approximately 52 miles from the Volcan Mountains to the Pacific Ocean in Mission Bay.

Today’s Mediterranean-like climate is characterized by warm, dry summers and cool, moist winters, with rainfall predominantly falling between November and May. Climatic conditions in this region varied substantially during prehistoric times. Paleoclimatic data based on pollen from coastal sites indicate that there was a dramatic increase in both annual temperature and precipitation between 8000 and 7000 Before Present (B.P.), which would have led to a rich, local marsh habitat. By 7000 B.P., sea levels were 10 to 15 meters below current levels, and the shore

line was at least 500 meters farther off shore than it is today (Altschul et al. 2007). The project area is within low-lying land, close to the ocean and to marshes, both of which would have offered people varied food and other resources in the past.

Natural vegetation in this portion of San Diego County includes plants from the Coastal Sage Scrub Plant Community, the Chaparral Plant Community, and marsh and wetland plants. Plants in these communities consist of coastal sagebrush, buckwheat, poison oak, lemonade berry, cacti and yucca, and would have been used for food and medicine in a prehistoric context. Trees in the area include sycamores, willows, cottonwoods, alders and maples.

PREHISTORIC SETTING

Prehistoric cultural chronology for the San Diego region subsequent to approximately 12,000 years ago is divided into three broad temporal periods: Paleoindian (San Dieguito Complex), Archaic (La Jolla Complex/Encinitas Tradition), and Late Prehistoric. The sequence is based on syntheses by M. Rogers (1939, 1945, 1966); Wallace (1955, 1978); Moriarty (1966); Warren (1967, 1968) and True (1980), among others. There is no accepted evidence of occupation in this region prior to 12,000 years ago.

The three prehistoric periods defined for the prehistoric cultural chronology of the San Diego area are as follows:

- San Dieguito Complex. This period dates from 9,030 to 8,000 years B.P. Sites from this period have been identified as part of the Western Lithic Co-Tradition or part of the Western Pluvial Lakes Tradition (Davis et al. 1969; Bedwell 1970). Occupants of most sites dating to this time period made use of coastal and inland resources. Artifacts include bifaces, knives, scrapers, cobble tools, milling tools and bone tools, used to process plants, shellfish, fish, bird and small and large mammals.
- La Jolla Complex/Encinitas Tradition. This period dates from 8,600 to 1,300 years B.P. Doughnut stones, discoidals, stone balls, plummets, Elko-eared points and stone, shell and bone beads appear in this period and shellfish gathering decreases. Hunting tools initially consisted of the atlatl and dart but quickly advanced to bow and arrow. Most sites were located in coastal areas.
- Late Prehistoric. This period dates from 1,300 years B.P. to historic contact. The cultures are divided into two groups: “San Luis Rey” (Shoshonean) in northern San Diego County and “Kumeyaay” (Yuman) in southern San Diego County. Sites from this period include ceramics, although Cuyamaca sites have a variety of type artifacts, such as pipes and effigies. Use of other traditional tools continues; marked differences between the two groups include Cuyamaca clay-lined hearths and cemeteries separate from living areas.

ETHNOGRAPHY

The project area is located within the historical territory of the Kumeyaay whose tribal territory extended as far north as the San Luis Rey River. The Kumeyaay were historically referred to as the Diegueño for their association with the Mission San Diego de Alcalá. The Takic-speaking Luiseño and Cahuilla lived to the north of the Kumeyaay, and other tribes speaking languages belonging to the Yuman language family were located to the east and to the south (Loumala 1978). The Kumeyaay can be divided into two regional groups separated by the San Diego River. The northern group is known as the Ipai and the southern group is known as the Tipai. The project area lies within the traditional territory of the Tipai group.

The Kumeyaay were organized into autonomous bands which usually occupied a main village and several smaller habitation sites. The Tipai regional group had a village called *Sinyeweche* on the San Diego River within the present-day city of Santee. Communities disbanded seasonally and established smaller groups of between 200 and 1,000 people in order to gather, process and store resources. Subgroups spoke individual dialects and often intermarried (Royo 1999).

As typical California seasonal hunters and gatherers, the Kumeyaay diet consisted mainly of plant foods, especially acorns, but also various other seeds and bulbs. This was supplemented by small game, including mammals and reptiles, and coastal inhabitants also had access to fish, shellfish and sea mammals (Loumala 1978). Plants were also utilized for medicinal and ceremonial, as well as utilitarian purposes. The medicinal use of plants covered a wide range of ailments, including European-introduced diseases such as syphilis, small pox and tuberculosis (Gallegos et al. 1998). Ceremonial usage included tattoos, girls' puberty ceremonies and rock art. A variety of objects were manufactured with plant materials, including houses, granaries, baskets, nets, adhesives, clothing and soaps (Gallegos et al. 1998). The Kumeyaay maintained extensive trade networks as far east as the Colorado River, moving acorns, dried seafood and seashells eastward and bringing salt, seeds and mesquite beans west (Loumala 1978).

HISTORIC SETTING

EXPLORATION

The earliest explorations of the San Diego area began in 1542, when Juan Rodríguez Cabrillo and his party landed near Point Loma. Cabrillo had been tasked with the exploration of the interior of the western United States by the Spanish monarch. Interaction with the Kumeyaay was initiated, but overall little attention was given to California until the 1700s.

Spanish settlement of the San Diego area began in 1769 when the Spanish developed plans to build four presidios (forts), and three towns along the California coastline stretching from San Diego northward to Monterey. The town sites, established between 1777 and 1797, included present-day Los Angeles, San Jose and a small town near Santa Cruz, named Branciforte; while the presidios were established at San Diego, Santa Barbara, Monterey and San Francisco. Under Spain, the "borderlands were colonized as defenses against the intrusion of the English, French, Dutch, and Russians, with the Manila trade an important item for protection in California. They were held by two typical institutions: the mission and the presidio" (Bolton 1913; 1921; 1930 as cited in Aviña 1976).

Mission San Diego Alcalá was also founded in 1769, the first of twenty-one Franciscan missions built along the coast on the El Camino Real, from San Diego to Sonoma. The goals of the missions were tri-fold: they helped establish a Spanish presence on the west coast, allowed for a means to Christianize the native peoples, and served to exploit the native population as laborers. The missionaries, or padres, would essentially serve as a mayor, or head of the town. The Kumeyaay socio-political structure was severely disrupted by the Mission, especially those living closest to the grounds (Loumala 1978).

THE SPANISH (1776-1820) AND MEXICAN RANCHO ERA (1821-1847)

The arrival of the Spanish missionaries brought about prevailing changes for the Native Americans, including high mortality rates and social changes due to the introduction of European diseases and customs (e.g., European farming methods) (Dobyns 1983; Walker and Hudson 1989). Due to the high mortality rates, many Native American villages were abandoned, with inhabitants fleeing to the missions.

The Kumeyaay population decreased due to disease, revolts, and changes to their traditional ways of life. The San Diego Mission however, was unique in that it allowed neophytes to move freely between the mission and traditional villages in order to hunt and gather food for the struggling mission. This allowed the Kumeyaay to experience a smaller population decline than Native Americans at other California missions. Those who did not return to the mission however, were hunted as criminals (Carrico 2008).

Mexico gained independence from Spain in 1821 taking control of the lands Spain once held. The Secularization Act of 1833 transferred much of the mission lands to political appointees. Between 1840 and 1846, the Governors of California, Juan B. Alvarado, Manuel Micheltorena and Pio Pico, made a series of land grants, transferring Mission properties to private ownership (Cowan 1977; Ohles 1997). Ranches and farms were established throughout the greater San Diego area including Rancho El Cajon of which the current project area is located.

STATEHOOD

In 1846, the Mexican-American war broke out in part because of American excursions into California. In 1847, General Andrés Pico and John C. Frémont signed the Articles of Capitulation, ending hostilities between the United States and Mexico. The U.S. and Mexico signed the Treaty of Guadalupe Hidalgo, which resulted in Mexico ceding the lands of present-day California, New Mexico, and Texas to the U.S. for $15 million (Fogelson 1993:10). Within two years of the Treaty of Guadalupe Hidalgo, California applied for admission as a state.

The County of San Diego was established in 1850, the same year as the City of San Diego. A wharf was built by business partners William Heath Davis and Alonzo Horton shortly after the County was established, and the U.S. government built supply warehouses. Davis, a businessman from San Francisco, lost his wealth in a fire and development in San Diego slowed. However in 1867, Horton purchased 960 acres on the waterfront, which was established as the New San Diego. The City population tripled over the next 20 years and reached 35,000 by the 1870s, due to gold rushes, land booms and developments in transportation (San Diego History Center 2014). A railroad connected the City to Barstow to San Diego, but slow economic development in San Diego caused the population to drop to approximately 16,150 by 1890 as people moved to Los Angeles (San Diego History Center 2014).

PROJECT AREA HISTORY

The Spanish parceled the San Diego region into land grants, which they gave to Spanish soldiers for their services. The soldiers later sold the land to American settlers, one of whom was George A. Cowles. Cowles was a prominent rancher and one of the early business leaders in San Diego. He and his wife, Jennie Blodgett Cowles, made several large purchases of ranch land in the El Cajon Valley in 1875. They began ranching two years later in 1877 and used the land to develop vineyards. Cowles also introduced pomegranate and magnolia trees to the area. By the time of his death in 1887 their estate totaled approximately 4,000 acres (City of Santee: 2014).

The City of Santee was originally founded with the name Cowleston after Cowles. When Cowles died in 1887, his widow married Milton Santee in 1890. Santee was a 19th century civil engineer, surveyor, miner, real estate developer, and entrepreneur. Originally a lieutenant from Pennsylvania in the Union Army, Santee traveled to California where he developed the city of Ramona, California and was elected to represent the 4th electoral district of the Los Angeles Common Council from 1884-1886. In 1891, the post office was established in Santee's name and later the first school, Cowles School, was built. In 1893, Cowleston was renamed Santee after Jennie lobbied to rename it in honor of her new husband, which was reluctantly passed by its citizens. In 1885, Hosmer P. McKoon purchased 9,453 acres, which he named Fanita Ranch after his wife Fannie. In 1898, the Scripps family, who found fame and fortune in newspapers, acquired 7,000 acres of Fanita ranch. They used this land to raise cattle and established a country resort for the family (City of Santee: 2014).

During World War II, the federal government acquired 2,300 acres of Fanita Ranch to the west of Santee, which they used as a military training ground. Another 4,300 acres of Fanita Ranch was purchased in 1958 by the Carlton Company (later known as the Santee-Carlton Company). The Carlton Oaks Golf Course was developed by the company and has been a local landmark since 1958. In 1976 the attempt to incorporate the city failed, but it was later incorporated in 1980 as the City of Santee (City of Santee: 2014).

A review of historic maps and imagery available for the project area indicate that as early as 1942 an unimproved road crossed the length of the northern portion of the indirect APE as well as a second road which ran north to south in the eastern portion of the indirect APE. At this time the San Diego River is depicted within the southern portion of the indirect APE as a wide wash. Little change is seen in the indirect APE until the late 1950s when the Carlton Oaks Golf Course was developed.

By 1964, aerial imagery shows a reservoir in the northern section of the indirect APE as well as access roads and evidence of grading. A second reservoir is added in the northeast indirect APE by 1980. The San Diego River also undergoes changes and by 1969, the River is depicted as a narrow wash. Between 1964 and 1971 the area around the indirect APE experiences substantial residential and urban development which continued until 1988.

RECORDS SEARCH

CALIFORNIA HISTORICAL RESOURCES INVENTORY SYSTEM

Cogstone requested a search of the California Historical Resources Inventory System (CHRIS) from the South Coastal Information Center (SCIC) at San Diego State University that included the indirect APE as well as a 1.0-mile radius buffer. The SCIC completed the request on November 17, 2016 and the results of the record search indicate that 117 previous studies have been completed within 1.0 mile of the indirect APE. Of these, 27 studies included portions of the indirect APE (Appendix B).

The results of these studies indicate that no cultural resources have been previously recorded within the direct APE; however, six prehistoric cultural resources are located within the indirect APE. None of these resources are listed in the Archaeological Determinations of Eligibility maintained by the California Office of Historic Preservation (OHP) and have not been formally evaluated for listing in the National Register of Historic Places (NRHP).

Outside of the indirect APE but within the one-mile record search radius, a total of 54 cultural resources have been previously documented (Table 1). These consist of 31 prehistoric

archaeological sites, 11 prehistoric isolates, two multicomponent sites, four historic archaeological sites, two historic isolates, and four historic resources (Table 2).

Table 1. Cultural Resource Types within 1 mile of the APE

Distance from APE in miles	Cultural Resource Type
Within the Direct APE	None
Within the Indirect APE	6 prehistoric archaeological sites
0-0.25	4 prehistoric archaeological sites
	1 multicomponent site (both prehistoric and historic materials)
0.25-0.50	7 prehistoric archaeological sites
	2 prehistoric isolates
0.50-1.0	20 prehistoric archaeological sites
	9 prehistoric isolates
	1 multicomponent site (both prehistoric and historic materials)
	4 historic archaeological sites
	2 historic isolates
	4 historic resources (built environment)

Table 2. Previously Recorded Resources within 1 mile of the APE

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-000140	CA-SDI-000140	Prehistoric Archaeological Site	Not defined	Unknown	0-0.25
P-37-000203	CA-SDI-000203	Prehistoric Archaeological Site	Prehistoric village: Bedrock milling features, ceramic sherds, lithic tools, groundstone, hearths	1978, 1994	0.5-1
P-37-000204	CA-SDI-000204	Prehistoric Archaeological Site	Bedrock milling features, shell and lithic scatter	1978, 1992, 2009	0-0.25
P-37-000205	CA-SDI-000205	Prehistoric Archaeological Site	Bedrock milling features, shell and lithic scatter	1978, 1992, 2009	Within
P-37-000206	CA-SDI-000206	Prehistoric Archaeological Site	Not defined	1978	0-0.25
P-37-004353	CA-SDI-004353	Prehistoric Archaeological Site	Milling features, quarry	1975	0.5-1
P-37-004354	CA-SDI-004354	Prehistoric Archaeological Site	Lithic scatter, cobble quarry	1975, 1996	0.5-1
P-37-004510	CA-SDI-004510	Prehistoric Archaeological Site	Temporary habitation site: Milling feature, lithics, midden	1975, 1978	0.5-1
P-37-005050	CA-SDI-005050	Prehistoric Archaeological Site	Temporary habitation site: Milling feature, lithics, ceramics, hearths, midden, groundstone	1979	Within
P-37-005052	CA-SDI-005052	Prehistoric Archaeological Site	Bedrock milling features	1972	0.5-1
P-37-005053	CA-SDI-005053	Prehistoric Archaeological Site	Rockshelter, cupules, bedrock milling features, lithic tools, ceramic sherds,	1986	0.25-0.5

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-005535	CA-SDI-005535	Multicomponent site	Groundstone, lithic tools; cobblestone foundations	1980, 1986	0.5-1
P-37-005689	CA-SDI-005689	Prehistoric Archaeological Site	Bedrock milling features	1978	0.5-1
P-37-005690	CA-SDI-005690	Prehistoric Archaeological Site	Projectile point, lithic scatter	1978	0.5-1
P-37-005691	CA-SDI-005691	Prehistoric Archaeological Site	Lithic tools, lithic scatter	1978	0.5-1
P-37-005985	CA-SDI-005985	Prehistoric Archaeological Site	Lithic tools	1968	0.5-1
P-37-007603	CA-SDI-007603	Prehistoric Archaeological Site	Lithic tools, groundstone, hearth	1981	0.5-1
P-37-008594	CA-SDI-008594	Prehistoric Archaeological Site	Habitation Site, bedrock milling features, lithic tools, groundstone, ceramic sherds, bone tool, daub, faunal remains, ceremonial artifacts	1967, 1975, 1992, 2009	Within
P-37-009242	CA-SDI-009242	Multicomponent site	Lithic tools, groundstone, historic artifacts	1967, 1982, 1986, 1992	0-0.25
P-37-009243	CA-SDI-009243	Prehistoric Archaeological Site	Habitation site; human remains, bedrock milling features, hearths, lithic tools, groundstone, ceramics, fish net weight, midden	1978, 1982, 1984, 1992, 2009	Within
P-37-009245	CA-SDI-009245	Historic Archaeological Site	Historic trash scatter	1982	0.5-1
P-37-010052	CA-SDI-010052	Prehistoric Archaeological Site	Bedrock milling feature	1978	0.5-1
P-37-010053	CA-SDI-010053	Prehistoric Archaeological Site	Lithic tools and debitage	1978	0.25-0.5
P-37-010054	CA-SDI-010054	Prehistoric Archaeological Site	Milling features, groundstone, lithic tools and debitage	1978, 1996	0.25-0.5
P-37-010148	CA-SDI-010148	Prehistoric Archaeological Site	Lithic tools and debitage, groundstone, faunal remains, hearth, ceramic sherd	1984, 1986, 2009	Within
P-37-011057	CA-SDI-011057	Prehistoric Archaeological Site	Bedrock milling feature, groundstone, lithic tools and debitage	1988, 1990, 1993	0.25-0.5
P-37-011459	CA-SDI-011459	Prehistoric Archaeological Site	Lithic and groundstone scatter	1989	0.25-0.5
P-37-011542	CA-SDI-011542	Historic Archaeological Site	Foundations, historic refuse deposit	1989	0.5-1
P-37-011543	CA-SDI-011543	Prehistoric Archaeological Site	Lithic Scatter	1989	0.5-1
P-37-011606	CA-SDI-011606	Prehistoric Archaeological Site	Bedrock milling features, ceramic scatter	1990	0.5-1
P-37-011607	CA-SDI-011607	Prehistoric Archaeological Site	Lithic and groundstone scatter, hearth	1990	0.5-1
P-37-011608	CA-SDI-011608	Prehistoric Archaeological Site	Lithic and groundstone scatter, hearth	1990	0.5-1
P-37-011761	CA-SDI-011761	Historic Archaeological Site	Historic cistern	1990	0.5-1

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-012086	CA-SDI-012086	Prehistoric Archaeological Site	Prehistoric fishing weir, lithic tools, hearth	1990	0.5-1
P-37-013592	CA-SDI-013592	Prehistoric Archaeological Site	Lithic tools and debitage	1994	0.25-0.5
P-37-013593	CA-SDI-013593	Prehistoric Archaeological Site	Lithic tools and debitage	1994, 2011	0.25-0.5
P-37-014905		Prehistoric Isolate	Lithic tool	1988	0.5-1
P-37-014908		Prehistoric Isolate	Lithic tool	1989	0.25-0.5
P-37-014909		Prehistoric Isolate	Lithic tool	1989	0.5-1
P-37-016210		Prehistoric Isolate	Lithic tool	1997	0.5-1
P-37-016211		Prehistoric Isolate	Lithic tool	1997	0.5-1
P-37-020910		Historic Resource	Dam; "Old Mission Dam"; 1800: HRI: 2138-0011-0000, California Historic Landmark No. 52	Unknown	0.5-1
P-37-025460	CA-SDI-016904	Prehistoric Archaeological Site	Lithic and groundstone scatter	2003	0.5-1
P-37-029009		Historic Resource	Single family residence, post WWII ranch-style, 1951	2012	0.5-1
P-37-029011		Historic Resource	Single family residence, vernacular-style, 1936	2012	0.5-1
P-37-030866	CA-SDI-019604	Prehistoric Archaeological Site	Bedrock milling feature	2009	Within
P-37-032809	CA-SDI-020746	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032810	CA-SDI-020747	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032811	CA-SDI-020748	Historic Archaeological Site	Trash scatter	2012	0.5-1
P-37-032812	CA-SDI-020749	Prehistoric Archaeological Site	Lithic scatter	2012	0.5-1
P-37-032813		Historic Isolate	Abandoned cars	2011	0.5-1
P-37-032814		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032815		Prehistoric Isolate	Lithic tool	2011	0.5-1
P-37-032819		Prehistoric Isolate	Groundstone	2012	0.25-0.5
P-37-032820		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032821		Prehistoric Isolate	Lithic tool	2012	0.5-1
P-37-032822		Prehistoric Isolate	Groundstone	2012	0.5-1
P-37-032823		Historic Isolate	Abandoned car	2012	0.5-1

Primary Number	Trinomial Number	Resource Type	Resource Description	Date	Distance From APE (miles)
P-37-032824		Historic Resource	Engineering structure: Sycamore Landfill, 1963	2012	0.5-1
P-37-035815	CA-SDI-021860	Prehistoric Archaeological Site	Lithics, groundstone, hearths, shell and faunal remains	2016	0-0.25

CULTURAL RESOURCES LOCATED WITHIN THE INDIRECT APE

P-37-000205 (CA-SDI-000205)

P-37-000205 is a prehistoric archaeological site located on the southern boundary of the indirect APE and 419 feet south of the direct APE. The site was originally recorded by Malcom Rogers in an unknown year, who noted the site as approximately one acre in size, consisting of "lithic material". Caltrans was unable to relocate the site in 1986 and 1991. Archaeological monitoring in 1992 identified a number manos, cobbles, and cores in the western portion of the site. An archaeological survey in 2009 by Brian Williams and Lucas Piek of ASM Affiliates was unable to locate the site.

P-37-005050 (CA-SDI-005050)

P-37-005050 is a prehistoric archaeological site located on the southeastern boundary of the indirect APE and 503 feet south of direct APE. The site was recorded by Roy Pettus in 1979 who described it as a Late Prehistoric site with midden, numerous milling features, ceramic and lithic artifacts.

P-37-008594 (CA-SDI-008594)

P-37-008594 is a prehistoric habitation site located on the southern boundary of the indirect APE and 254 feet south of the direct APE. The site was originally recorded by Chris Christensen and Lynne Christensen in 1981 as a bedrock milling feature with two mortars, numerous slicks and basins, and two mano fragments. In 1986, the site was revisited by Joyce Corum who recorded seven bedrock milling features with two mortars, 12 basins, and 15 slicks and three features with eight slicks. Subsurface testing uncovered 296 pieces of debitage, three cores, two flakes, and 129 pieces of animal bones. In 1992 Carolyn Kyle of Gallegos and Associates expanded the site to included 19 bedrock milling features with basins, slicks, mortars, and grinding areas, a yoni (ceremonial feature) lithic tools, bone tools, groundstone, metates, daub fragments, and ceramic sherds. A 2009 survey by Brian Williams and Lucas Piek of ASM Affiliates recorded possible historic glass. The SCIC documents two site locations for P-37-008594. It is likely that the site was originally mapped in one location and then relocated in another area in a subsequent survey.

P-37-009243 (CA-SDI-009243)
P-37-009243 is a prehistoric habitation site located on the southern boundary of the indirect APE and 205 feet south of the direct APE. This site was originally recorded by Anna Noah in 1982 as a milling feature with seven basins and one slick, and three possible quartz flakes. In 1986 the site was revisited by Joyce Corum and Karen Crotteau and updated to include six milling basins, several slicks, ground stone and lithics. In 1986, subsurface testing indicated the presence of 34 potsherds, 17,065 pieces of debitage, 49 cores, 19 hammer stones, 36 flake tools, 12 core tools, 40 projectile points, 14 bifaces, 58 manos, 21 groundstone fragments, marine shell and animal bone, as well as two cupules. Theodore Cooley and Patricia Mitchell of Ogden Environmental and Energy Services visited the site in 1992 and subsurface testing found bedrock milling features, four hearths, two kiln features, two oven features, 65,876 pieces of debitage, lithic tools, projectile points and bifaces, groundstone, ceramics, bone tools, fishing tools, asphaltum, ochre, daub, marine shell and faunal remains, and possible human remains. Radiocarbon samples dated the site to between 5740 +/- 100 B.P. and 1340 +/- 60 B.P. A survey by Brian Williams and Lucas Piek of ASM Affiliates in 2009 relocated the site and observed more lithic tools, groundstone, milling features, and animal bone on the surface.

P-37-010148 (CA-SDI-10148)
P-37-010148 is a prehistoric archaeological site located on the southern boundary of the indirect APE and 164 feet south of the direct APE. The site was originally recorded in 1984 by Jay Thasken of Westec Services as consisting of lithic tools, debitage, groundstone, and one ceramic sherd. Subsurface testing uncovered additional lithic tools and debitage as well as groundstone artifacts. Joyce Corum relocated the site in 1986 and subsurface testing produced 1,354 pieces of debitage, eight core tools, five hammerstones, debitage, 2,485 pieces of animal bone, hearth features and charcoal. No artifacts were observed in the 2009 survey by Brian Williams and Lucas Piek of ASM Affiliates.

P-37-030866 (CA-SDI-019604)
P-37-030866 is a prehistoric milling feature located in the east-central indirect APE and 433 feet north of the direct APE. The site was recorded by Brian Williams and Lucas Piek of ASM Affiliates in 2009 and consists of two bedrock milling outcrops with six milling surfaces.

OTHER SOURCES

In addition to the records at the SCIC, a variety of sources were consulted by Megan Wilson in November 2016 to obtain information regarding the indirect APE (Table 3). Sources include the National Register of Historical Places (NRHP), California Register of Historical Resources

(CRHR), California Historical Resources Inventory (CHRI), California Historical Landmarks (CHL), California Points of Historical Interest (CPHI) and local historical registers. Specific information about the project area, obtained from historic maps and aerial photography is presented in the Project Area History section of this report.

Table 3. Additional Sources Consulted

Source	Results
National Register of Historic Places (NRHP; 1979-2002 & supplements)	Negative
Historic USGS Topographic Maps	The 1942 La Mesa 1:31,680 topographic map and 1942 El Cajon 1:62,500 topographic map show an unimproved road crossing the length of the northern portion of the indirect APE and another road cutting north/south on the eastern portion. The San Diego River is seen on the southern portion of the indirect APE as a wide wash and by 1967 the La Mesa and El Cajon 1:24,000 topographic maps depict the river as a narrow wash. The 1955 El Cajon 1:24,000 topo map shows that the northern unimproved road removed. A major residential development surrounds the indirect APE by 1969 and development continues until 1998.
Historic US Department of Agriculture Aerial Photographs	The 1953 aerial shows the indirect APE as undeveloped and consists of the San Diego River plain. In 1964, the aerial show a reservoir established in the north-central section of the indirect APE along with access roads and evidence of grading. Between 1964 and 1971 around the indirect APE experienced substantial residential development. In 1980, another reservoir was added to the northeast portion of the indirect APE.
California Register of Historical Resources (CRHR; 1992-2014)	Negative
California Historical Resources Inventory (CHRI; 1976-2014)	Negative
California Historical Landmarks (CHL; 1995 & supplements to 2014)	Negative
California Points of Historical Interest (CPHI; 1992 to 2014)	Negative
Bureau of Land Management (BLM) General Land Office Records	Positive; Helena Miguel Victoria Isabel Miguel Miguel Pedrorena Dona Maria Antonio Peronena Maria Antonio Peronena Thomas W. Sutherland; Spanish/Mexican Land Grant, 1851

FIELD SURVEY

SURVEY METHODS

The survey stage is important in a project's environmental assessment phase to verify the exact location of each identified cultural resource, the condition or integrity of the resource, and the proximity of the resource to areas of cultural resources sensitivity. All undeveloped ground surface areas within the ground disturbance portion of the project area were examined for artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools or fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions and features indicative of the former presence of structures or buildings (e.g., postholes, foundations), or historic-era debris (e.g., metal, glass, ceramics). Existing ground disturbances (e.g., cutbanks, ditches, animal burrows, etc.) were visually inspected. Photographs of the project area, including ground surface visibility and items of interest, were taken with a digital camera.

Michelle Courtney of Cogstone conducted an intensive-level pedestrian survey of the direct and indirect APE on November 22, 2016. The survey consisted of 15 meter-wide parallel transects within the APE, other than in hardscaped areas with no ground visibility, while closely inspecting the ground surface.

SURVEY RESULTS

An existing dirt path, dirt berm, and portions of the landscaped and paved Carlton Oaks Golf Course are located within the direct APE limiting ground visibility. Outside of the landscaped golf course, ground visibility ranged from poor to good. Visibility was poor (approximately 10 percent) in areas where vegetation such as cottonwood leaves covered the ground (Figure 4). Visibility was good (approximately 95-100 percent) along the existing dirt path however the path is heavily disturbed (Figure 5). The survey of the direct APE was negative for cultural resources.

Ground visibility within the indirect APE was poor. Areas around the river had poor visibility due to dense vegetation with visibility ranging from approximately 50 to 75 percent (Figure 6). Modern trash was noted throughout the indirect APE, but was mostly concentrated around the river. Homeless tents were heavily concentrated in one location near the river, which was not surveyed due to safety concerns. Invasive non-cultural shell was noted at UTM (NAD 83) coordinates 0498028 mE 3633285 mN, but no midden was present. No materials were collected during the survey and no new cultural resources were identified within the indirect APE.



Figure 4. Ground Visibility along Future West End of Dirt Bike Path, View to the East



Figure 5. Ground Visibility along Future West End of Dirt Bike Path, View to the East



Figure 6. Ground Visibility near River, View to the North

CULTURAL RESOURCES WITHIN THE INDIRECT APE

A total of six prehistoric resources were previously recorded within the indirect APE (Confidential Appendix C). Of these, four of the resources, P-37-005050, P-37-008594, P-37-009243, and P-37-030866, were re-identified during the pedestrian survey. All sites were found in the same condition as recorded on their respective Department of Parks and Recreation (DPR) 523 site forms, site record updates were not prepared. Two sites, P-37-000205 and P-37-010148, could not be re-identified during this survey.

STUDY FINDINGS

No cultural resources have been previously recorded and none were observed within the direct APE during the pedestrian survey (see Confidential Appendix C). However, prehistoric archaeological sites are known within the indirect APE including six prehistoric archaeological sites of which four were re-identified during the survey.

The direct APE has been highly disturbed as is evident by the presence of the existing dirt trail, dirt berm, and landscaping for the Carlton Oaks Golf Course. Ground disturbance for this portion of the project is anticipated to be approximately 2.5 feet. The potential for buried archaeological deposits within 2.5 feet is low due to the disturbed soils. Excavation under the Carlton Hills Boulevard bridge for the construction access road would be approximately 3 feet. The potential

for buried archaeological deposits within 3 feet in this area is low due to the disturbed soils. One area of deeper excavation is planned for the installation of a retention wall along the east slope of West Hills Parkway where the bike path would connect to West Hills Parkway. This feature would require approximately 5 feet of excavation. The potential for buried archaeological deposits within the 5 feet is low because the excavation will be within a fill condition.

No impacts are anticipated for the previously recorded cultural resources located within the indirect APE as no project activities are planned within the prehistoric sites' boundaries.

RECOMMENDATIONS

While the potential for buried archaeological deposits is low for this project due to the minimal depth of excavation within disturbed soils, the project vicinity is considered sensitive for prehistoric archaeological sites based on the number of prehistoric resources previously recorded within the indirect APE and one-mile radius. The following recommendation is made in the event that ground disturbing activities extend into native soils.

It is recommended that prior to project implementation all construction personnel participate in cultural resources sensitivity training conducted by a qualified archaeologist. The training will detail what types of cultural resources might be encountered and the procedure to follow if cultural resources are discovered inadvertently. The training will include a discussion on the importance of, and the legal basis for, the protection of significant archaeological resources. All personnel will sign that they understand the material presented and be issued a hard hat sticker to verify training.

In addition it is recommended that a qualified archaeologist be retained on an on-call basis to respond to any unanticipated discoveries.

In the event of an unanticipated discovery, all work must be suspended within 50 feet of the find until a qualified archaeologist can evaluate it. If human remains are unearthed during excavation, State Health and Safety Code Section 7050.5 states "there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered... [has made the appropriate assessment, and] …recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code."

Further in accordance with California Health and Safety Code Section 7050.5, the County Coroner must be notified if potentially human bone is discovered. The Coroner will then determine within two working days of being notified if the remains are subject to his or her authority. If the Coroner recognizes the remains to be Native American, he or she shall contact the Native American Heritage Commission (NAHC) by phone within 24 hours, in accordance with Public Resources Code Section 5097.98. The NAHC will then designate a Most Likely Descendant (MLD) with respect to the human remains. The MLD then has the opportunity to recommend to the property owner or the person responsible for the excavation work means for treating or disposing, with appropriate dignity, the human remains and associated grave goods. Work may not resume in the vicinity of the find until all requirements of the health and safety code have been met.

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APPENDIX A: QUALIFICATIONS

MOLLY VALASIK, RPA

Principal Investigator for Archaeology

EDUCATION

2009 M.A., Anthropology, Kent State University, Kent, Ohio
2006 B.A., Anthropology, Ohio State University, Columbus, Ohio

SUMMARY QUALIFICATIONS

Ms. Valasik is a Registered Professional Archaeologist (RPA) with eight years of professional and academic archaeological field and research experience. She meets the qualifications required by the Secretary of the Interior's *Standards for Archaeology*, and is a skilled professional who is well-versed in the compliance procedures of CEQA and Section 106 of the NHPA and in working with a variety of federal, state, and local agencies throughout California. Ms. Valasik has managed a variety of projects at Cogstone in the water, transportation, energy, development and federal sectors. Her role at Cogstone has ranged from GIS Manager, Field Director, Archaeology Supervisor, and beginning in 2014 Principal Investigator for Archaeology.

SELECTED PROJECTS

Rose Creek Bike Trail, San Diego Association of Governments (SANDAG), San Diego, San Diego County, CA. Prepared archaeological Phase I assessment including record search, Native American consultation, survey, impact analysis and recommendations for new 2-mile bike trail along creek. Sub to Nasland Engineering. Principal Investigator. 2014

13th Street Bridge, County of San Diego Department of Public Works, Caltrans, San Diego County, CA. Prepared archaeological Phase I assessment including record search, survey, impact analysis and recommendations for bridge replacement. Sub to ICF Jones & Stokes. Principal Investigator. 2013

SR-138 Palmdale Boulevard PA/ED (Sierra Highway), Caltrans District 7, Palmdale, Los Angeles County, CA. Managed cultural resource assessment including records search, Sacred Lands search, NAHC consultation, field survey, mapping. Prepared an Archaeological Survey Report (ASR) and Historic Property Survey Report (HPSR) to Caltrans standards for PA/ED environmental documents. Sub to Parsons. Task Manager/Principal Investigator. 2015-ongoing

Park Place Extension and Grade Separation EIR EA, Caltrans District 7, El Segundo, Los Angeles County, CA. Managed a pedestrian survey to record and evaluate cultural resources within the archaeological and architectural APEs for a ~0.5-mile project along NBSF and UPRR rail lines and spur tracks on behalf of the City of El Segundo. Cogstone's services included records search, NAHC consultation, Historic Properties Survey Report (HPSR) with appended Archaeological Survey Report (ASR) and a Historic Resources Evaluation Report (HRER). Seven built-environment resources were identified, evaluated, and DPR 523 forms were prepared. Sub to Michael Baker. Principal Investigator. 2015-ongoing

I-5 Jeffrey Open Space Trail (JOST) Segments 1 & 2, Caltrans District 12, Irvine, Orange County, CA. For the construction of a recreational trail and bridge, coordinated record search, Sacred Lands search, NAHC consultation; preparation of Area of Potential Effects (APE) maps for archaeological and architectural resources with RBF and Caltrans; intensive pedestrian survey and mapping; preparation of ASR, HPSR, PIR technical reports on behalf of the City of Irvine in compliance with CEQA. Sub to Michael Baker. Task Manager/ Principal Archaeologist. 2015-ongoing

I-405 Freeway Trail Lighting Improvements Project, City of Irvine/ Caltrans District 12, Orange County, CA. Literature and Sacred Lands searches, extended Native American consultation, hydrogeological study of San Diego Creek Watershed, survey, and technical reports (HPSR and ASR) for improvements to lighting along existing bikeway. NHPA Section 106 compliance. Sub to RBF. Archaeologist and Co-Author. 2014

SHERRI GUST, RPA
Principal Investigator for Archaeology and Paleontology

EDUCATION

1994 M. S., Anatomy (Evolutionary Morphology), University of Southern California, Los Angeles

1979 B. S., Anthropology (Physical), University of California, Davis

SUMMARY QUALIFICATIONS

Gust is a Registered Professional Archaeologist and Qualified Professional Paleontologist with more than 35 years of experience in California. She is accepted as a principal investigator for both prehistoric and historical archaeology by the State Office of Historic Preservation's Information Centers. She holds statewide BLM permits for cultural and paleontology as a principal investigator, a BLM paleontology permit for Nevada as principal investigator and is a certified/qualified principal archaeologist and paleontologist in most California cities and counties that maintain lists. Gust is a Research Associate of the Natural History Museum of Los Angeles County in the Vertebrate Paleontology and Rancho La Brea Sections. She is a Member of the Society of Vertebrate Paleontology, Society for Archaeological Sciences, Society for Historical Archaeology, the Society for California Archaeology and others. She has special expertise in the identification and analysis of human, animal and fossil bone. In addition, she is a Reader at the Huntington Library and is experienced in archival research.

SELECTED SAN DIEGO PROJECTS

Rose Creek Bike Trail, San Diego Associate of Governments, San Diego, CA. The project proposed construction of a bike trail to connect existing trails. Managed all work to prepare a cultural resources constraints analysis, Archaeological Survey Report (ASR), Historic Property Survey Report (HPSR) and Historic Resources Evaluation Report (HRER). Sub to Nasland Engineering. Project Manager/Principal Archaeologist. 2012-2016

Pilgrim Creek Vector Habitat Remediation Design, Oceanside, San Diego County, CA. The project is located at the Oceanside municipal golf course adjoining MCB Camp Pendleton and will implement long-term solutions to reduce or eliminate mosquito breeding habitat. Conducted a records search, sacred lands search, Native American consultation, reporting and mitigation recommendations. Sub to Michael Baker. Project Manager/Principal Archaeologist. 2014

SR 94 Improvement Project, between Jamacha and Jamul, Caltrans District 11, San Diego County, CA. The project was improvement to six interchanges. Managed record searches, research, survey and co-authored a combined Paleontological Identification Report and Paleontological Evaluation Report (PIR/PER). Sub to Environmental Data Systems. Project Manager/Principal Paleontologist. 2013

Environmental Consulting Services on an As-Needed Basis for FHWA-Funded Projects, County of San Diego Department of Public Works, San Diego County, CA. Assessments, surveys, record searches, APE mapping, ASR/HPSR, Native American consultation, monitoring and compliance reporting for various projects including: 13th Street Bridge, Descanso Pathway, and Buckman Springs Bridge. Sub to ICF. Project Manager/Principal Archaeologist. 2013-2016

Batiquitos Lagoon Double Track, San Diego Associate of Governments (SANDAG), Leucadia, Encinitas, Carlabad, San Diego County, CA. The project proposes to construct a 2.7-mile-long segment of double-track, grade crossing modifications, site improvements (drainage, culverts, utilities), signal modifications and a bridge crossing at Batiquitos Lagoon. Managed record searches, sacred lands search, Native American consultation, survey and separate cultural and paleontology reports. Co-author of reports. Currently preparing to conduct Phase II testing of a prehistoric archaeological site. Sub to HNTB. Principal Investigator. 2013-present

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

DESIREÉ RENEÉ MARTINEZ
Task Manager/Archaeologist

EDUCATION

1999 M.A., Anthropology (Archaeology), Harvard University, Cambridge
1995 B.A., Anthropology, University of Pennsylvania, Philadelphia

SUMMARY QUALIFICATIONS

Ms. Martinez is a qualified archaeologist with 20 years of experience in archaeological fieldwork, research, and curation. She has expertise in the planning, implementation, and completion of all phases of archaeological work and has participated in archaeological investigations as a crew member, tribal monitor, and principal researcher. She meets national standards in archaeology set by the Secretary of Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the standards outlined in Attachment 1 to Caltrans Section 106 Programmatic Agreement with the FHWA. Her experience also includes compliance with CEQA, NEPA, NAGPRA, SB 18 and other cultural resource laws. In addition, Ms. Martinez has vast experience in lab analysis and museum collections management. Ms. Martinez also has extensive experience consulting with Native American leaders and community members in a variety of contexts.

SELECTED PROJECTS

High Desert Corridor/ SR-138 Widening Project, Caltrans District 7 On-Call (07A3145)/LA Metro, Los Angeles and San Bernardino Counties, CA. This project proposed by Caltrans and Metro involves construction of a new, approximately 63-mile long, east-west freeway/expressway and rail line between SR-14 in Los Angeles County and SR-18 in San Bernardino County. Phase II/III testing and data recovery at the three sites that will be directly impacted by the project. Analyzed lithic material. Compliance with Section 106 of the NHPA and CEQA are required. Sub to Parsons Transportation Group. Principal Archaeologist. 2015-ongoing

Devers-Palos Verde 500 kV No. 2 Transmission Line Project, Southern California Edison, Devers Valley, Riverside County, CA. Provided regulatory oversight and project management regarding cultural and paleontological resources. This new transmission line connects several large-scale solar and conventional generation projects. Developed environmental compliance training to inform and guide construction and major capital project teams. Assisted in the preparation of the Historic Properties Treatment Plan. Provided environmental analyses and clearance documentation of project modifications during construction without delay to project. Oversaw the monitoring of sites along the Devers-Valley portion of the project. Collected extensive archaeological, ethnohistorical and historical information about the use and significance of Edom Hill, located in Desert Hot Springs, and the Lakeview Mountains, located in Lakeview, to the Southern California Native American tribes. Prepared evaluation reports of the hill and mountains for inclusion in the National Register of Historic Places as a Traditional Cultural Properties. Lead In-house Consultant Archaeologist. 2011- 2014

Devers-Mirage Project, Southern California Edison, Palm Springs, Riverside County, CA. Evaluated Garnet Hill (aka Hoon wit ten ca va), located in Palm Springs, for inclusion in the National Register of Historic Places as a Traditional Cultural Property. Collected extensive archaeological, ethnohistorical and historical information about the use and significance of the hill to the Cahuilla people. Documented findings in a written report and gave public presentations of results in a number of professional venues. In-house Consultant Archaeologist. 2011-2013

Sentinel Power Plant, Southern California Edison, Palm Springs, Riverside County, CA. Provided regulatory oversight and project management of cultural and paleontological resources. Provided cultural and paleontological assessment of the APE. Worked with generator's consultants to ensure that SCE's project scope was described accurately and reviewed by their environmental assessments and documents. Conducted a cultural resources through supplemental pedestrian survey, and summarized findings in a written technical report. Created GIS shapefiles and maps delineating cultural resource boundaries and survey corridors. Oversaw cultural and paleontological resources monitoring during construction. In-house Consultant Archaeologist. April 2011-July 2013

ANDRE-JUSTIN C. SIMMONS
Archaeologist/GIS Supervisor

EDUCATION

2014 M.A., Anthropology: Specializing in Anthropological Archaeology, California State University, Fullerton
2010 B.A., Anthropology and History, California State University, Fullerton, graduated *cum laude*
2012 Certificate in Geographic Information Systems, California State University, Fullerton

SUMMARY QUALIFICATIONS

Mr. Simmons is a qualified archaeologist and cross-trained paleontologist with extensive field experience in survey, monitoring, faunal analysis, and excavation. He exceeds the qualifications required by the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation*. Further, he is certified in Geographic Information Systems (GIS) and specializes in ESRI's ArcGIS software. Mr. Simmons is responsible for supervising GIS data collection and management, geospatial analysis, and the production of GIS maps and databases for large and small-scale projects. His key research interests include settlement patterns and use of space among Paleoindians, the American Southwest, early historic and prehistoric California, and historical Mexico. He has over six years of experience in California Archaeology and paleontological monitoring along with more than 24 hours of paleontology training and over four years of GIS experience.

SELECTED PROJECTS

Del Sur Solar EIR, City of Lancaster, Los Angeles County, CA. The project involves development of a 100 MW solar facility on 725 acres in the western portion of the Antelope Valley along with a 2-4 mile gen-tie line to Antelope Substation. Tasks include records search, Sacred Lands search, NAHC consultation and intensive-level survey to support technical reports for inclusion in the project EIR. Sub to Aspen Environmental Group. GIS Specialist. 2015

Rio Hondo-Saugus 220kV Idle Line Removal, Southern California Edison, Angeles National Forest and Private Property, Los Angeles County, CA. Paleontological assessment that included a records search and recommendation for mitigation monitoring during removal of ~2.5 miles of idle transmission line and 13 towers along with the associated foundations and hardware. Sub to Compass Rose. Field Technician/GIS Specialist. 2014

High Desert Corridor/ SR 138 Widening Project, FHWA/Caltrans District 7, Los Angeles and San Bernardino Counties, CA. This project involves construction of a new, approximately 63-mile long, east-west freeway/expressway between SR 14 in Los Angeles County and SR 18 in San Bernardino County. Records search, pedestrian survey, GIS mapping and site recording for Extended Phase I (XPI) Testing, subsurface testing of four archaeological sites in the Area of Potential Effects (APE). Caltrans is the lead federal and state agency; compliance with Section 106 and CEQA required. Sub to Parsons. Archaeologist/GIS Supervisor. 2014-2015

SR-138 North Corridor Improvements, On-Call Environmental Services (07A3144), Caltrans District 7, Los Angeles County, CA. Conducted records search and prepared GIS maps for a combined Paleontological Identification Report (PIR) and Paleontological Evaluation Report (PER) for improvements to a 35-mile segment of SR-138 from SR-14 north of Lancaster to I-5 south of Gorman. The APE is 600 feet wide. Caltrans, in cooperation with Metro, is evaluating three build alternatives. Sensitivity for paleontological resources was determined using the Caltrans sensitivity scale and the Potential Fossil Yield Classification (PFYC) system. Formations in the project area are not sensitive for fossil resources. Cogstone recommended preparation of a Paleontological Mitigation Plan. Sub to ECORP Consulting. GIS Supervisor. 2014

cogstone
PALEONTOLOGY - ARCHAEOLOGY - HISTORY

MICHELLE SAVALA COURTNEY
Archaeologist

EDUCATION

2000 B.S., Anthropology, Univerisity of California, Riverside

SUMMARY OF QUALIFICATIONS

Ms. Courtney is certified by the City of San Diego as a dual-qualified archaeologist/paleontologist with 16 years of experience in cultural resource management. She has worked on all aspects of historical, prehistoric and paleontological resources projects throughout southern California. She is knowledgeable of environmental compliance requirements under CEQA, NEPA, NHPA Sec. 106/110, NAGPRA and local agencies regulations. Her experience includes project management, records search, archival research, and Native American consultation. Her field activities include scheduling and managing field crews, conducting, Phase I and II surveys and excavations, data recovery, site recording, construction monitoring, coordinating with Native American monitors, and preparing compliance reports. She has been responsible for directing laboratory technicians for sorting, identifying, archiving, documenting, and cataloging artifacts and fossils. She has prepared and delivered collections to and maintained professional relations with local Native American groups, the San Diego Archaeological Center, and the San Diego Natural History Museum. She has completed the Advisory Council on Historic Preservation refresher course, 40-hour HAZWOPER (2009) and 8-hour refresher (current), and rail safety training for NTSD.

SELECTED PROJECTS

Lane Field South Hotel, Lane Field LLC, Hensel Phelps, San Diego, San Diego County, CA. Conducted archaeological and paleontological awareness training and mitigation monitoring during ground disturbing activities in compliance with the Subsurface Mitigation Plan on behalf of the developer. The project involves construction of a new multi-story high-rise hotel with ground level retail space and underground parking. It is located on the site of the former Lane Field baseball stadium (c. 1936-1957). The site is currently a paved parking lot at Pacific Coast Highway and Broadway in downtown San Diego Archaeological/Paleontological Monitor. 2016-ongoing

Palatino Little Italy Apartments Project, Kirkham Road and McMillin Little Italy, City of San Diego, San Diego County, CA. Providing cultural and paleontological resources compliance and mitigation monitoring during ground disturbing activities for construction of a 100 unit multi-family housing development at State and Elm Streets in the Little Italy area of San Diego on behalf of the developer. Sub to Spindrift Archaeological Monitor. 2016-ongoing

Hotel Indigo, San Diego, CA. Served as a paleontological lab technician for future Hotel site under the supervision of the project paleontologist, Dr. George Kennedy. Processed and curated invertebrates from *Pleistocene Bay Point* and *Middle Pleistocene.*

University City Village, San Diego, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Eocene, Mission Valley Formation and Pleistocene, Lindavista Formation.*

The Loft @ 707 10th Ave, San Diego, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Pleistocene, "Bay Point Formation".*

South Block Lofts, San Diego, CA. Served as a paleontological lab technician under the supervision the project paleontologist, Dr. George Kennedy. *Pleistocene Bay Point, middle Pleistocene.*

Sewer Group 741, Hillcrest, CA. Served as the archaeological and paleontological monitor under the supervision of the project paleontologist, Dr. George Kennedy and archaeologist Brian F Smith. *Pleistocene, Lindavista Formation and Pliocene, San Diego Formation.*

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PALEONTOLOGY - ARCHAEOLOGY - HISTORY

HOLLY DUKE
Lab and Data Manager
Archaeologist and Cross-trained Paleontologist

EDUCATION

2009 B.A., Archaeology/History, Simon Fraser University, Canada

SUMMARY QUALIFICATIONS

Ms. Duke is a qualified archaeologist and cross-trained paleontologist with four years of experience in survey, monitoring, excavation, and the identification of human and faunal skeletal remains. She is Cogstone's Lab and Data Manager. Her laboratory responsibilities include: identification and analysis of human skeletal remains; cleaning and identification of faunal bones for inclusion in faunal collections; measuring and cataloging prehistoric and historic artifacts; washing, sorting, and identifying seeds; as well as fossil preparation and stabilization. As Data Manager, she is responsible for the organization of field data, lab supervision and organization, and maintaining the iPads used for data collection in the field.

Metropole Vault Replacements, Southern California Edison, Avalon, Catalina Island, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities of a 30,000 s.f. APE for replacement of two underground electrical vaults. The site is located in proximity to the original Tongva tribal village on the island. Coordinated with the Most-Likely Descendant (MLD) and Native American monitor during the excavation of human remains. Responsible for the collections management of all artifacts and remains during excavation. Created spreadsheet databases to manage artifacts and features. Identified, cleaned, and recorded human remains per the MLD's instructions. Assisted with the repatriation of human remains prior to construction completion. Managed and organized field photos and feature data after construction was complete. Archaeological Monitor/Lab and Data Manager. 2014

Bodie Hills FY14-15 Cultural Resources Survey, Desert Restoration Project, Bureau of Land Management, Bishop Field Office, Mono County, CA. The project is a Class III Cultural Resources Inventory survey of
2,721 acres of BLM land identified for vegetation management. Conducted intensive pedestrian survey, organized and maintained data collected in the field, and prepared site records for final report. Archaeology Technician/Lab and Data Manager. 2014-2015

High Desert Corridor/ SR 138 Widening Project, FHWA/Caltrans District 7, Los Angeles and San Bernardino Counties, CA. The project consists of a field pedestrian survey for Extended Phase I (XPI) Testing and subsurface testing of four archaeological sites in the Area of Potential Effects (APE). Prepared two progress reports, cataloged all artifacts collected during testing, identified faunal remains, and prepared the entire collection for curation. Sub to Parsons Transportation Group. Lab and Data Manager. 2014-2015

Exposition Light Rail Phase 2 Project, Los Angeles County. Conducted archaeological and paleontological monitoring along a 6.6-mile segment of the historic electric railroad known as the Santa Monica Air Line that is being replaced with a new light rail line. Coordinated with construction work crews and inspectors, conducted awareness training, provided daily reporting, recovered artifacts related to the historic rail line and documented historic rail line features. Sub to URS/AECOM. Archaeology/Paleontology Monitor. 2012-2014

Marina del Rey 18-Inch Waterline Replacement Phase IIIB Project, Los Angeles Department of Public Works, Marina del Rey, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities for two alignments along Fiji Way and Via Marina in Marina del Rey. Cataloged artifacts recovered during monitoring and managed field data and photos. Sub to RBF Consulting. Archaeology Monitor/Lab and Data Manager. 2015

MEGAN PATRICIA WILSON, RPA
Archaeologist/GIS Specialist

EDUCATION

2014 M.A. Anthropology, California State University, Fullerton *cum laude*

2013 GIS Certificate, California State University, Fullerton

2006 B.A., Anthropology, University of California, Los Angeles *cum laude*

SUMMARY QUALIFICATIONS

Ms. Wilson is a Registered Professional Archaeologist (RPA) and cross-trained paleontologist with 9 years of experience in survey, excavation, and laboratory preparation/curation analysis. She meets the qualifications required by the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation. Her key research areas include prehistoric subsistence and settlement patterns of coastal southern California, protohistoric and historic archaeology of southern California and the Great Basin, and paleoenvironmental reconstructions based on archaeological flora and faunal analysis. She is GIS proficient and assists with the digitizing and mapping of spatial data for archaeology projects. Ms. Wilson conducts records searches, background research, and NAHC consultations; prepares DPR site records, and is a contributor to cultural resources technical reports. Ms. Wilson has five years of experience in southern California archaeology and is an expert in prehistoric and historic Orange County archaeology and artifact identification.

SELECTED PROJECTS

Olive View – UCLA Medical Center Campus Master Plan EIR, LADPW, Sylmar, Los Angeles County, CA. Conducted a record search, AB 52 Tribal consultation assistance to support a cultural resources Phase I pedestrian survey of open ground surfaces within the 235-acre project site in compliance with CEQA. Contributed to an archaeological resources technical report. Sub to ICF Jones & Stokes. Archaeologist. 2016

Marina del Rey 18-Inch Waterline Replacement Phase IIIB Project, Los Angeles Department of Public Works, Marina del Rey, Los Angeles County, CA. Conducted archaeological monitoring during ground disturbing activities for two alignments along Fiji Way and Via Marina in Marina del Rey. Cataloged artifacts recovered during monitoring and managed field data and photos. Sub to RBF Consulting. Archaeology Monitor. 2015

Accelerated Charter Elementary School, Los Angeles Unified School District, Los Angeles, Los Angeles County, CA. Conducted background research and contributed to preparation of DPR forms. The project involves documentation of five historic-age buildings prior to demolition, background research, mitigation monitoring plans, archaeological and paleontological monitoring and preparation of a monitoring compliance report. LAUSD is constructing a new facility on a 2.3-acre site in South Central Los Angeles consisting of classrooms, open areas and parking. Sub to Gafon. Archaeologist. 2015

Banna Crossing Homes, City of Covina, Los Angeles County, CA. Conducted a literature review and records search. Prepared a cultural resources letter report for the proposed 8.5-acre project area (PA), including a one-mile radius around the PA. Sub to Environmental Advisors. Archaeologist. 2015

Park Place Extension and Grade Separation EIR EA, Caltrans District 7, El Segundo, Los Angeles County, CA. Conducted a pedestrian survey to record and evaluate cultural resources within the archaeological and architectural APEs for a ~0.5-mile project along NBSF and UPRR rail lines and spur tracks on behalf of the City of El Segundo. Cogstone's services included records search, NAHC consultation, HPSR/ASR/HRER and paleontological reports. Seven built-environment resources were identified, evaluated, and DPR 523 forms were prepared. Sub to Michael Baker. Archaeologist. 2015

APPENDIX B: PREVIOUS CULTURAL RESOURCE STUDIES WITHIN 1.0 MILES OF THE APE

Previous Cultural Resource Studies within 1.0 miles of the APE

Report No.	Author(s)	Title	Year	Distance from APE
SD-00090	American Pacific Environmental Consultants, Inc.	AEIS and Technical Reports for Fletcher Hills Meadows #9.	1980	Outside
SD-00098	Archaeological Systems Management	An Archaeological Reconnaissance of the Fletcher Hills Meadows #6 Property El Cajon, California.	1976	Outside
SD-00348	Carrico, Richard	Appendix B: Archaeological and Historical Survey of the Proposed Grossmont Union High School District Sites.	1976	Outside
SD-00409	Carrico, Richard	Archaeological Survey of the Carlton Hills Community Phase I	1977	Outside
SD-00415	Carrico, Richard	Archaeological and Historical Survey of the Mast Boulevard Housing Project Site.	1982	Outside
SD-00517	Cupules, Sue Ann and Ruth Tolles	Mast Boulevard Archaeological Survey and Mitigation Report	1974	Within
SD-00546	Cupules, Sue Ann	An Archaeological Survey of the San Diego River Valley	1975	Within
SD-00586	Cheever, Dayle M.	Cultural Resources Survey of the Proposed Santee-La Mesa 30-inch Gas Pipeline	1989	Outside
SD-00618	Fink, Gary R.	The Archaeology of Cuyamaca Street Extension	1973	Outside
SD-00771	Corum, Joyce M.	Extended Phase I and Phase II Archaeological Test Excavations at Sites CA-SDi-205, 5053, 8594, 9242, and 10,148 Santee, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1986	Outside
SD-00778	Corum, Joyce M. and Chris White	Extended Phase I and Phase II Archaeological Test Excavations at SDi-9243 Santee, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1986	Within
SD-00779	Corum, Joyce and Karen Crotteau	Archaeological Test Excavation at Sites CA-SDI-5655, 5658, 9239, 9240, 9246, 9247, 9913 in Shepherd Canyon, San Diego, California 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Within
SD-00780	Corum, Joyce	First Addendum Archaeological Survey Report for Proposed State Route 52 Santo Road to State Route 67 (Portion) 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Outside
SD-00835	Fink, Gary	Archaeological Survey for the Gillespie Field Master Plan Project PN 8393	1973	Outside
SD-00863	Fink, Gary	Archaeological Survey for the Proposed Forester Creek Drainage Channel Project	1973	Outside
SD-00866	Fink, Gary R.	An Archaeological Survey of the Upper San Diego River Mosquito Abatement and Water Pollution Control Project Phase I	1973	Outside
SD-00935	Fink, Gary R.	An Archaeological Survey of the Sycamore Canyon Landfill Site	1973	Outside
SD-00994	Hanna, David	A Cultural Resource Study of the Murray, Cowles, and Fortuna Mountain Regional Park	1978	Outside
SD-01206	Corum, Joyce M.	Second Addendum Phase I Archaeological Survey and Extended Phase I Investigation for Proposed State Route 52, Santo Road to State Route 67 11-SD-	1988	Within

Report No.	Author(s)	Title	Year	Distance from APE
		52 P.M.7.3/17.2 11222-047040.		
SD-01244	Hatley, Melvin Jay and Russell L. Kaldenberg	Archaeological Survey Report for the Carlton Hills Substation.	1976	Outside
SD-01269	Pettus, Roy E.	A Cultural Survey of Portions of the Las Chollas, South Las Chollas, Los Coches Forester, and Loma Alta Stream Basins in San Diego County, California.	1979	Within
SD-01370	Rosen, Martin D.	Archaeological Survey Report for the Proposed Extension of Route 125 from Fletcher Parkway in La Mesa to State Route 52 in Santee, San Diego County, California.	1986	Outside
SD-01521	Underwood, Bradley R., John Cook, Patrick H. A. Welch, and Richard D. Glenn	Preliminary Archaeology Survey Lakeview Carlton Hills Santee County of San Diego	1977	Outside
SD-01829	Corum, Joyce M.	Third Addendum Archaeological Survey for Proposed State Route 52, 11-SD-52 P.M. 7.3/17.2, 11222-047050	1989	Outside
SD-01855	Hector, Susan	Fanita Ranch Property	1986	Outside
SD-01904	Smith, Brian F.	An Archaeological Survey of the Santee Village Shopping Center Project	1990	Outside
SD-01909	Hector, Susan	Investigations Conducted at Archaeological Site SDM-W-2409 (SDi-7603) Santee, California	1981	Outside
SD-02182	Multi Systems Associates, Inc	Draft Environmental Impact Report Woodside Meadows EM 3710 Santee, County of San Diego	1977	Outside
SD-02191	Multi Systems Associates, Inc.	Draft Environmental Impact Report Mission Dam Views a Residential Project Santee Community Planning Area County of Dan Diego TM4148 R80-39 P30-38 EAD LOG#80-13-34	1980	Outside
SD-02196	Abel Parra	Draft Environmental Impact Report Proposed Removal of Sand Upper San Diego River, San Diego County P79-112 RP79-16 EAD LOG#79-14-261	1980	Outside
SD-02198	Padre Dam Municipal Water District	Padre Dam Municipal Water District, Santee California, Santee Lakes Initial Study	1980	Outside
SD-02221	Smith, Brian F.	An Archaeological Survey of the St. George Antioch Church Project, City of Santee, Application #PA 90-14	1991	Outside
SD-02454	Alter, Ruth	Cultural Resources Survey of the Mission Trails East Park Entrance Property	1991	Outside
SD-02583	Kyle, Carolyn and Dennis Gallegos	Cultural Resource Monitoring Sewer for East Mission gorge Interceptor Sewer System Force Main Construction Project DEP #880089	1993	Within
SD-02625	Bull Charles	A Cultural Resources Survey of The Tirrera Santa Norte Waterline, San Diego California	1991	Outside
SD-02632	Carrico, Richard	A Cultural Resources Testing, Evaluation, and Proposed Data Recovery Program for the East Mission Gorge Pump Station and Force Main Project	1991	Within
SD-02633	Carrico, Richard	A Cultural Resources Testing, Evaluation, and Proposed Data Recovery Program for the East Mission Gorge Pump Station and Force Main Project	1991	Within

Report No.	Author(s)	Title	Year	Distance from APE
SD-02749	Gallegos, Dennis and Carolyn Kyle	Draft Archaeological Evaluation of Prehistoric Sites CA-SDI-11606 AND CA-SDI-11057 LOCI A and D, Kumeyaay Lake Campground, San Diego, California	1993	Outside
SD-02761	Kyle, Carolyn	Data Recovery for a Prehistoric Site CA-SDI-110148, East Mission Gorge Pump Station and Force Main, San Diego, California	1993	Within
SD-02822	City of San Diego	Proposed Mitigated Negative Declaration of PACTEL Cellular Communications Facility, East Elliot, San Diego	1994	Outside
SD-02888	Rosen, Martin, D., Karen Crafts, and Joyce Corum	Negative Archaeological Survey Report: 2nd Addendum for Extension of Route 124 from Fletcher Parkway in LA Mesa to Route 52 in Santee	1994	Outside
SD-02905	McDonald, Meg, Carol Serr, and Daniel M. Saunders	Phase III Data Recovery of CA-SDI-9243 A Multicomponent Site in the San Diego River Valley Santee, California	1994	Within
SD-02916	Peak & Associates, Inc.	Cultural Resources Assessment of AT&T's Proposed San Bernardino to San Diego Fiber Optic Cable, San Bernardino, Riverside and San Diego Counties, California	1990	Within
SD-02928	Smith, Brian F. and Stephen J. Burke	A Cultural Resource Study for the PACTEL Cellular-Fischer Project	1994	Outside
SD-02929	Smith, Brian F.	Results of a Cultural Resource Evaluation Study for the Padre Dam Municipal Water District Phase I Reclaimed Water System Project	1993	Within
SD-03039	Robbins-Wade, Mary	Archaeological Survey of the SDG&E Power Line Relocation for Little Sycamore Canyon Landfill, San Diego County, California	1995	Outside
SD-03073	Hanna, David	Cultural Resources Survey of Sycamore Landfill Entrance Facility in San Diego, California	1994	Outside
SD-03098	Smith. Brian	Results of a Cultural Resource Study of the Padre Dam Municipal Water District Phase I Reclaimed Water System Project	1992	Within
SD-03110	Kyle, Carolyn E. and Dennis R. Gallegos	Draft Historic Properties Inventory for the East Mission Gorge Trunk Sewer Rehabilitation Project, City of San Diego	1995	Within
SD-03162	Carrico, Richard, Theodore C. Cooley, and Brian K. Glenn	National Archaeological Data Base (NADB) Information Sheet East Mission Gorge Interceptor Pump Station and Force Main Project Cultural Resource Data Recovery Report for CA SDI 9,243	1994	Within
SD-03228	Monserrate, Laurence C.	East Mission Gorge Trunk Sewer (EMGTS) Rehabilitation	1995	Within
SD-03331	Dames & Moore	Cultural Resources Survey for Ordnance Clearance at Former Camp Elliot, Mission Trails Regional Park, San Diego, California	1991	Outside
SD-03342	Kyle, Carolyn and Dennis Gallegos	Archaeological Evaluation of Prehistoric Sites CA-SDI-11606, CA-SDI-11057A AND CA-SDI-11057B, Kumeyaay Lake Campground, San Diego, California	1994	Outside
SD-03720	Schroth, Adella B., Dennis R. Gallegos, Peti Mcherny, and Nina	Historical/Archaeological Survey Report for the Water Repurification Pipeline and Advanced Water Treatment Facility, City of San Diego, California	1996	Outside

Report No.	Author(s)	Title	Year	Distance from APE
	Harris			
SD-03758	Dietler, John and Andrew R. Pigniolo	Cultural Resource Monitoring Report for the Magazine Road North Repair Project on Miramar Marine Corps Air Station San Diego County, California	2000	Within
SD-04181	City of San Diego	Clean Water Program for Greater San Diego Santee Basin Water Reclamation Project Draft Environmental Report	1990	Within
SD-04184	Sue Hector	A Cultural Resources Survey of the Proposed East Elliott Community Planning Area	1988	Within
SD-04185	Recon	Draft Environmental Impact Report for the Lake Murray, Cowles, and Fortuna Mountain Regional Park	1978	Outside
SD-04324	Westec Services, Inc. and Richard Carrico	Archaeological Survey of the Carlton Hills Community, Phase I Plan	1977	Outside
SD-04675	City of San Diego	Mitigated Negative Declaration for Sycamore Landfill Continued Operations-Brushing and Clearing	2001	Outside
SD-04692	Corum, Joyce	First Supplemental Historic Property Survey 11-SD-52 P.M. 7.3/17.2	1986	Outside
SD-04769	City od San Diego	Final Environmental Impact Report for the East Mission Gorge Trunk Sewer Rehabilitation Project, San Diego, CA	1995	Outside
SD-04934	Corum, Joyce	Extended Phase I and Phase II Archaeological Test Excavations at Sites CA-SDI-205, 5053, 8594, 9242, 10148, Santee, CA 11-SD-52 P.M. 7.3/17.2	1986	Within
SD-04981	RECON	Environmental Impact Analysis for the Santee Regional Shopping Center	1980	Outside
SD-05043	Corum, Joyce	First Addendum Archaeological Survey Report for Proposed State Route 52 Santo Road to State Route 67 11-SD-52 P.M. 7.3/17.2 11222-047050	1985	Within
SD-05138	Pigniolo, Andrew	Historic Property Survey Report for the Forester Creek Project Santee California	2001	Outside
SD-05288	Crafts, Karen C.	Negative Archaeological Survey Report-Second Addendum 11-SD-125 P.M. 20.0-22.4	1994	Outside
SD-05447	Rosen, Martin	Historical Property Survey Report Proposed Extension of State Route 125 from Fletcher Parkway in La Mesa to State Route 52 in Santee	1987	Outside
SD-05675	Kelsay, Richalene	Negative Area Survey Report District II County of San Diego	1987	Outside
SD-06014	City of San Diego	Draft EIR - Mission City Parkway Bridge and Associates Facilities	2001	Outside
SD-06301	Duke, Curt	Cultural Resource Assessment: AT&T Wireless Services Facility #10046A San Diego County, CA	2002	Outside
SD-06324	City of San Diego	Scope of Work for a Draft Environmental Impact Report for the Sycamore Landfill Master Plan (Project No. 5617)	2003	Outside
SD-06377	Robbins-Wade, Mary	Archaeological Resources Survey - Mission Trails Regional Park, Multi-Use Staging Area, San Diego	2001	Outside
SD-06526	Donovan, Mary	Negative Archaeological Survey Report, 8 Fairmount Ave., Westbound Auxiliary Lane	1985	Outside

Report No.	Author(s)	Title	Year	Distance from APE
SD-06608	Rosen, Martin D.	Negative Archaeological Survey Report-First Addendum District 11, County of San Diego	1988	Outside
SD-07464	ERCE	Santee Light Rail Transit Project: Cultural Resources Technical Report	1990	Outside
SD-07735	Tift, Larry	Cultural Resources of the Hollins Lake Campground, City of San Diego	1990	Outside
SD-07892	CALTRANS	Historic Property Survey Report I15-SR67	2001	Outside
SD-08019	Pierson, Larry J.	An Archaeological Report for the Mitigation Monitoring and Reporting Program at the Sewer Group 708 Project.	2002	Within
SD-08816	Kyle, Carolyn	Cultural Resources Survey for the Santee Aquatic/Gymnastic Center, City of Santee, California	2001	Outside
SD-08888	Kyle, Carolyn	Cultural Resource Survey for the Town Center Park, City of Santee, California	2003	Outside
SD-08993	McGinnis, Patrick and Michael Baksh	Archaeological Survey Report for the Christ the King Lutheran Church Project, Santee San Diego County, California	2004	Outside
SD-09048	Kyle, Carolyn	Cultural Resource Assessment for Cingular Wireless Facility SD 487-03, City of Santee San Diego County, California	2002	Outside
SD-09214	Robbins-Wade, Mary	Archaeological Monitoring for the East Mission Gorge Trunk Sewer Rehabilitation Project, San Diego, California (DEP NO. 94-0077; SCH NO. 95-061026)	1998	Outside
SD-09427	Gross, Timothy and Robbins-Wade, Mary	Cultural Resources Inventory: Mast Boulevard Extension Santee, California	1989	Outside
SD-09570	Guerrero, Monica and Dennis R. Gallegos	Cultural Resource Survey for the Sycamore Landfill EIR Project, City of San Diego, California	2003	Outside
SD-09661	Shultz, Richard and Alex Wesson	Cultural Resources Survey of the Proposed West Hills High Cellular Communications Site, SD60XC105B, 8756 Mast Boulevard, Santee, San Diego County, California	2005	Outside
SD-09964	Price, Harry and Charly Bull	Cultural Resources Survey Report for the Ryan Corporate Office Park Master Plan	2004	Outside
SD-10156	Clifford, Jim, Michael Hares, Shaina Seivers, and Alex Wesson	Archaeological Survey of the Proposed Henry's Avocado Grove Cellular Communications Site, SAN-213-C, 3153 Purer Road, Escondido, San Diego County, California	2006	Outside
SD-10416	Hector, Susan M.	Cultural Resources Study for the Maintenance of Old Mission Dam, Mission Trails Regional Park, San Diego, California	2006	Outside
SD-10536	Glenn, Brian	Report to the Historical Board for the City of San Diego Water utilities Department, Alvarado Filtration Plant Upgrade and Expansion CIP 73-261	1993	Outside
SD-11120	Kyle, Carolyn E.	Cultural Resource Monitoring for the Forester Creek Improvement Project, City of Santee, California	2007	Outside
SD-11128	Kyle, Carolyn E.	Cultural Resource Survey for the San Diego River Restoration Project Edgemoor Property, City of Santee, California	2006	Outside

Report No.	Author(s)	Title	Year	Distance from APE
SD-11189	Pierson, Larry J.	Results of Archaeological Monitoring at Town Center Community Park Mass Grading, Santee, California (CIP 2004-31) (NEGATIVE ARCHAEOLOGICAL MONITORING REPORT)	2007	Outside
SD-11190	Kennedy, George L. and Gerald I Shiller	Paleontological Monitoring Report, Town Center Community Park Mass grading Project, City of Santee, San Diego County, California (CIP2004-31)	2007	Outside
SD-11412	Crafts, Karen	Historic Property Survey Report: State Route 52 Stage 4	2000	Outside
SD-11513	City of San Diego	Draft Environmental Impact Report for the Sycamore Landfill Master Plan	2008	Outside
SD-11850	Hector, Susan	Historical Resources Study for the Old Mission Dam Mitigation Project, San Diego, California	2007	Within
SD-11969	Bonner, W.H.	Records Search Results for T-Mobile Site (CARLTON HILLS LUTHERAN), 9735 Halberns Boulevard, Santee, San Diego County, California	2007	Outside
SD-12319	Price, Harry J.	Santee Town Center Specific Plan Amendment, Appendices to the Draft Master Environmental Impact Report	2005	Outside
SD-12455	Gardener, Jill and Brian Williams	Cultural Resources Survey for the San Diego River Watershed Invasive Non-Native Plant Control and Habitat Restoration Program at the Carlton Oaks Golf Course, Santee, California	2009	Within
SD-12526	Bonner, Wayne and Sarah Williams	Cultural Resources Search and Site Visit Results for T-Mobile USA Candidate SD06512A (FANITA RANCH WATER TANK), 8500 Organdy Lane, Santee, San Diego, California	2008	Outside
SD-12612	Robbins-Wade, Mary	Archaeological Survey Report: Biological Mitigation Parcel for the SR 163/Friars Road Interchange Improvements Project, San Diego County, California	2010	Outside
SD-12635	Rosen. Martin	Historic Property Resource Survey for the State Route 163 and Friars Road Interchange	2010	Outside
SD-13184	City of San Diego	Sycamore Canyon Landfill Master Plan Expansion	2011	Outside
SD-13202	Rosen, Martin	Cultural Resources Technical Assessment for the Program Environmental Impact Report for the San Diego River Park Master Plan, City of San Diego, California	2011	Within
SD-13226	U.S. Army Corps of Engineers	Mast Park Habitation Restoration Project, City of Santee, San Diego County, California	2011	Outside
SD-13237	Zepeda-Herman, Carmen	National Park Service Land and Water Conservation Fund Application for Padre Dam's Santee Lakes Picnic Shelter Replacement; Project No. 06-01705	2011	Outside
SD-13413	Tennesen, Kristin	ETS #22188, Cultural Resources Monitoring for the Carl Inspections, 1819Ppoles, Carl Subarea Project, San Diego County, California (HDR #179459)	2012	Outside
SD-13560	City of San Diego	Environmental Impact Report, Castlerock	2012	Outside
SD-13610	Whitaker, James E.	ETS #8032; Cultural Resources Survey for the Replacement of Tree Distribution Poles in Central Inland San Diego County, California	2009	Outside
SD-13918	City of San Diego	The San Diego River Park Master Plan	2012	Within
SD-14043	Wolf, Scott	Cultural Resources Study for the Santee Walmart Expansion Project, City of Santee, San Diego	2011	Outside

Report No.	Author(s)	Title	Year	Distance from APE
		County, California		
SD-14123	Pigniolo, Andrew, Candace Ehringer, and Madeleine Bray	Draft Phase I Cultural Resources Survey and Assessment for the El Monte Valley Mining, Reclamation, and Groundwater Recharge Project	2011	Outside
SD-14747	Loftus, Shannon	Cultural Resource Records Search and Site Survey AT&T Site SD0699 52 South and Prospect 8865 Cuyamaca Street, Santee, San Diego County, California 92071	2013	Outside
SD-14871	Bonner, Wayne	Cultural Resources Records Search and Site Visit Results for the T-Mobile West. LLC Candidate SD06480A (SD480 AL'S SPORT SHOP) 9250 Mission Gorge Road, Santee, San Diego County, California	2013	Outside
SD-15141	Phil Fulton	Cultural Resource Assessment Class I Inventory Verizon Wireless Services Rio Seco Facility, City of Santee, San Diego County, California	2014	Outside

CONFIDENTIAL APPENDIX C: NOT INCLUDED

SDVOSB . DVBE

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GEOTECHNICAL INVESTIGATION
SAN DIEGO RIVER TRAIL
CARLTON OAKS GOLF COURSE SEGMENT
SAN DIEGO AND SANTEE, CALIFORNIA

PREPARED FOR:

MR. SAMUEL WAISBORD, PE
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PREPARED BY:

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October 28, 2016

SCST Project No. 160413P3
Report No. 1

Mr. Samuel Waisbord, PE
Project Manager
Nasland Engineering
4740 Ruffner Street
San Diego, California 92111

Subject: GEOTECHNICAL INVESTIGATION
SAN DIEGO RIVER TRAIL
CARLTON OAKS GOLF COURSE SEGMENT
SAN DIEGO AND SANTEE, CALIFORNIA

Dear Mr. Waisbord:

SCST, Inc. is pleased to present our report describing the geotechnical investigation performed for the subject project. We conducted the geotechnical investigation in general conformance with the scope of work presented in our agreement dated August 17, 2016. Based on the results of our investigation, we consider the planned construction feasible from a geotechnical standpoint provided the recommendations of this report are followed. If you have questions, please call us at (619) 280-4321.

Respectfully submitted,
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1. INTRODUCTION

This report presents the results of the geotechnical investigation SCST, Inc. performed for the subject project. We understand the project will consist of the design and construction of a bikeway on the existing berm located along the southern edge of Carlton Oaks Golf Course in the City of San Diego and the City of Santee, California. Figure 1 presents a site vicinity map. The purpose of our work is to provide conclusions and recommendations regarding the geotechnical aspects of the project.

2. SCOPE OF WORK

2.1 FIELD INVESTIGATION

We explored the subsurface conditions by excavating four test pits along the existing berm to depths of about 4 to 5 feet below the existing ground surface using hand tools. We also collected three samples of near-surface soils within the San Diego River channel (one at the project site, one mile upstream, and one mile downstream) for use in scour analysis by others. Figures 2A and 2B show the approximate locations of the test pits and scour analysis samples. An SCST engineer logged the test pits and collected samples of the materials encountered for laboratory testing. Appendix I presents logs of the test pits. Soils are classified according to the Unified Soil Classification System illustrated on Figure I-1.

2.2 LABORATORY TESTING

Selected samples obtained from the test pits and the San Diego River channel were tested to evaluate pertinent soil classification and engineering properties and enable development of geotechnical conclusions and recommendations. The laboratory tests consisted of grain size distribution, Atterberg Limits, maximum dry density and optimum moisture content, expansion index, corrosivity and direct shear. Appendix II presents the results of the laboratory tests and brief explanations of the test procedures.

2.3 ANALYSIS AND REPORT PREPARATION

The results of the field and laboratory tests were evaluated to develop conclusions and recommendations regarding:

- Subsurface conditions beneath the site, including groundwater levels
- General geologic conditions and potential geologic hazards
- Criteria for seismic design in accordance with the 2013 California Building Code (CBC)
- Site preparation and grading, including excavation characteristics
- General construction-related considerations, including temporary sloped excavations and shoring, construction dewatering, and trench backfilling operations
- Slope stability
- Allowable soil bearing capacity and resistance to lateral loads
- Estimated foundation settlements
- Lateral earth pressures for retaining wall design
- Modulus of soil reaction for pipeline design
- Pavement sections

3. SITE DESCRIPTION

The site consists of an existing earthen berm located between the southern edge of Carlton Oaks Golf Course and the northern edge of the San Diego River within the City of San Diego and the City of Santee, California. The site is part of the planned San Diego River Trail that is envisioned as a regional bikeway that extends along the San Diego River from the Pacific Ocean to its headwaters near Julian. The Carlton Oaks Golf Course Segment of the trail is about 2 miles long and extends between West Hills Parkway on the west and Carlton Hills Boulevard on the east. The existing unpaved berm is up to about 10 feet in height with side slopes generally inclined flatter than 2:1 (horizontal to vertical). Portions of the side slopes on the San Diego River side are locally steeper than 2:1 due to scour/erosion. Dense vegetation exists on the San Diego River side slopes.

4. PROPOSED DEVELOPMENT

We understand that the proposed development will consist of Class I bikeway, which is a path that provides a separated right-of-way for the exclusive use of people walking and riding bikes. The proposed bikeway will consist of a 10-foot-wide paved bike path with 2-foot wide shoulders. Additional improvements will include retaining walls, fencing, lighting and drainage facilities. Minor fills will be placed to widen the existing berm, with fill slopes constructed at 2:1 (horizontal to vertical) or flatter.

5. GEOLOGY AND SUBSURFACE CONDITIONS

The materials encountered in the test pits consist of berm fill. The entire site is underlain by young alluvial flood-plain deposits. The materials encountered in the San Diego River channel consist of alluvial deposits. Descriptions of the materials are presented below. Figure 3 presents the regional geology in the vicinity of the site.

Fill: Fill was encountered in each of the test pits. The fill is associated with the berm construction and consists of loose to medium dense silty sand with trace amounts of gravel. The fill extends to maximum depth explored of about 5 feet below the existing ground surface.

Young Alluvial Flood-Plain Deposits: Young alluvial flood-plain deposits were encountered in the San Diego River channel. The near-surface alluvial deposits consist of poorly graded sand with silt and silty sand.

Groundwater: Groundwater was encountered in test pit TP-4 at a depth of about 4½ feet below the existing ground surface. Groundwater levels may fluctuate in the future due to river flow, rainfall, irrigation, broken pipes, or changes in site drainage. Because groundwater rise or seepage is difficult to predict, such conditions are typically mitigated if and when they occur.

6. GEOLOGIC HAZARDS

6.1 FAULTING AND SURFACE RUPTURE

The closest known active fault is the Rose Canyon fault zone (Silver Strand Section) located about 11½ miles (18½ kilometers) southwest of the site. The site is not located in an Alquist-Priolo Earthquake Fault Zone. No active faults are known to underlie or project toward the site. Therefore, the probability of fault rupture is low.

6.2 CBC SEISMIC DESIGN PARAMETERS

A geologic hazard likely to affect the project is ground shaking as a result of movement along an active fault zone in the vicinity of the subject site. The site coefficients and adjusted maximum considered earthquake spectral response accelerations in accordance with the 2013 CBC are presented below:

Site Coordinates: Latitude 32.83767°
Longitude -117.01196°
Site Class: D
Site Coefficients, F_a = 1.150
F_v = 1.719
Mapped Spectral Response Acceleration at Short Period, S_s = 0.875g
Mapped Spectral Response Acceleration at 1-Second Period, S_1 = 0.340g
Design Spectral Acceleration at Short Period, S_{DS} = 0.671g
Design Spectral Acceleration at 1-Second Period, S_{D1} = 0.390g
Site Peak Ground Acceleration, PGA_M = 0.387g

6.3 LIQUEFACTION

Liquefaction occurs when loose, saturated, generally fine sands and silts are subjected to strong ground shaking. The soils lose shear strength and become liquid; potentially resulting in large total and differential ground surface settlements as well as possible lateral spreading. Liquefaction analysis was not part of our scope of work. However, according to the City of San Diego Seismic Safety Study map, the site is located in an area with a high liquefaction potential. Although liquefaction may occur, we anticipate that the site will generally behave as a Site Class D with respect to seismic response of the planned improvements.

6.4 FLOODING, TSUNAMIS AND SEICHES

The site is located within a flood zone (FEMA, 2012); therefore, the potential for flooding at the site is high. The site is not located within a mapped area on the State of California Tsunami Inundation Maps (Cal EMA, 2009); therefore, damage due to tsunamis is considered negligible. Seiches are periodic oscillations in large bodies of water such as lakes, harbors, bays, or reservoirs. The site is not located immediately adjacent to any lakes or confined bodies of water; therefore, the potential for a seiche to affect the site is low.

7. CONCLUSIONS

The planned bikeway, retaining walls and other improvements will be underlain by potentially compressible fill soils. Remedial grading will need to be performed to reduce the potential for distress to the planned improvements under static loading. Remedial grading recommendations are provided in Sections 8.1.2 and 8.1.3 of this report. The planned retaining walls can be supported on shallow spread footings with bottoms levels on compacted fill. If the soils beneath the site liquefy, significant distress to the planned improvements should be anticipated.

8. RECOMMENDATIONS

8.1 SITE PREPARATION AND GRADING

8.1.1 Site Preparation

Site preparation should begin with the removal of existing improvements, topsoil, vegetation and debris. Subsurface improvements that are to be abandoned should be removed and the resulting excavations should be backfilled and compacted in accordance with the recommendations of this report. Pipeline abandonment can consist of capping or rerouting at the project perimeter and removal within the project perimeter. If appropriate, abandoned pipelines can be filled with grout or slurry as recommended by and observed by the geotechnical consultant.

8.1.2 Remedial Grading

To reduce the potential for static settlement, the existing soils should be excavated to a depth of at least 1 foot below finished subgrade elevation for pavements and 2 feet below the footing bottom level for retaining walls. Horizontally, the excavations should extend a distance equal to the depth of excavation or up to the limits of disturbance, whichever is less. An SCST representative should observe conditions exposed in the bottom of the excavation to determine if additional excavation is required.

8.1.3 Compacted Fill

Prior to placing fill, the exposed surface should be scarified to a depth of 12 inches, moisture conditioned to near optimum moisture content, and compacted to at least 90% relative compaction. Excavated material, except for vegetation, debris and rocks greater than 6 inches can be used as compacted fill. Material with an expansion index of 20 or less determined in accordance with ASTM D4829 should be used as compacted fill. We expect that most of the onsite materials will meet the expansion index criteria and can be used as compacted fill. Concrete slabs and retaining wall footings should be underlain by at least 2 feet of material with an expansion index of 20 or less. Fill should be moisture conditioned to near optimum moisture content and compacted to at least 90% relative compaction. Fill should be placed in horizontal lifts at a thickness appropriate for the

equipment spreading, mixing, and compacting the material, but generally should not exceed 8 inches in loose thickness. Fill should be benched into sloping ground inclined steeper than 5:1 (horizontal to vertical), such as for the berm widening. The maximum dry density and optimum moisture content for evaluating relative compaction should be determined in accordance with ASTM D 1557. Utility trench backfill beneath structures, pavements and hardscape should be compacted to at least 90% relative compaction. The top 12 inches of subgrade beneath pavements should be compacted to at least 95%.

8.1.4 Imported Soil

Imported soil should consist of predominately granular soil free of organic matter and rocks greater than 6 inches. Imported soil should have an expansion index of 20 or less and should be inspected and, if appropriate, tested by SCST prior to transport to the site.

8.1.5 Excavation Characteristics

It is anticipated that excavations can be achieved with conventional earthwork equipment in good working order.

8.1.6 Temporary Excavations

Temporary excavations 3 feet deep or less can be made vertically. Deeper temporary excavations should be laid back no steeper than 1:1 (horizontal:vertical). The faces of temporary slopes should be inspected daily by the contractor's Competent Person before personnel are allowed to enter the excavation. Any zones of potential instability, sloughing or raveling should be brought to the attention of the Engineer and corrective action implemented before personnel begin working in the excavation. Excavated soils should not be stockpiled behind temporary excavations within a distance equal to the depth of the excavation. SCST should be notified if other surcharge loads are anticipated so that lateral load criteria can be developed for the specific situation. If temporary slopes are to be maintained during the rainy season, berms are recommended along the tops of slopes to prevent runoff water from entering the excavation and eroding the slope faces. Slopes steeper than those described above will require shoring. Additionally, temporary excavations that extend below a plane inclined at 1½:1 (horizontal:vertical) downward from the outside bottom edge of existing structures or improvements will require shoring. A shoring system consisting of soldier piles and lagging can be used.

8.1.7 Temporary Shoring

For design of cantilevered shoring, an active soil pressure equal to a fluid weighing 35 pcf can be used for level retained ground or 55 pcf for 2:1 (horizontal:vertical) sloping ground. The surcharge loads on shoring from traffic and construction equipment adjacent to the excavation can be modeled by assuming an additional 2 feet of soil behind the shoring. For design of soldier piles, an allowable passive pressure of 350 psf per foot of

embedment over twice the pile diameter up to a maximum of 5,000 psf can be used. Soldier piles should be spaced at least three pile diameters, center to center. Continuous lagging will be required throughout. The soldier piles should be designed for the full anticipated lateral pressure; however, the pressure on the lagging will be less due to arching in the soils. For design of lagging, the earth pressure but can be limited to a maximum value of 400 psf.

8.1.8 Temporary Dewatering

Groundwater seepage may occur locally and should be anticipated in excavations. Dewatering can be accomplished by sloping the excavation bottom to a sump and pumping from the sump. A layer of gravel about 6 inches thick placed in the bottom of the excavation will facilitate groundwater flow and can be used as a working platform.

8.1.9 Oversized Material

Excavations may generate oversized material. Oversized material is defined as rocks or cemented clasts greater than 6 inches in largest dimension. Oversized material should be broken down to no greater than 6 inches in largest dimension for use in fill, used as landscape material, or disposed offsite.

8.1.10 Slopes

All permanent slopes should be constructed no steeper than 2:1 (horizontal to vertical). In our opinion, slopes constructed no steeper than 2:1 will possess an adequate factor of safety. Faces of fill slopes should be compacted either by rolling with a sheep-foot roller or other suitable equipment, or by overfilling and cutting back to design grade. Fill should be benched into sloping ground inclined steeper than 5:1. All slopes are susceptible to surficial slope failure and erosion. Water should not be allowed to flow over the top of slope. Additionally, slopes should be planted with vegetation that will reduce the potential for erosion.

Portions of the existing berm slope on the San Diego River side show indications of erosion or scour failure. In our opinion, the slopes will remain susceptible to erosion and failure unless armored with rip-rap. We recommend using rip-rap that conforms to Section 72 of the Caltrans Standard Specifications. A fabric separator such as Mirafi FW300 should be placed between the rip-rap and soil to reduce the potential for piping erosion. Existing vegetation should be removed throughout the remediation area prior to placing the fabric. Sufficient rip-rap should be placed to restore the slope face to a 2:1 gradient.

8.1.11 Surface Drainage

Final surface grades around structures should be designed to collect and direct surface water away from the structure and toward appropriate drainage facilities. The ground

around the structure should be graded so that surface water flows rapidly away from the structure without ponding. In general, we recommend that the ground adjacent to the structure slope away at a gradient of at least 2%. Densely vegetated areas where runoff can be impaired should have a minimum gradient of at least 5% within the first 5 feet from the structure. Roof gutters with downspouts that discharge directly into a closed drainage system are recommended on structures. Drainage patterns established at the time of fine grading should be maintained throughout the life of the proposed structures. Site irrigation should be limited to the minimum necessary to sustain landscape growth. Should excessive irrigation, impaired drainage, or unusually high rainfall occur, saturated zones of perched groundwater can develop.

8.1.12 Grading Plan Review

SCST should review the grading plans and earthwork specifications to ascertain whether the intent of the recommendations contained in this report have been implemented, and that no revised recommendations are needed due to changes in the development scheme.

8.2 CONVENTIONAL RETAINING WALLS

8.2.1 Foundations

Shallow spread footings with bottom levels on compacted fill can be used to support retaining walls. Footings should extend at least 18 inches below lowest adjacent finished grade and be at least 24 inches wide. Footings located adjacent to or within slopes should be extended to a depth such that a minimum horizontal distance of 7 feet exists between the lower outside footing edge and the face of the slope.

8.2.2 Allowable Soil Bearing

An allowable bearing capacity of 2,000 psf can be used. The bearing value can be increased by ⅓ when considering the total of all loads, including wind or seismic forces.

8.2.3 Resistance to Lateral Loads

Lateral loads will be resisted by friction between the bottoms of footings and passive pressure on the faces of footings and other structural elements below grade. An allowable coefficient of friction of 0.35 can be used. Passive pressure can be computed using an allowable lateral pressure of 300 psf per foot of depth below the ground surface for level ground conditions. Reductions for sloping ground should be made. The passive pressure can be increased by ⅓ when considering the total of all loads, including wind or seismic forces. The upper 1 foot of soil should not be relied on for passive support unless the ground is covered with pavements or slabs.

8.2.4 Settlement Characteristics

Total foundation settlements are estimated to be less than 1 inch. Differential settlements across continuous footings are estimated to be less than ¾ inch over a distance of 40 feet. Settlements should be completed shortly after structural loads are applied.

8.2.5 Foundation Excavation Observations

A representative from SCST should observe the foundation excavations prior to forming or placing reinforcing steel.

8.2.6 Lateral Earth Pressures

The active earth pressure for the design of unrestrained retaining walls with level backfill can be taken as equivalent to the pressure of a fluid weighing 35 pcf. The at-rest earth pressure for the design of restrained retaining walls with level backfills can be taken as equivalent to the pressure of a fluid weighing 55 pcf. These values assume a granular and drained backfill condition. An additional 20 pcf should be added to these values for walls with a 2:1 (horizontal:vertical) sloping backfill. An increase in earth pressure equivalent to an additional 2 feet of retained soil can be used to account for surcharge loads from light traffic. The above values do not include a factor of safety. Appropriate factors of safety should be incorporated into the design. If any other surcharge loads are anticipated, SCST should be contacted for the necessary increase in soil pressure.

Retaining walls should be designed to resist hydrostatic pressures or be provided with a backdrain to reduce the accumulation of hydrostatic pressures. Backdrains may consist of a 2-foot wide zone of ¾-inch crushed rock. The backdrain should be separated from the adjacent soils using a non-woven filter fabric, such as Mirafi 140N or equivalent. Weep holes should be provided or a perforated pipe should be installed at the base of the backdrain and sloped to discharge to a suitable storm drain facility. As an alternative, a geocomposite drainage system such as Miradrain 6000 or equivalent placed behind the wall and connected to a suitable storm drain facility can be used. The project architect should provide waterproofing specifications and details. Figure 4 presents typical conventional retaining wall backdrain details.

8.2.7 Seismic Earth Pressure

If required, the seismic earth pressure can be taken as equivalent to the pressure of a fluid weighing 14 pcf. This value is for level backfill and does not include a factor of safety. Appropriate factors of safety should be incorporated into the design. This pressure is in addition to the un-factored, static active earth pressure. The passive pressure and bearing capacity can be increased by ⅓ in determining the seismic stability of the wall.

8.2.8 Backfill

Wall backfill should consist of granular, free-draining material. Expansive or clayey soil should not be used. Additionally, backfill within 3 feet from the back of the wall should not contain rocks greater than 3 inches in dimension. We anticipate that a portion of the onsite soils will be suitable for wall backfill. Backfill should be compacted to at least 90% relative compaction. Backfill should not be placed until walls have achieved adequate structural strength. Compaction of wall backfill will be necessary to minimize settlement of the backfill and overlying settlement sensitive improvements. However, some settlement should still be anticipated. Provisions should be made for some settlement of concrete slabs and pavements supported on backfill. Additionally, any utilities supported on backfill should be designed to tolerate differential settlement.

8.3 MECHANICALLY STABILIZED EARTH RETAINING WALLS

The following soil parameters can be used for design of mechanically stabilized earth (MSE) retaining walls.

MSE Wall Design Parameters

Soil Parameter	Reinforced Soil	Retained Soil	Foundation Soil
Internal Friction Angle	32°	32°	32°
Cohesion	0	0	0
Moist Unit Weight	125 pcf	125 pcf	125 pcf

The reinforced soil should consist of granular, free-draining material with a sand equivalent of 20 or more. The bottom of MSE walls should extend to such a depth that a total of 5 feet exists between the bottom of the wall and the face of the slope. Figure 5 presents a typical MSE retaining wall backdrain detail. MSE retaining walls may experience lateral movement over time. The wall engineer should review the configuration of proposed improvements adjacent to the wall and provide measures to help reduce the potential for distress to these improvements from lateral movement.

8.4 PIPELINES

8.4.1 Thrust Blocks

For level ground conditions, a passive earth pressure of 300 psf per foot of depth below the lowest adjacent final grade can be used to compute allowable thrust block resistance. A value of 150 psf per foot should be used below groundwater level, if encountered.

8.4.2 Modulus of Soil Reaction

A modulus of soil reaction (E') of 2,000 psi can be used to evaluate the deflection of buried flexible pipelines. This value assumes that granular bedding material is placed adjacent to the pipe and is compacted to at least 90% relative compaction.

8.4.3 Pipe Bedding

Pipe bedding as specified in the "Greenbook" Standard Specifications for Public Works Construction can be used. Bedding material should consist of clean sand having a sand equivalent not less than 30 and should extend to at least 12 inches above the top of pipe. Alternative materials meeting the intent of the bedding specifications are also acceptable. Samples of materials proposed for use as bedding should be provided to the engineer for inspection and testing before the material is imported for use on the project. The onsite materials are not expected to meet "Greenbook" bedding specifications. The pipe bedding material should be placed over the full width of the trench. After placement of the pipe, the bedding should be brought up uniformly on both sides of the pipe to reduce the potential for unbalanced loads. No voids or uncompacted areas should be left beneath the pipe haunches. Ponding or jetting the pipe bedding should not be allowed.

8.4.4 Cutoff Walls

Where pipeline inclinations exceed 15 percent, cutoff walls may be necessary in trench excavations. Additionally, we do not recommend that open graded rock be used for pipe bedding or backfill because of the potential for piping erosion. The recommended bedding is clean sand having a sand equivalent not less than 30. Alternatively, 2-sack sand-cement slurry can be used for the pipe bedding. If sand-cement slurry is used for pipe bedding to at least 1 foot over the top of the pipe, cutoff walls are not considered necessary. The need for cutoff walls should be further evaluated by the project civil engineer designing the pipeline.

8.4.5 Backfill

Excavated material free of organic debris and rocks greater than 6 inches in any dimension are generally expected to be suitable for use as backfill unless beneath buildings or hardscape. Imported material should not contain rocks greater than 4 inches in any dimension or organic debris. Imported material should have an expansion index of 20 or less. SCST should observe and, if appropriate, test proposed imported materials before they are delivered to the site. Backfill should be placed in lifts 8 inches or less in loose thickness, moisture conditioned to optimum moisture content or slightly above, and compacted to at least 90% relative compaction. The top 12 inches of soil beneath pavement subgrade should be compacted to at least 95% relative compaction.

8.5 PAVEMENT SECTION RECOMMENDATIONS

The pavement support characteristics of the soils encountered during our investigation are considered moderate. An R-value of 30 was assumed for design of preliminary pavement sections. The actual R-value of the subgrade soils should be determined after grading and final pavement sections be provided. Based on an R-value of 30, the following pavement structural sections are recommended for an assumed Traffic Index of 5.0. The project civil engineer should review the assumed Traffic Index to determine if it is appropriate.

Flexible Pavement Sections

Traffic Type	Traffic Index	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Bikeway and Light Vehicle	5.0	3	6

Portland Cement Concrete Pavement Sections

Traffic Type	Traffic Index	Full-Depth JPCP* (inches)
Bikeway and Light Vehicle	5.0	6

***Jointed Plain Concrete Pavement**

Pervious pavement sections are recommended below. They are based on Caltrans (2014) pavement structural design guidelines. The pavement sections are based on the strength of the materials. However, the actual thickness of the sections may be controlled by the reservoir layer design, which the project civil engineer should determine.

Pervious Asphalt Pavement

Traffic Type	Category	*Asphalt Treated Permeable Base (ATPB) (inches)	Class 4 Aggregate Base (inches)
Bikeway and Light Vehicle	B	5	6

***1¼ inches of an open graded friction course (OGFC) should be placed on top of the ATPB.**

Pervious Concrete Pavement

Traffic Type	Category	Pervious Concrete (inches)	Class 4 Aggregate Base (inches)
Bikeway and Light Vehicle	B	6	6

Permeable Interlocking Concrete Pavers (PICP)

Traffic Type	Category	PICP (inches)	Class 3 Permeable (inches)	Class 4 Aggregate Base (inches)
Bikeway and Light Vehicle	B	3⅛	4¼	6

The top 12 inches of subgrade should be scarified, moisture conditioned to near optimum moisture content and compacted to at least 95% relative compaction. All soft or yielding areas should be removed and replaced with compacted fill or aggregate base. Aggregate base should be compacted to at least 95% relative compaction. All materials and methods of construction should conform to good engineering practices and the minimum local standards.

Pervious pavement sections should be lined with an impermeable geomembrane consisting of 30 mil HDPE or PVC to reduce the potential for berm slope instabilities or water-related distress to adjacent improvements. A suitable subdrain system should be installed at the base of the pervious section.

8.6 SOIL CORROSIVITY

A representative sample of the onsite soils was tested to evaluate corrosion potential. The test results are presented in Appendix II. The project design engineer can use the sulfate results in conjunction with ACI 318 to specify the water/cement ratio, compressive strength and cementitious material types for concrete exposed to soil. A corrosion engineer should be contacted to provide specific corrosion control recommendations.

9. GEOTECHNICAL ENGINEERING DURING CONSTRUCTION

The geotechnical engineer should review project plans and specifications prior to bidding and construction to check that the intent of the recommendations in this report has been incorporated. Observations and tests should be performed during construction. If the conditions encountered during construction differ from those anticipated based on the subsurface exploration program, the presence of the geotechnical engineer during construction will enable an evaluation of the exposed conditions and modifications of the recommendations in this report or development of additional recommendations in a timely manner.

10. CLOSURE

SCST should be advised of any changes in the project scope so that the recommendations contained in this report can be evaluated with respect to the revised plans. Changes in recommendations will be verified in writing. The findings in this report are valid as of the date of this report. Changes in the condition of the site can, however, occur with the passage of time, whether they are due to natural processes or work on this or adjacent areas. In addition, changes in the standards of practice and government regulations can occur. Thus, the findings in this report may be invalidated wholly or in part by changes beyond our control. This report should not be relied upon after a period of two years without a review by us verifying the suitability of the conclusions and recommendations to site conditions at that time.

In the performance of our professional services, we comply with that level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions and in the same locality. The client recognizes that subsurface conditions may vary from those

encountered at the test pit locations, and that our data, interpretations, and recommendations are based solely on the information obtained by us. We will be responsible for those data, interpretations, and recommendations, but shall not be responsible for interpretations by others of the information developed. Our services consist of professional consultation and observation only, and no warranty of any kind whatsoever, express or implied, is made or intended in connection with the work performed or to be performed by us, or by our proposal for consulting or other services, or by our furnishing of oral or written reports or findings.

11. REFERENCES

American Concrete Institute (ACI) (2012), Building Code Requirements for Structural Concrete (ACI 318-11) and Commentary, August.

California Emergency Management Agency, California Geological Survey, University of Southern California (Cal EMA) (2009), Tsunami Inundation Map for Emergency Planning, June 1.

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Caltrans (2014), Pervious Pavement Design Guidance, August.

Federal Emergency Management Agency (2012), FIRM Flood Insurance Rate Map, San Diego County, California and Incorporated Areas, Map Number 06073C1634G, May 16.

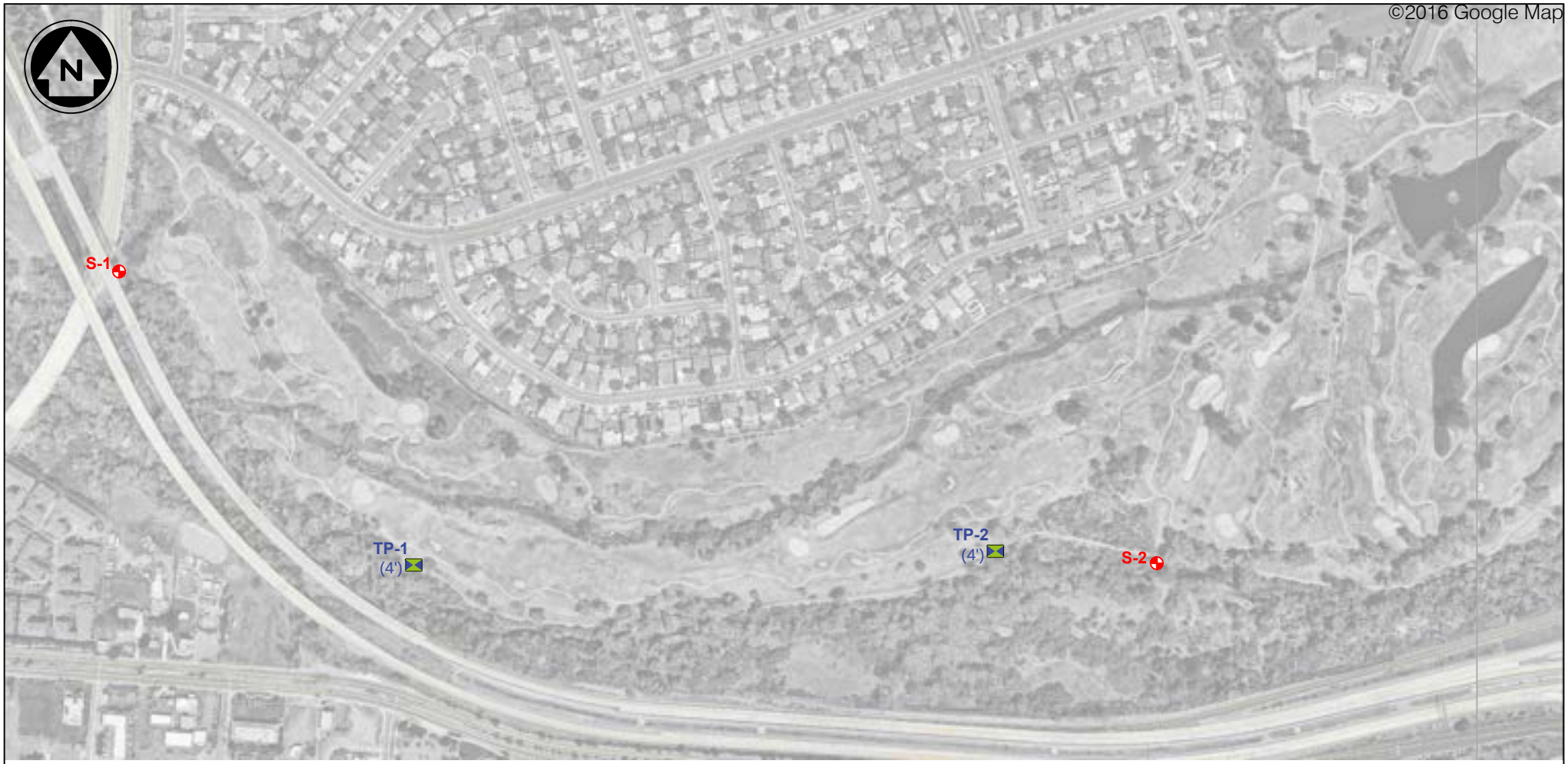
International Code Council (2012), 2013 California Building Code, California Code of Regulations, Title 24, Part 2, Volume 2 of 2, Based on the 2012 International Existing Building Code, Effective Date: January 1, 2014.

Kennedy, M.P. and Tan, S.S. (2008), Geologic Map of the San Diego 30' x 60' Quadrangle, California, California Geological Survey.

Public Works Standards, Inc. (2015), The "Greenbook," Standard Specifications for Public Works Construction, 2015 Edition.



SCST, Inc.	SITE VICINITY MAP San Diego River Trail Carlton Oaks Golf Course Segment	Date: October, 2016 By: VAU Job No.:160413P3-1	Figure: 1



SCST LEGEND:

TP-2 (4') — Approximate Location of Test Pit (Depth in feet)

S-2 — Approximate Location of Scour Analysis Sample

0 500′ 1000′

Scale

SCST, Inc.	SUBSURFACE EXPLORATION MAP San Diego River Trail Carlton Oaks Golf Course Segment	Date: October, 2016 By: VAU Job No.: 160413P3-1	Figure: 2A



SCST LEGEND:

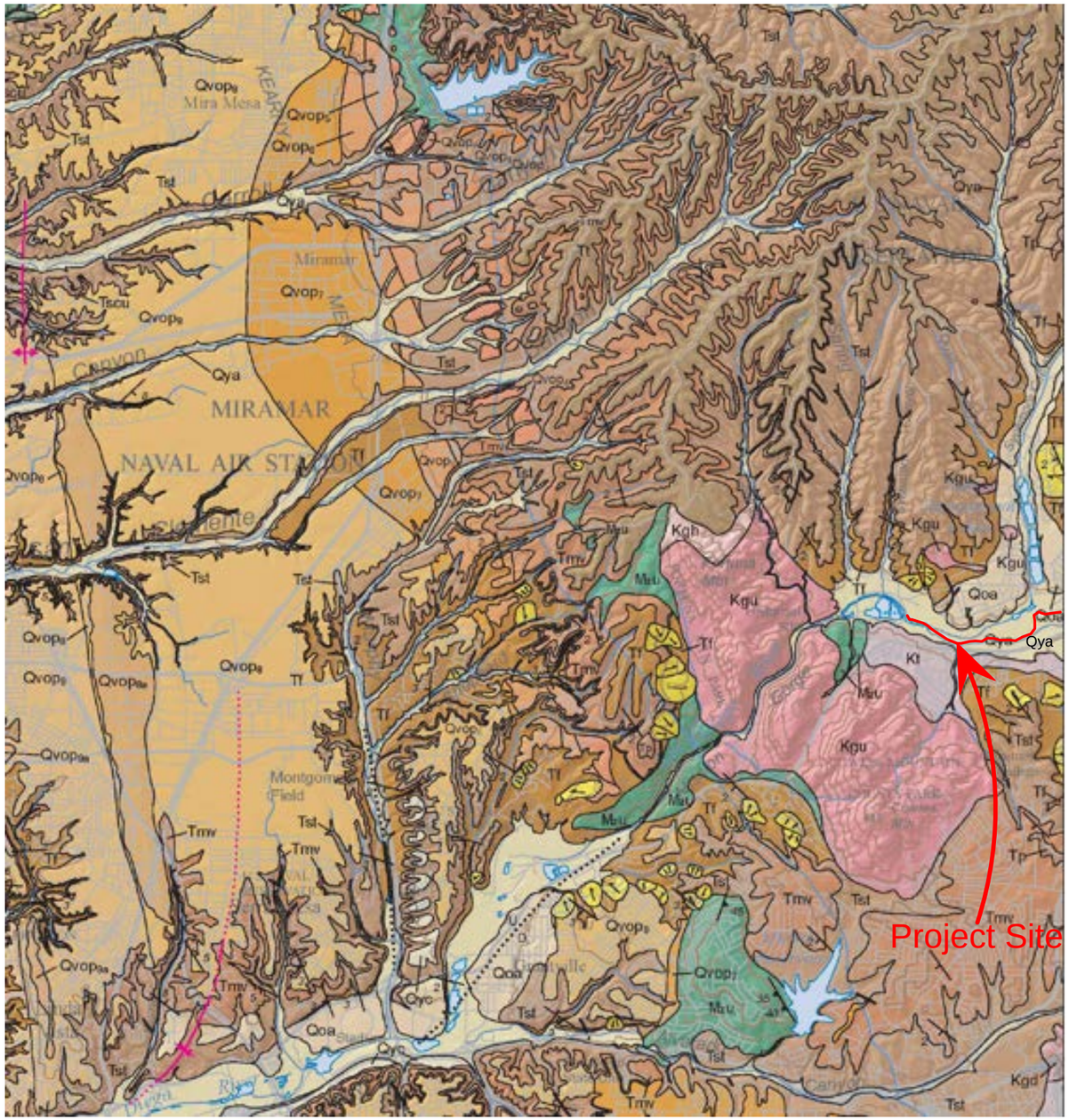
TP-4 (5') — Approximate Location of Test Pit (Depth in feet)

S-3 — Approximate Location of Scour Analysis Sample

0 500′ 1000′

Scale

SCST, Inc.	SUBSURFACE EXPLORATION MAP San Diego River Trail Carlton Oaks Golf Course Segment	Date: October, 2016 By: VAU Job No.: 160413P3-1	Figure: 2B



Reference: Kennedy, M.P. and Tan, S.S. (2008)

ABBREVIATED EXPLANATION

Approximate stratigraphic relationships only;
see pamphlet and CMU (Plate 2) for more detailed information

MODERN SURFICIAL DEPOSITS

- af — Artificial fill (late Holocene)
- Qw — Wash deposits (late Holocene)
- Qls — Landslide deposits, undivided (Holocene and Pleistocene)
- Qmb — Marine beach deposits (late Holocene)
- Qpe — Paralic estuarine deposits (late Holocene)
- Qmo — Undivided marine deposits in offshore region (late Holocene)
- Qcf — Canyon fill deposits in offshore region (late Holocene)

YOUNG SURFICIAL DEPOSITS

- Qya — Young alluvial flood-plain deposits (Holocene and late Pleistocene)
- Qyc — Young colluvial deposits (Holocene and late Pleistocene)
- Qct — Undivided canyon terrace deposits in offshore region (Holocene and Pleistocene)

OLD SURFICIAL DEPOSITS

- Qoa — Old alluvial flood-plain deposits, undivided (late to middle Pleistocene)
- Qop — Old paralic deposits, undivided (late to middle Pleistocene)
  - Qop_{7} — Unit 7
  - Qop_{6} — Unit 6
  - Qop_{2-4} — Units 2-4, undivided

VERY OLD SURFICIAL UNITS

- Qvoa — Very old alluvial flood-plain deposits, undivided (middle to early Pleistocene)
- Qvop — Very old paralic deposits, undivided (middle to early Pleistocene)
  - $Qvop_{7}$ — Unit 7
  - $Qvop_{6}$ — Unit 6
  - $Qvop_{5}$ — Unit 5
  - $Qvop_{4}$ — Unit 4
  - $Qvop_{3}$ — Unit 3
  - $Qvop_{2}$ — Unit 2
  - $Qvop_{1}$ — Unit 1
  - $Qvop_{13}$ — Unit 13
  - $Qvop_{12}$ — Unit 12
  - $Qvop_{11}$ — Unit 11
  - $Qvop_{10}$ — Unit 10
  - $Qvop_{9}$ — Unit 9
  - $Qvop_{8}$ — Unit 8
  - $Qvop_{11a}$ — Unit 11a
  - $Qvop_{10a}$ — Unit 10a
  - $Qvop_{9a}$ — Unit 9a
  - $Qvop_{8a}$ — Unit 8a

SEDIMENTARY AND VOLCANIC BEDROCK UNITS

- Qtso — Undivided sediments and sedimentary rocks in offshore region (Holocene, Pleistocene, Pliocene and Miocene)
- Tsd — San Diego Formation (early Pleistocene and late Pliocene)
  - Tsd - undivided
  - Tsd_{cg} - transitional marine and nonmarine pebble and cobble conglomerate
  - Tsd_{ss} - marine sandstone
- Tbs — Basaltic-andesite dike (Miocene)
- Tmv — Undivided sedimentary rocks in offshore region (Miocene)
- Tmvo — Undivided volcanic rocks in offshore region (Miocene)
- Tmvso — Undivided volcanic and sedimentary rocks in offshore region (Miocene)
- To — Otay Formation (late Oligocene)
- Tp — Pomerado Conglomerate (middle Eocene)
  - Tp_{ms} - Miramar Sandstone Member
- Tmv — Mission Valley Formation (middle Eocene)
- Tst — Stadium Conglomerate (middle Eocene)
- Tf — Friars Formation (middle Eocene)
- Tsc — Scripps Formation (middle Eocene)
  - Tscu - upper unit
- Ta — Ardath Shale (middle Eocene)
- Tt — Torrey Sandstone (middle Eocene)
- Td — Delmar Formation (middle Eocene)
- Td+Tf — Delmar Formation and Friars Formation, undivided (middle Eocene)
- Tmss — Mount Soledad Formation (middle Eocene)
  - Tmss - sandstone
  - Tmsc - cobble conglomerate
- Teo — Undivided Eocene rocks in offshore region (Eocene)
- Kcs — Cabrillo Formation (Upper Cretaceous)
  - Kcs - sandstone
  - Kccg - cobble conglomerate
- Kp — Point Loma Formation (Upper Cretaceous)
- Kl — Lusardi Formation (Upper Cretaceous)
- Kuo — Undivided rocks of the Rosario Group in the offshore area (Upper Cretaceous)

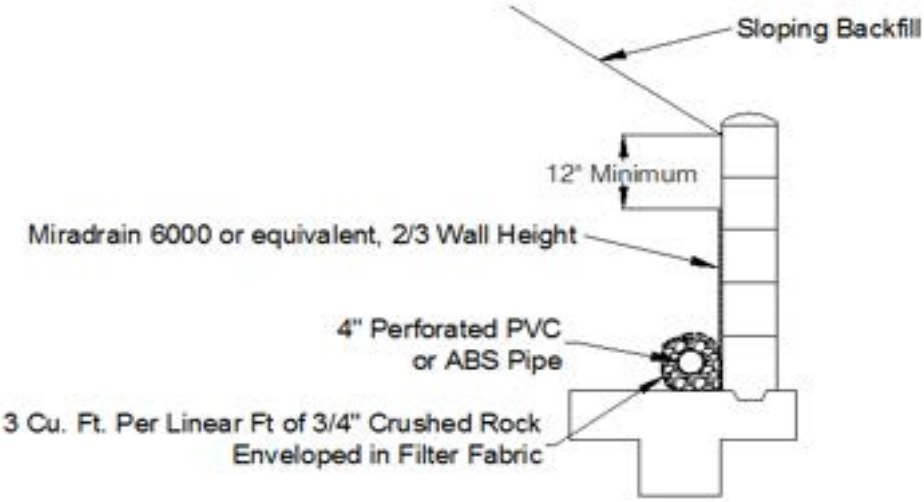
UNNAMED CRETACEOUS ROCKS OF THE PENINSULAR RANGES BATHOLITH

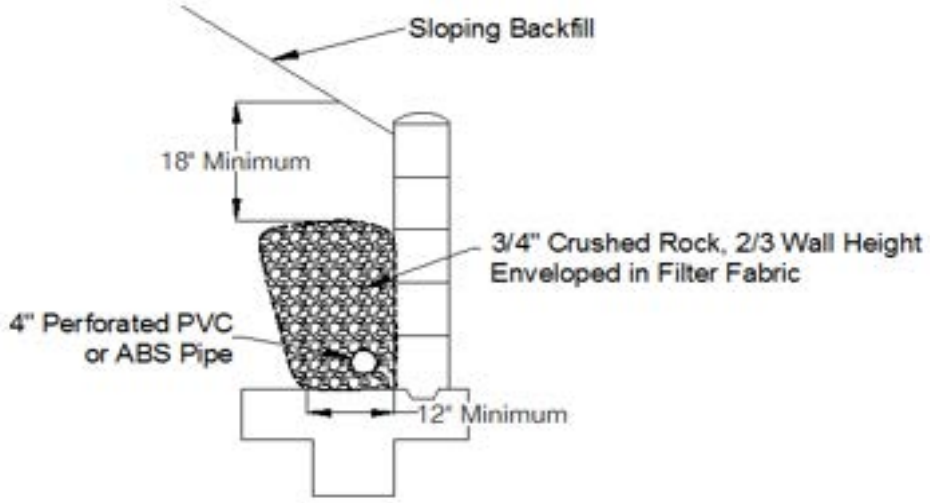
- Kgu — Granodiorite and tonalite, undivided (mid-Cretaceous)
- Kgd — Granodiorite, undivided (mid-Cretaceous)
- Kt — Tonalite, undivided (mid-Cretaceous)
- Kd — Diorite, undivided (mid-Cretaceous)
- Kgh — Hypabyssal rocks, undivided (mid-Cretaceous)

ONSHORE MAP SYMBOLS

- Contact - Contact between geologic units; dotted where concealed.
- Fault - Solid where accurately located; dashed where approximately located; dotted where concealed. U = upthrown block, D = downthrown block. Arrow and number indicate direction and angle of dip of fault plane.
- Anticline - Solid where accurately located; dashed where approximately located; dotted where concealed. Arrow indicates direction of axial plunge.
- Syncline - Solid where accurately located; dotted where concealed. Arrow indicates direction of axial plunge.
- Landslide - Arrows indicate principal direction of movement. Queried where existence is questionable.
- Strike and dip of beds
  - Inclined
- Strike and dip of gneissic joints
  - Inclined
  - Vertical
- Strike and dip of metamorphic foliation
  - Inclined

SCST, Inc.	REGIONAL GEOLOGY AND FAULT MAP San Diego River Trail Carlton Oaks Golf Course Segment	Date: October, 2016 By: JCU/VAU Job No.: 160413P3-1	Figure: 3





Not to Scale

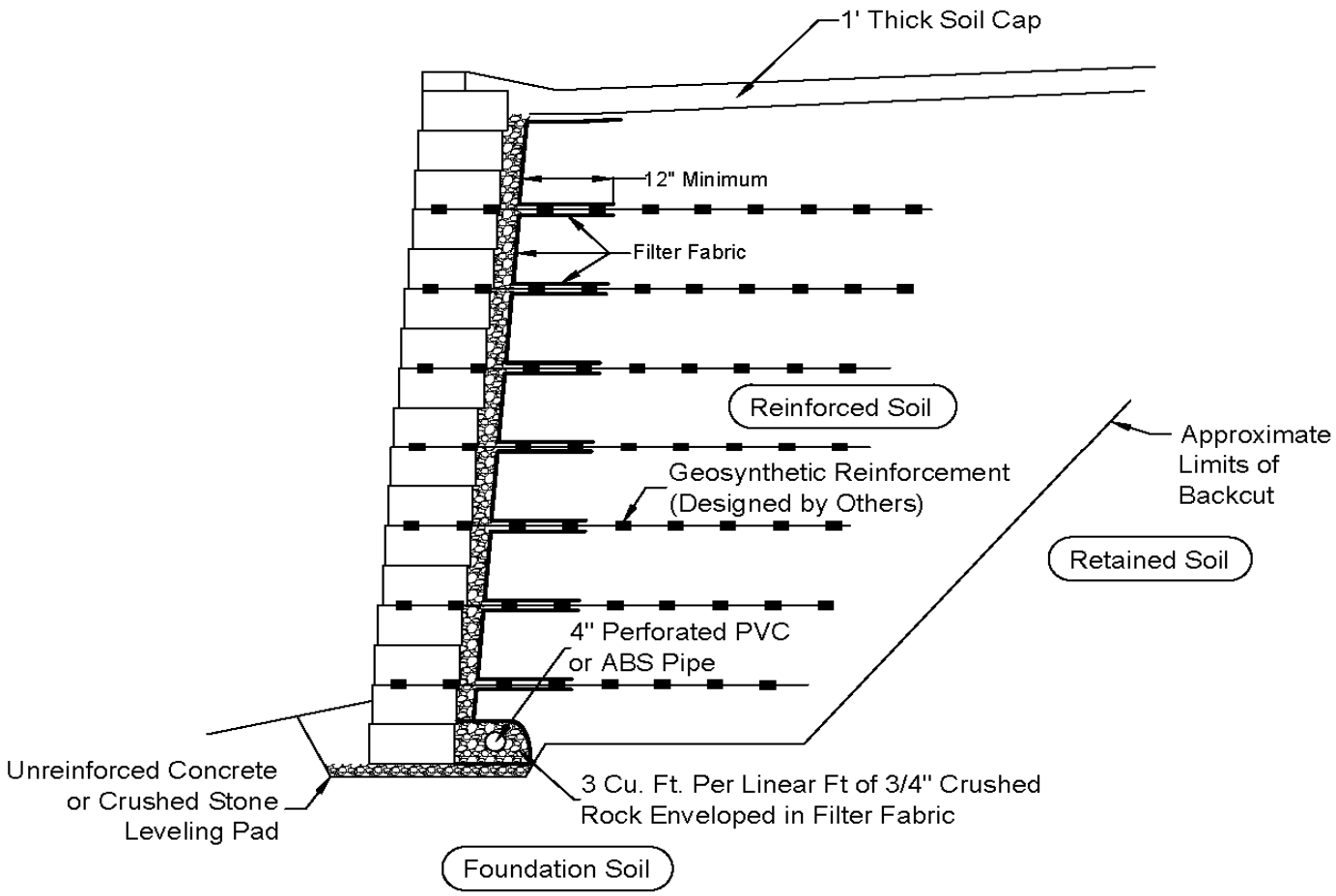
NOTES

1) Waterproof back of wall following architect's specifications.

2) 4" minimum perforated pipe, SDR35 or equivalent, holes down, 1% fall to outlet. Provide solid outlet pipe at suitable locations.

3) Drain instalation and outlet connection should be observed by the geotechnical consultant.

SCST, Inc.	TYPICAL RETAINING WALL BACKDRAIN DETAILS San Diego River Trail Carlton Oaks Golf Course Segment		
	By: JCU	Date:	October, 2016
	Job Number: 160413P3-1	Figure:	4



Not to Scale

NOTES

1) Backcut as recommended by the geotechnical report or field evaluation.
2) Additional drain at excavation backcut may be recommended based on conditions observed during construction.
3) Filter fabric should be installed between crushed rock and soil. Filter fabric should consist of Mirafi 140N or equivalent. Filter fabric should be overlapped approximately 6 inches.
4) Perforated pipe should outlet through a solid pipe to an appropriate gravity outfall. Perforated pipe and outlet pipe should have a fall of at least 1%.
5) Drain installation and outlet connection should be observed by the geotechnical consultant.

SCST, Inc.	TYPICAL MSE RETAINING WALL DETAIL San Diego River Trail Carlton Oaks Golf Course Segment		
	By: JCU	Date:	October, 2016
	Job No: 160413P3-1	Figure:	5

APPENDIX I
FIELD INVESTIGATION

Our field investigation consisted of excavating four test pits on October 14, 2016 along the existing berm to depths of about 4 to 5 feet below the existing ground surface using hand tools. We also collected three samples of near-surface soils within the San Diego River channel (one at the project site, one mile upstream, and one mile downstream) for use in scour analysis by others. Figures 2A and 2B present the approximate locations of the test pits and scour analysis samples. The field investigation was performed under the observation of an SCST engineer who also logged the test pits and obtained samples of the materials encountered.

The soils are classified in accordance with the Unified Soil Classification System as illustrated on Figure I-1. Logs of the test pits are presented on Figures I-2 through I-5.

SUBSURFACE EXPLORATION LEGEND

UNIFIED SOIL CLASSIFICATION CHART

SOIL DESCRIPTION		GROUP SYMBOL	TYPICAL NAMES
I. COARSE GRAINED, more than 50% of material is larger than No. 200 sieve size.			
GRAVELS More than half of coarse fraction is larger than No. 4 sieve size but smaller than 3".	CLEAN GRAVELS	GW	Well graded gravels, gravel-sand mixtures, little or no fines
		GP	Poorly graded gravels, gravel sand mixtures, little or no fines.
	GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, poorly graded gravel-sand-silt mixtures.
		GC	Clayey gravels, poorly graded gravel-sand, clay mixtures.
SANDS More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SANDS	SW	Well graded sand, gravelly sands, little or no fines.
		SP	Poorly graded sands, gravelly sands, little or no fines.
		SM	Silty sands, poorly graded sand and silty mixtures.
		SC	Clayey sands, poorly graded sand and clay mixtures.
II. FINE GRAINED, more than 50% of material is smaller than No. 200 sieve size.			
	SILTS AND CLAYS (Liquid Limit less than 50)	ML	Inorganic silts and very fine sands, rock flour, sandy silt or clayey-silt-sand mixtures with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
		OL	Organic silts and organic silty clays or low plasticity.
	SILTS AND CLAYS (Liquid Limit greater than 50)	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Inorganic clays of high plasticity, fat clays.
		OH	Organic clays of medium to high plasticity.
III. HIGHLY ORGANIC SOILS		PT	Peat and other highly organic soils.

SAMPLE SYMBOLS

- ☒ - Bulk Sample
- CAL - Modified California sampler
- CK - Undisturbed Chunk sample
- MS - Maximum Size of Particle
- ST - Shelby Tube
- SPT - Standard Penetration Test sampler

GROUNDWATER SYMBOLS

- ▽ - Water level at time of excavation or as indicated
- ∿ - Water seepage at time of excavation or as indicated

LABORATORY TEST SYMBOLS

- AL - Atterberg Limits
- CON - Consolidation
- COR - Corrosivity Tests (Resistivity, pH, Chloride, Sulfate)
- DS - Direct Shear
- EI - Expansion Index
- MAX - Maximum Density
- RV - R-Value
- SA - Sieve Analysis
- UC - Unconfined Compression

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	I-1

LOG OF TEST PIT TP-1

Date Drilled: 10/14/2016 | Logged by: VAU

Equipment: Hand Tools | Project Manager: TBC

Elevation (ft): | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1	SM	**FILL (Qf):** SILTY SAND, moderate brown, fine to medium grained, trace gravel, moist, loose to medium dense.		X			
2							
3							
4		**TEST PIT TERMINATED AT 4 FEET.**					
5							
6							
7							
8							
9							
10							

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San Diego River Trail

Carlton Oaks Golf Course Segment

By:	VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	I-2

LOG OF TEST PIT TP-2

Date Drilled: 10/14/2016 | Logged by: VAU

Equipment: Hand Tools | Project Manager: TBC

Elevation (ft): | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
1	SM	**FILL (Qf):** SILTY SAND, moderate brown, fine to medium grained, trace gravel, moist, loose to medium dense.		X			AL SA COR
2							
3							
4		**TEST PIT TERMINATED AT 4 FEET.**					
5							
6							
7							
8							
9							
10							

SCST, Inc.

San Diego River Trail

Carlton Oaks Golf Course Segment

By:	VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	I-3

LOG OF TEST PIT TP-3

Date Drilled: 10/14/2016 | Logged by: VAU

Equipment: Hand Tools | Project Manager: TBC

Elevation (ft): | Depth to Groundwater (ft): Not Encountered

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
0	SM	**FILL (Qf):** SILTY SAND, moderate brown, fine to medium grained, trace gravel, moist, loose to medium dense.		X			MAX DS
5		**TEST PIT TERMINATED AT 5 FEET.**					

SCST, Inc.

San Diego River Trail

Carlton Oaks Golf Course Segment

By:	VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	I-4

LOG OF TEST PIT TP-4

Date Drilled: 10/14/2016 | Logged by: VAU
Equipment: Hand Tools | Project Manager: TBC
Elevation (ft): | Depth to Groundwater (ft): 4½

DEPTH (ft)	USCS	SUMMARY OF SUBSURFACE CONDITIONS	SAMPLES: DRIVEN	SAMPLES: BULK	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (pcf)	LABORATORY TESTS
0	SM	**FILL (Qf):** SILTY SAND, moderate brown, fine to medium grained, trace clay, low plasticity, moist, loose to medium dense.		X			AL SA EI
1							
2							
3							
4		▽ Groundwater encountered at 4½ feet.					
5		**TEST PIT TERMINATED AT 5 FEET.**					
6							
7							
8							
9							
10							

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	I-5

APPENDIX II
LABORATORY TESTING

Laboratory tests were performed to provide geotechnical parameters for engineering analyses. The following tests were performed:

- **CLASSIFICATION:** Field classifications were verified in the laboratory by visual examination. The final soil classifications are in accordance with the Unified Soil Classification System.

- **GRAIN SIZE DISTRIBUTION:** The grain size distribution was determined on five samples in accordance with ASTM D422. Figures II-1 through II-5 present the test results.

- **ATTERBERG LIMITS:** The Atterberg limits were determined on two samples in accordance with ASTM D4318. Figures II-1 and II-2 present the test results.

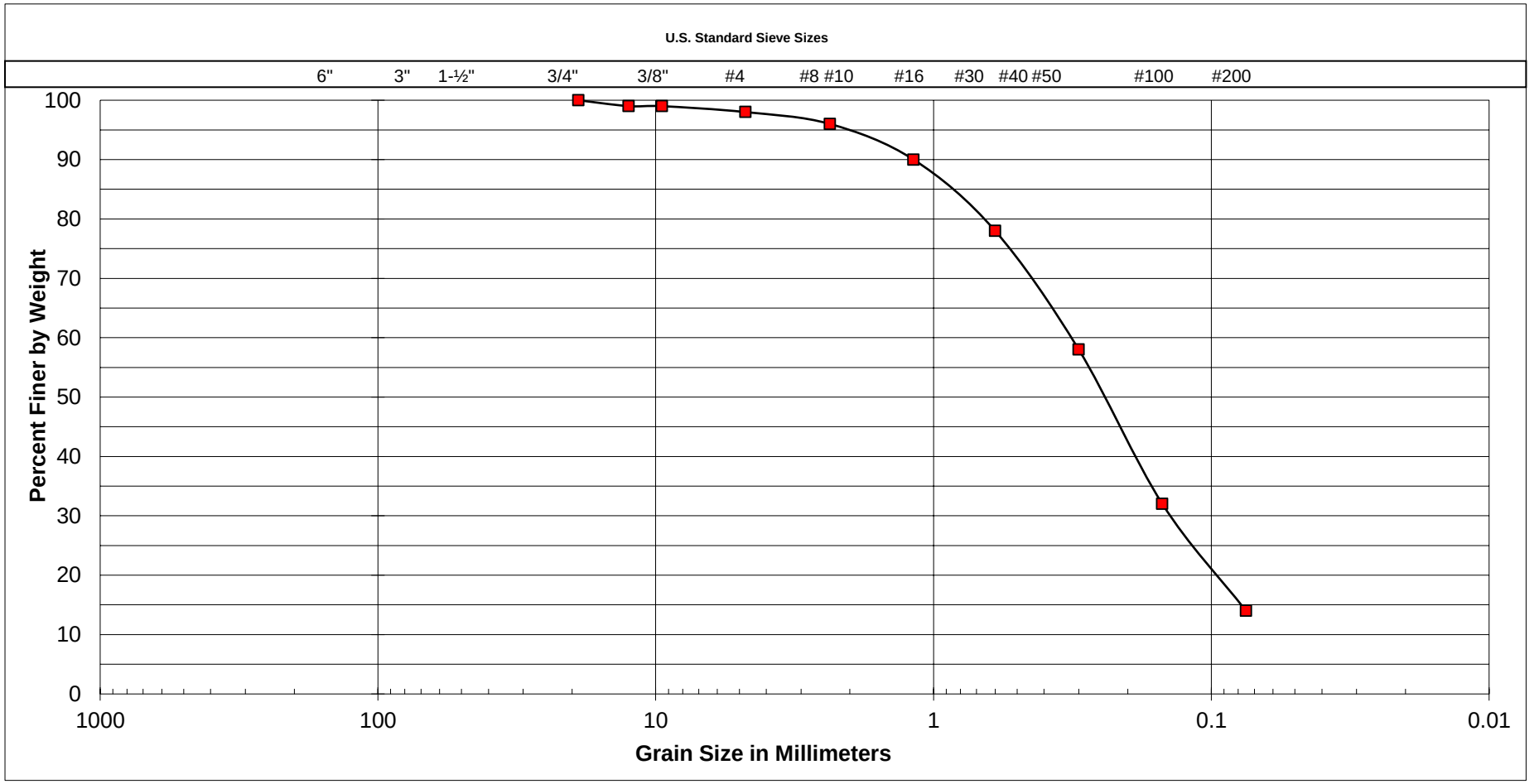
- **MAXIMUM DENSITY/OPTIMUM MOISTURE**: The maximum dry density and optimum moisture content were determined on one soil sample in accordance with ASTM D1557. Figure II-6 presents the test results.

- **EXPANSION INDEX:** The expansion index was determined on one sample in accordance with ASTM D4829. Figure II-6 presents the test results.

- **CORROSIVITY**: Corrosivity tests were performed on one sample. The pH and minimum resistivity were determined in general accordance with California Test 643. The soluble sulfate content was determined in accordance with California Test 417. The total chloride ion content was determined in accordance with California Test 422. Figure II-6 presents the test results.

- **DIRECT SHEAR:** A direct shear test was performed on one sample in accordance with ASTM D3080. The sample was remolded to approximately 90% relative compaction. The shear stress was applied at a constant rate of strain of 0.003 inch per minute. Figure II-7 presents the test results.

Soil samples not tested are now stored in our laboratory for future reference and analysis, if needed. Unless notified to the contrary, all samples will be disposed of 30 days from the date of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
TP-2 at 0 to 4 feet

UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

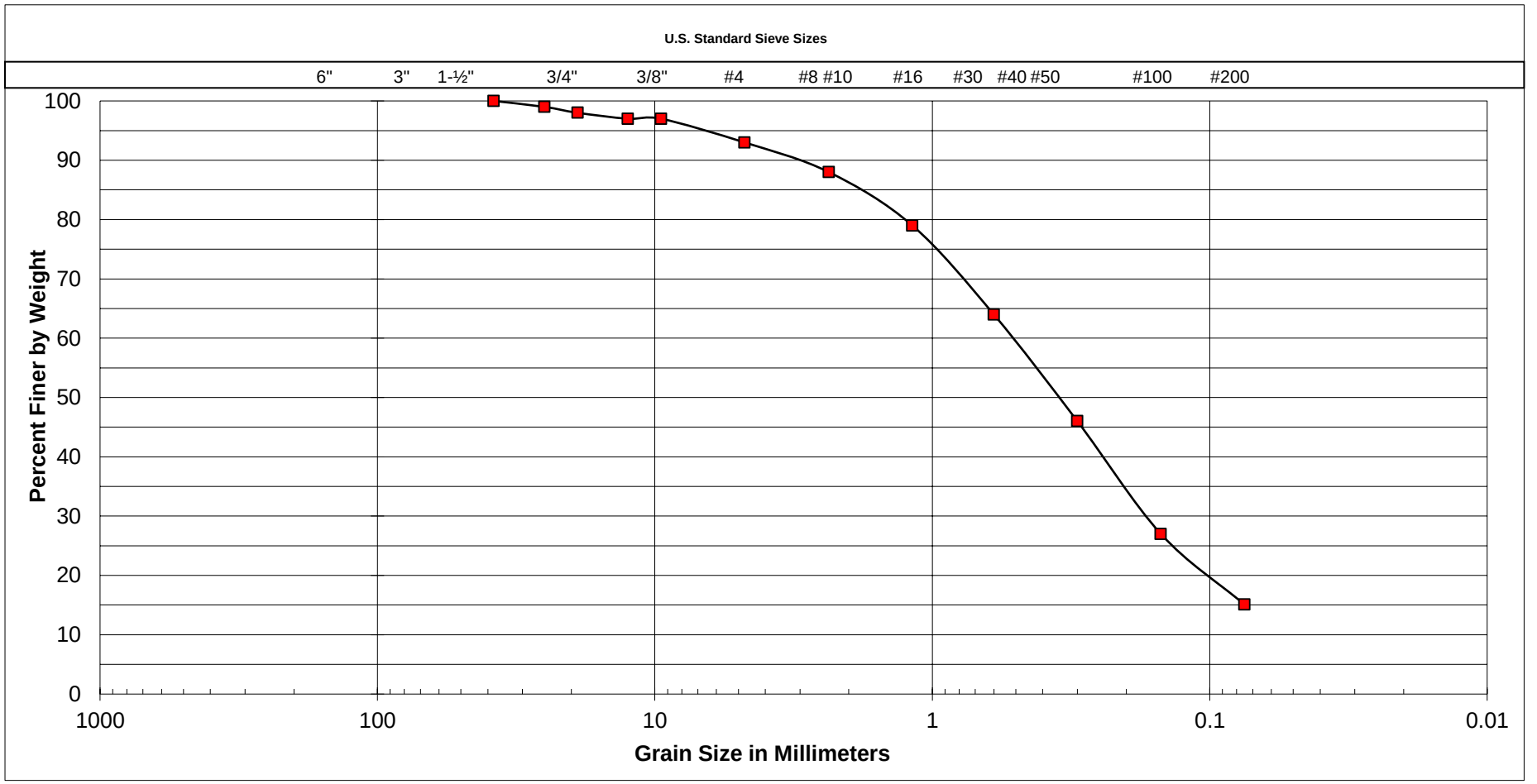
ATTERBERG LIMITS	
LIQUID LIMIT	NP
PLASTIC LIMIT	NP
PLASTICITY INDEX	NP

SCST, Inc.

San Diego River Trail

Carlton Oaks Golf Course Segment

By:	PE/VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-1



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
TP-4 at 0 to 5 feet

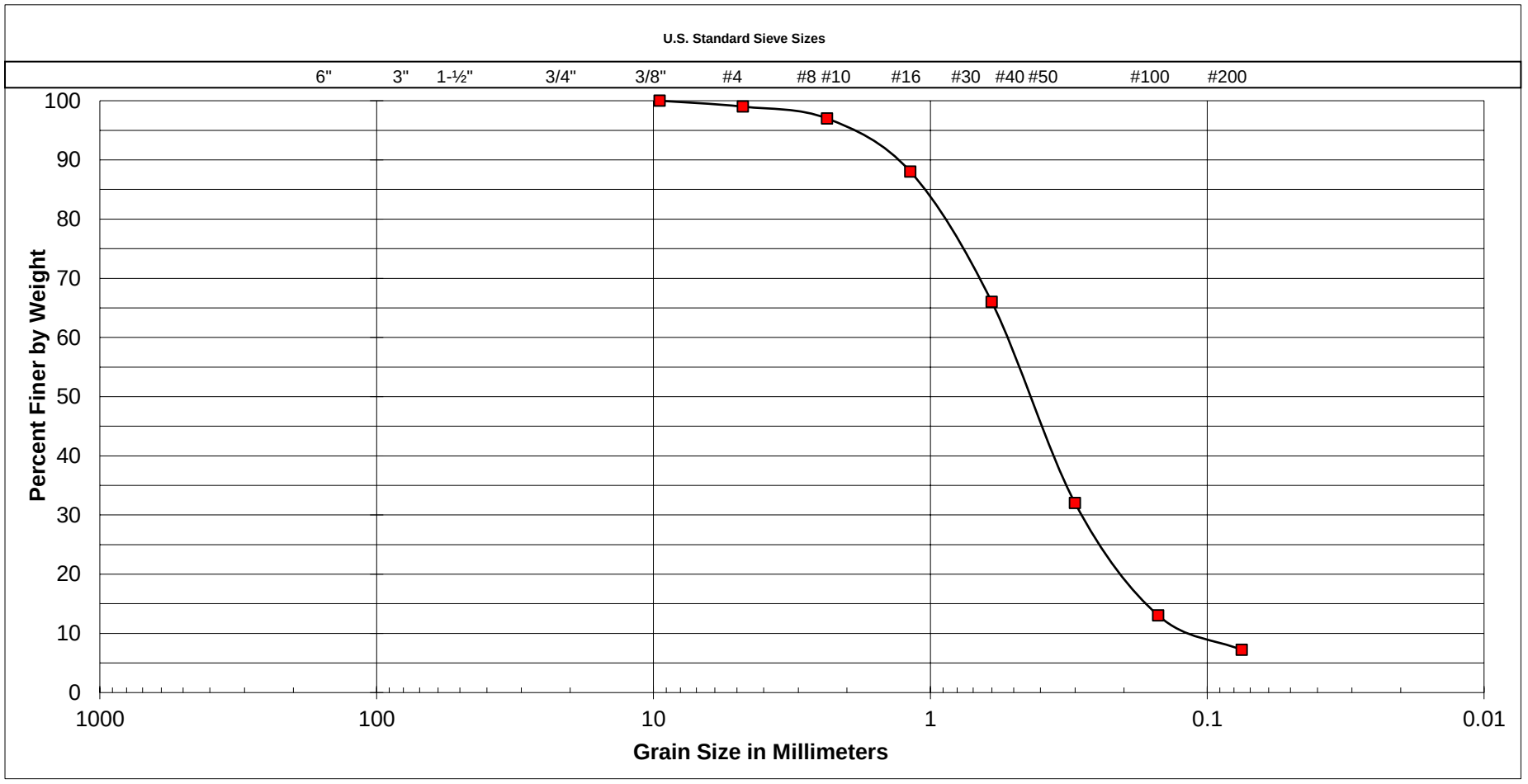
UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT	NP
PLASTIC LIMIT	NP
PLASTICITY INDEX	NP

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	PE/VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-2



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
S-1

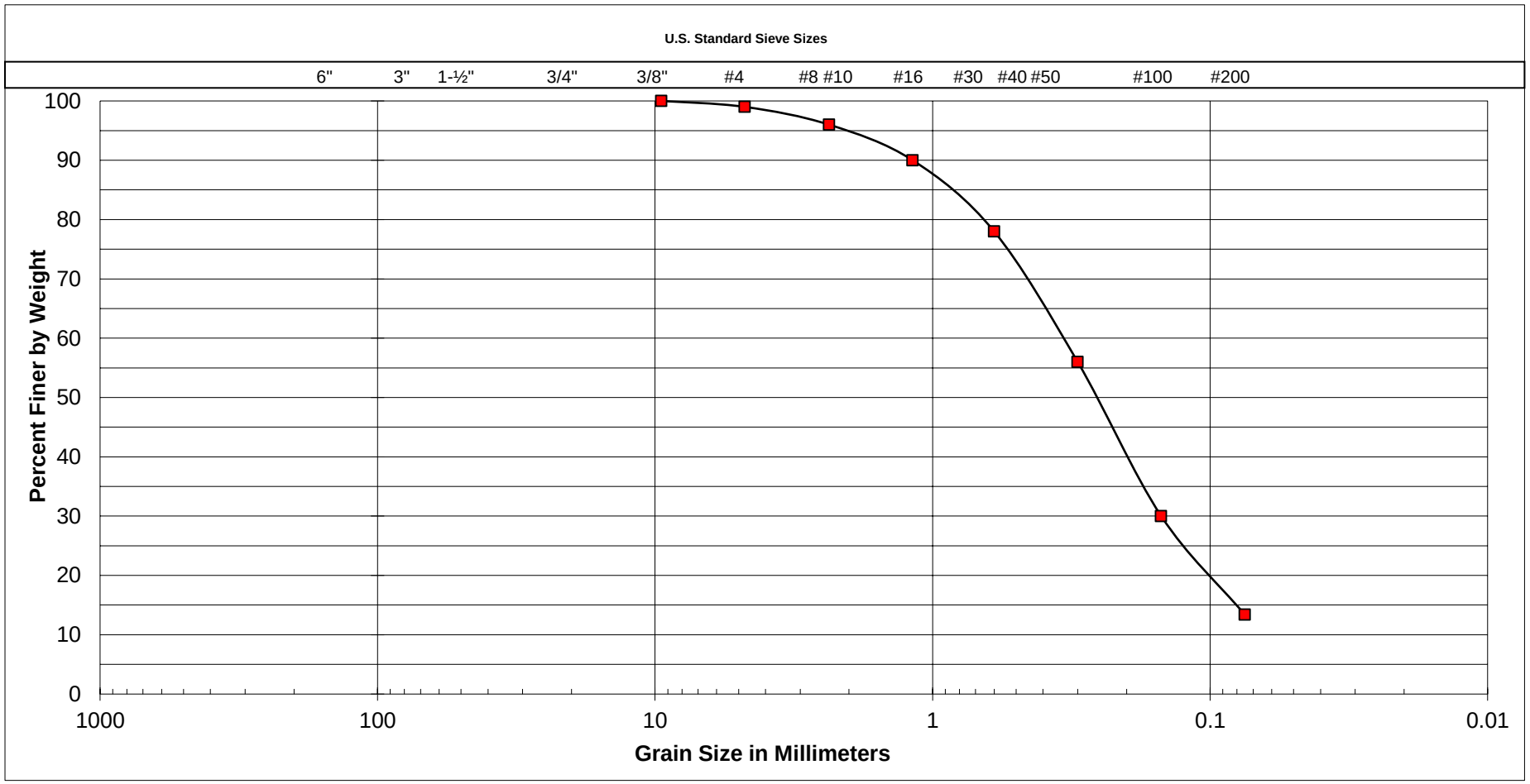
UNIFIED SOIL CLASSIFICATION:	SP-SM
DESCRIPTION	POORLY GRADED SAND wth SILT

ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	PE/VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-3



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
S-2

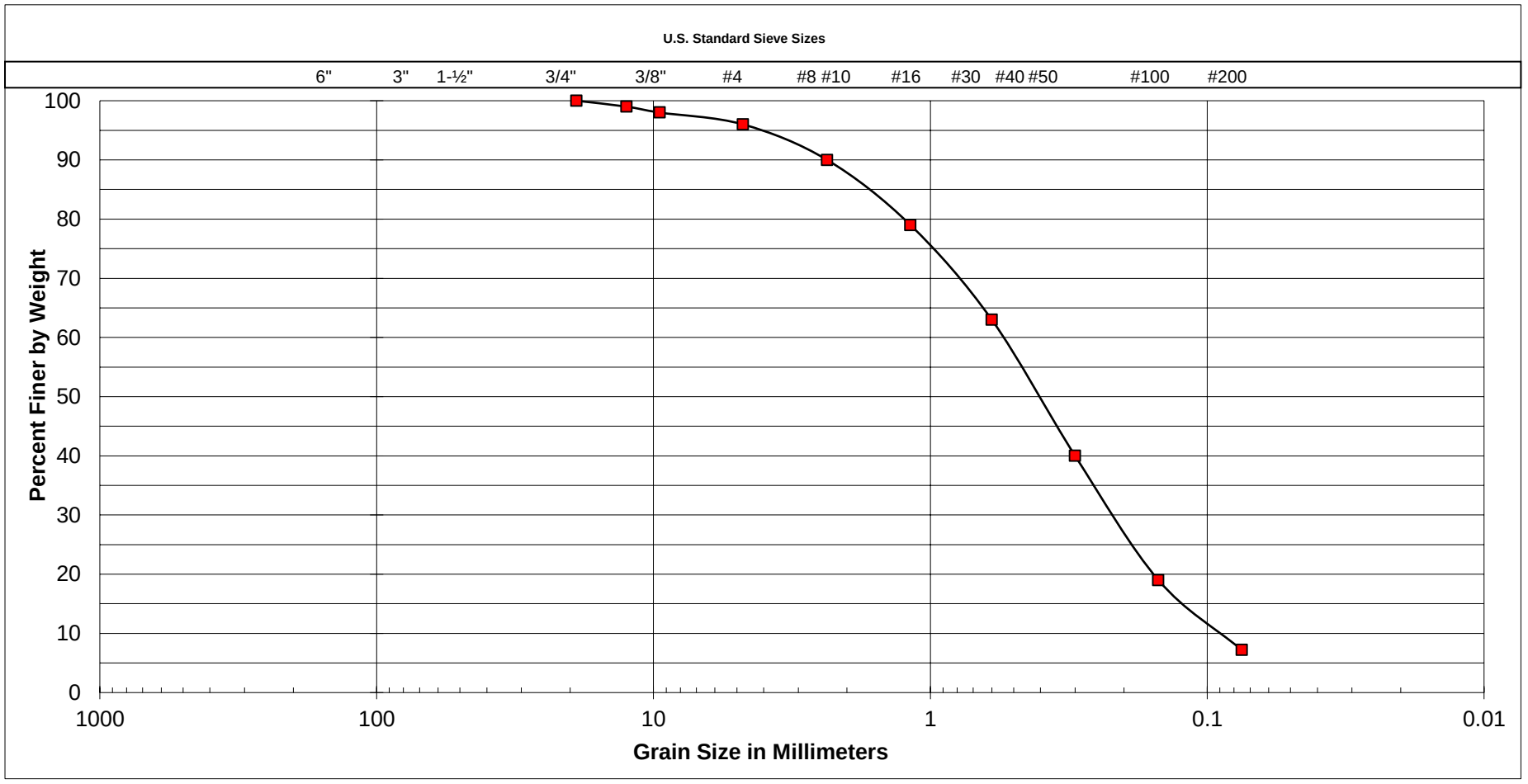
UNIFIED SOIL CLASSIFICATION:	SM
DESCRIPTION	SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	PE/VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-4



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
S-3

UNIFIED SOIL CLASSIFICATION:	SP-SM
DESCRIPTION	POORLY GRADED SAND with SILT

ATTERBERG LIMITS	
LIQUID LIMIT	-
PLASTIC LIMIT	-
PLASTICITY INDEX	-

SCST, Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	PE/VAU	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-5

MAXIMUM DENSITY AND OPTIMUM MOISTURE CONTENT

ASTM D1557

SAMPLE	DESCRIPTION	MAXIMUM DRY DENSITY (lbs/ft^3)	OPTIMUM MOISTURE (%)
TP-3 at 0 to 5 feet	SILTY SAND	123.7	9.6

EXPANSION INDEX

ASTM D2489

SAMPLE	DESCRIPTION	EXPANSION INDEX
TP-4 at 0 to 5 feet	SILTY SAND	1

CLASSIFICATION OF EXPANSIVE SOIL [1]

EXPANSION INDEX	POTENTIAL EXPANSION
0 - 20	Very Low
21 - 50	Low
51 - 90	Medium
91 - 130	High
Above 130	Very High

1. ASTM D4829

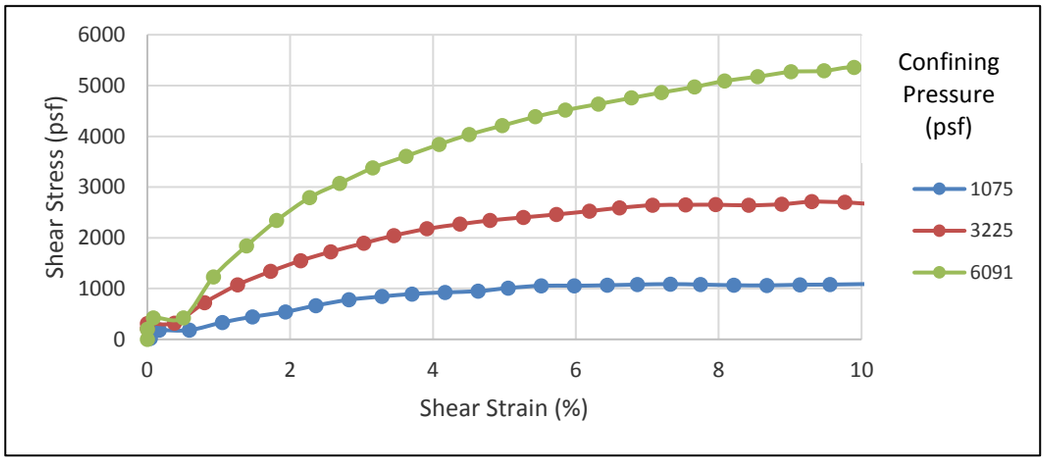
RESISTIVITY, pH, SOLUBLE CHLORIDE and SOLUBLE SULFATE

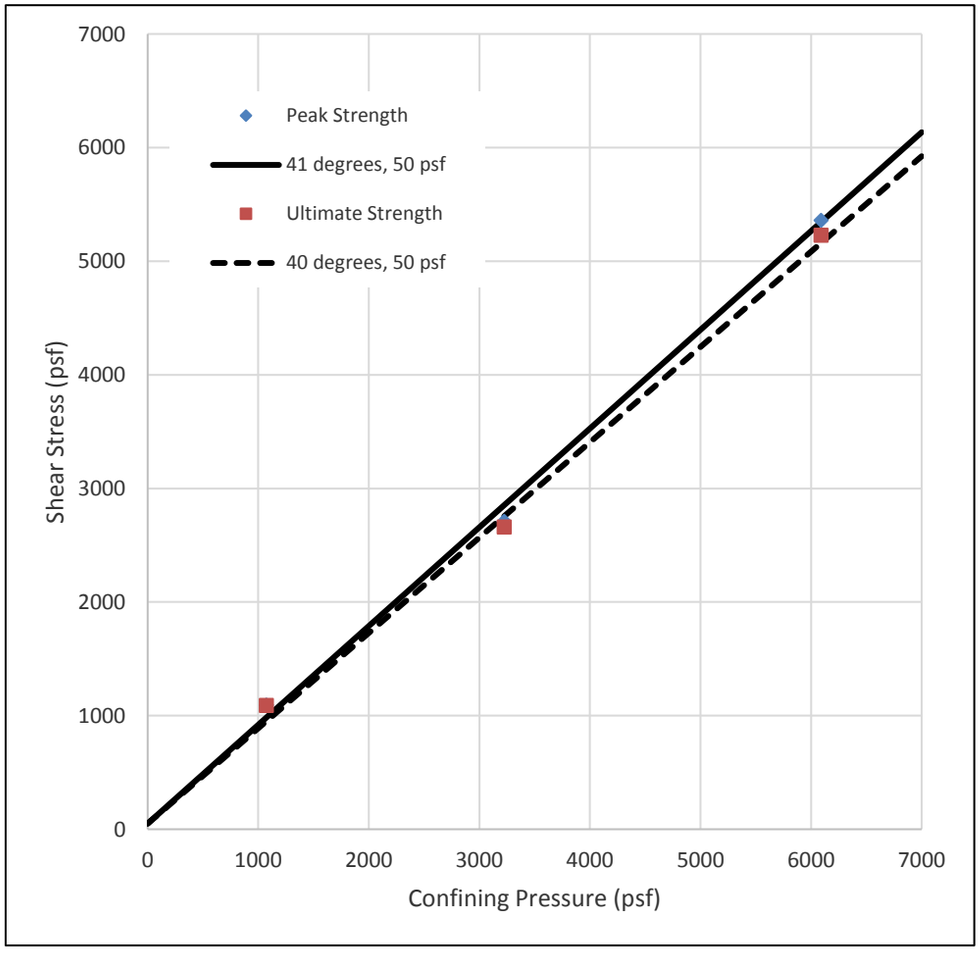
SAMPLE	RESISTIVITY (Ω-cm)	pH	CHLORIDE (%)	SULFATE (%)
TP-2 at 0 to 4 feet	797	7.2	0.048	0.054

SULFATE EXPOSURE CLASSES [2]

Class	Severity	Water-Soluble Sulfate (SO_4) in Soil, Percent by Mass
S0	Not applicable	$SO_4 < 0.10$
S1	Moderate	$0.10 \leq SO_4 < 0.20$
S2	Severe	$0.20 \leq SO_4 \leq 2.00$
S3	Very Severe	$SO_4 > 2.00$

2. ACI 318, Table 4.2.1





SAMPLE ID: TP-3 at 0 to 5 feet

SILTY SAND, moderate brown

NOTES: Remolded to 90% Relative Compaction
Strain Rate: 0.003 in/min
Sample was consolidated and drained

	Peak	Ultimate
Φ	41 °	40 °
c	50 psf	50 psf

	Initial	Final
γ_d	111.4 pcf	111.4 pcf
w_c	9.9 %	17.6 %
Saturation	53 %	94 %

SCST Inc.

San Diego River Trail
Carlton Oaks Golf Course Segment

By:	TBC	Date:	October, 2016
Job Number:	160413P3-1	Figure:	II-7

Phase I Environmental Site Assessment

San Diego River Trail – Carlton Oaks Segment
Santee, San Diego, California

13 January 2017
AGE Project No. 16-3919

PREPARED FOR:

San Diego Association of Governments (SANDAG)
and
Nasland Engineering

PREPARED BY:

Advanced GeoEnvironmental, Inc.

Stockton • San Francisco Bay Area • Monterey • Los Angeles • Spokane • Reno • Dallas
(800) 511-9300
www.advgeoenv.com

Phase I Environmental Site Assessment

San Diego River Trail – Carlton Oaks Segment
Santee, San Diego, California 92071

13 January 2017
AGE Project No. 16-3919

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Phase I Environmental Site Assessment
San Diego River Trail – Carlton Oaks Segment
Santee, San Diego, California 92071

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Phase I Environmental Site Assessment
San Diego River Trail – Carlton Oaks Segment
Santee, San Diego, California 92071

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Appendix A - *Photographs of the Subject Property*
Appendix B - *Historical Documents*
Appendix C - *Regulatory Records Documentation (with EDR Database Searches)*
Appendix D - *Regulatory Agency Records*
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Phase I Environmental Site Assessment

San Diego River Trail – Carlton Oaks Segment
Santee, San Diego, California

EXECUTIVE SUMMARY

Advanced GeoEnvironmental, Inc. (AGE) has conducted this Phase I Environmental Site Assessment for the proposed San Diego River Trail, Carlton Oaks Segment (SDRT-COS) bikeway (hereafter labeled subject property or property). The subject property is a section of the regional bikeway that will eventually extend along the San Diego River from the Pacific Ocean to its head waters near Julian. The subject property extends between the City of Santee and the City of San Diego, California.

The subject property consists of an approximately 2 mile corridor of property which would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Bordering the southern portion of the subject property as it extends along the golf course section is the San Diego River, which parallels the 52 Freeway located directly south. South of the freeway is a mixed use area combining both residential and retail/commercial use. Areas extending north of the golf course are primarily comprised of residential with limited retail and commercial located in the northeasterly portions. A combination of residential and retail form the borders of Mast Park on the eastern segment of the subject property.

The focus of this Phase I Environmental Assessment was to determine if the soil and, or groundwater along the planned subject property has been negatively impacted by the use, storage, or release of hazardous materials from adjacent and nearby businesses, or previous land use activities. And if so, do these hazardous materials that may be present in the soil and ground water represent an environmental concern for the construction and intended use of the subject property.

Historically, the proposed alignment of the subject property has remained absent of any development. No buildings, structures, or improved roadways have ever been present on the subject property. Carlton Oaks Golf Course, which forms a portion of the northern border of the subject property in the western section of the project area was constructed in the early 1960's. The dirt trail in Mast Park West that the subject property will follow in the eastern section of the project area were constructed in the early 1980's. Our physical inspection of the entire length of the subject property, along with a review of historical records and government documents, did not reveal any evidence of recognized environmental conditions. It is unlikely any portion of the subject property has been impacted by any hazardous materials.

FINDINGS

Based on the standards set by ASTM Standard Practice E1527-13, a recognized environmental condition (REC), is the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. Conditions that are determined to be *de minimis*, which do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies, are not recognized environmental conditions.

The standard further identifies historical RECs and controlled RECs. An historical REC (HREC) is a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. A controlled REC (CREC) is a REC resulting from a past release of hazardous substances, or petroleum products that have been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls. The following findings are differentiated below as *de minimis* conditions unlikely to be subject to government enforcement, HRECs, CRECs and RECs.

DE MINIMIS CONDITIONS

This assessment revealed no evidence of *de minimis* conditions in connection with the subject property.

HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS

This assessment has revealed no evidence of HRECs in connection with the subject property.

CONTROLLED ENVIRONMENTAL CONDITIONS

This assessment has revealed no evidence of CRECs in connection with the subject property.

RECOGNIZED ENVIRONMENTAL CONDITIONS

This assessment has revealed no evidence of RECs in connection with the subject property.

CONCLUSIONS AND OPINION

Advanced GeoEnvironmental, Inc. has performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E1527-13, US-EPA AAI for the proposed San Diego River Trail, Carlton Oaks Segment to be located along an approximately 2-mile stretch of property extending from West Hills Parkway, through Carlton Oaks Golf Course and the western portion of Mast Park in the cities of Santee and San Diego, California. Any exceptions to, or deletions from, this practice are described in Section 7.1 of this report or presented as additional services in Section 6.0.

AGE does not recommend any further environmental investigations of the subject property at this time.

Phase I Environmental Site Assessment

San Diego River Trail – Carlton Oaks Segment
Santee, San Diego California 92071

1.0. INTRODUCTION

Advanced GeoEnvironmental, Inc. (AGE) has been retained by Mr. Larry Thornburgh at Nasland Engineering to perform a Phase I Environmental Site Assessment (Phase I), for an approximately 2 mile corridor of property identified as the "subject property or property" proposed for the San Diego River Trail – Carlton Oaks Segment (SDRT – COS). The subject property will extend in a westerly direction from West Hills Parkway to vehicle parking lot located adjacent to Carlton Hills Boulevard in Mast Park.

The SDRT-COS segment of the subject property consists of an approximately 2 mile corridor of property which would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

The Phase I was performed in conformance with the scope and limitations of ASTM Standard Practice E1527-13 and the United States Environmental Protection Agency (USEPA) Standards and Practices for 'All Appropriate Inquiries (AAI)' (40 CFR Part 312). The Phase I is designed to provide the Client (user) with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the subject property.

1.1. PURPOSE

The purpose of the Phase I is to identify and assess environmental characteristics of the subject property that could lead to liability in the event of ownership, that could have a potential impact on property value or that could impact the present or future use of the subject property.

The purpose of ASTM Standard Practice E1527-13 and USEPA AAI is to define good commercial and customary practice for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the

scope of the *Comprehensive Environmental Response Compensation and Liability Act* (CERCLA) and petroleum products. As such, this practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability: that is, the practice that constitutes all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial and customary practice as defined at 42 U.S.C. §9601(35)(B). An evaluation of business environmental risk associated with a parcel of commercial real estate may necessitate investigation beyond that identified in this practice (based on ASTM Practice E1527-13). The goal of ASTM Standard Practice E1527-13 is to identify *recognized environmental conditions* (RECs) in connection with the subject property. A REC is defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. Conditions that are determined to be *de minimis*, which do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies, are not recognized environmental conditions.

The standard further identifies historical RECs and controlled RECs. An historical REC (HREC) is a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls. A controlled REC (CREC) is a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.

1.2. SITE DESCRIPTION

The subject property consists of an approximately 2 mile corridor of property which would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek (Figures 2 and 3).

1.2.1. Location and Legal Description

The subject property location can be identified as the following:

Site Address	Not identified under any addresses
Assessor's Parcel Number (APN)	None
Land Use Type	City park and golf course and undeveloped land
Size of Property	Approximately 2.02 mile corridor of land.

1.2.2. Site and Vicinity General Characteristics

The subject property corridor is located along the southern boundary of Carlton Oaks Golf Course, and within the western portion of Mast Park. Areas surrounding the park and golf course are a mix of residential and commercial in the City of Santee and San Diego, California. Figure 1 shows the setting of the subject property (7.5 Minute United States Geological Survey [USGS] Topographic Series, La Mesa and El Cajon, California). Photographs of the subject property are provided in Appendix A.

1.2.3. Current Use of Property

The western portion is an unimproved strip of land, which separates the golf course, from the San Diego River. The eastern portion of the subject property is in located within Mast park.

1.3. DETAILED SCOPE-OF-SERVICES

Except where identified in Section 7.1., the scope of work for this Phase I conforms to ASTM Standard Practice E1527-13, and the USEPA AAI (40 CFR Part 312). Any additional User requested scope of services is discussed in Section 6.0.

1.4. SIGNIFICANT ASSUMPTIONS

Our professional services were performed using that degree of care and skill ordinarily exercised by environmental consultants practicing in this or similar fields. Findings were based mainly upon examination of historical records, maps, aerial photographs and government agency lists, on a site reconnaissance visit, and on information obtained during personal interviews with persons of long term familiarity with the subject property as specified in ASTM E1527-13 and the USEPA AAI. Hazardous waste site lists presented in this report represents only a search of specific government records as

listed below. AGE is aware that additional government records may exist. It should be noted that government agencies often do not list all sites with environmental contamination or that the list could be inaccurate and/or incomplete.

Groundwater flow and depth to groundwater, unless otherwise specified by on-site well data, or well data from adjacent sites, are assumed based on geologic interpretations from available sources. AGE assumes the property has been correctly and accurately identified by the client, designated representative of the client, property contact, property owner, and property owner's representatives.

1.5. LIMITATIONS AND EXCEPTIONS

Property conditions, as well as local, state, tribal and federal regulations can change significantly over time. Therefore, the recommendations and conclusions presented as a result of this study apply strictly to the environmental regulations and property conditions existing at the time the study was performed. Available information has been analyzed using currently accepted assessment techniques and it is believed that the inferences made are reasonably representative of the property. AGE makes no warranty, expressed or implied, except that the services have been performed in accordance with generally accepted environmental property assessment practices applicable at the time and location of the study.

Considerations identified as beyond the scope of an ASTM Phase I that may affect business environmental risks at a property include the following: asbestos-containing materials (ACMs); biological agents; cultural and historic resources; ecological resources; endangered species; health and safety; indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment; industrial hygiene; lead-based paint (LBP); lead in drinking water; mold; radon; regulatory compliance; and wetlands. These environmental issues may warrant assessment based on the type of property or transaction; however, they are considered non-scope issues under ASTM Practice E1527-13. Any addition of non-scope items must be agreed upon between the user and AGE prior to initiation of the Phase I.

The Phase I Environmental Site Assessment is not, and should not be construed as, a warranty or guarantee about the presence or absence of environmental contaminants that may affect the property. Neither is the assessment intended to assure clear title to the property in question. The sole purpose of investigation into property title records is to ascertain a historical basis of prior land use. All findings, conclusions, and recommendations stated in this report are based upon facts, circumstances, and industry-accepted procedures for such services as they existed at the time this report was prepared (i.e., federal, state, and local laws, rules, regulations, market conditions, economic conditions, political climate, and other applicable matters). All findings, conclusions, and recommendations stated in this report are based on the data and

information provided, and observations and conditions that existed on the date and time of the property visit.

1.6. SPECIAL TERMS AND CONDITIONS

There were no special terms or conditions, agreed upon by the environmental professional, beyond the initial agreed upon scope of work, used in preparation of this report.

1.7. USER RELIANCE

Conclusions and recommendations in this report are based on findings regarding historical use of the site, and on features noted during the site reconnaissance. The absence of any potential gross contamination sources, historic or present, does not necessarily imply that the site is free of any contamination. This report only represents a 'due diligence' effort as to the current environmental status of the site. No other warranty, expressed or implied, is made as to the professional recommendations contained in this report.

2.0. USER PROVIDED INFORMATION

According to the ASTM Standard E1527-13 and the USEPA AAI, in order to qualify for one of the Landowner Liability Protections (LLPs) to CERCLA liability offered by the *Small Business Liability Relief and Brownfields Revitalization Act of 2001*, the client (user) must provide to the environmental professional the following information (if available) in relation to the subject property:

Title Records	A review of Title Records was not requested by the user.
Environmental Liens or Activity and Use Limitations	An environmental lien search was not requested by the user. Mr. Larry Thornburgh of Nasland Engineering is not aware of any environmental liens on the subject property.
Specialized Knowledge	AGE was not provided any specialized knowledge by the user and does not have any specialized knowledge of this property outside of what is contained in this report. The property ownership and tenants as well as all individuals who were interviewed as part of this investigation, have not reported any specialized knowledge of this property outside of what is contained in this report.
Commonly Known or Reasonably Ascertainable Information	The user provided no commonly known or reasonably ascertainable information available within the local community about the subject property that is material to recognized environmental conditions in connection with the property.

Valuation Reduction for Environmental Issues	Not applicable to this project
Owner, Property Manager, and Occupant Information	No written or verbal communication with the property owner, manager and/or occupant revealed any information which suggested that there are currently or historically any recognized environmental conditions associated with the subject property not noted in this assessment.
Reason for Performing Phase I	Construction of a bikeway trail
Other	No modifications to the ASTM E1527-13 standard scope-of-services were requested by the user for special circumstances that might be encountered at the subject property. Any additional user requested scope of services is discussed in Section 6.0.

Failure to provide the above information could result in a determination that 'all appropriate inquiries' are not complete. Additional items should be collected, if available, and provided to AGE.

3.0. RECORDS REVIEW

The purpose of obtaining and reviewing subject property and site vicinity historical, physical setting, and regulatory records is to help identify *recognized environmental conditions (RECs)* in connection with the subject property.

3.1. HISTORICAL USE INFORMATION

The objective of consulting historical sources for a Phase I is to develop a history of previous uses of the property and surrounding area to help identify the likelihood of past uses having led to recognized environmental conditions with respect to the property. All obvious uses shall be identified from the present to the property's first obvious developed use, or back to 1940, whichever is earlier. Review of standard sources at less than five year intervals is not required.

3.1.1. Historical Use Information on Subject Property

Subject property history was researched by reviewing historical Sanborn Fire Insurance Maps (no coverage), aerial photographs, topographic maps, and telephone directory information.

The surrounding area of the subject property was considered a rural area of San Diego County in the late 1940's and early 1950's with limited roads and population. In the early 1960's, the area started to see development, which included residential tracts and retail business along the major roadways in the area. Carlton Oaks Golf Course, which forms a portion of the northern border of the western section of the subject property, was constructed in the early 1960's. The dirt trails in Mast Park in the eastern section of the subject property were constructed in the early 1980's. During these years of population expansion in the surrounding area, the alignment of the subject property remained absent of any development. No buildings, structures, or improved roadways have ever been present on the subject property. Representative historical records are provided within Appendix B.

3.1.1.1. Sanborn Fire Insurance Maps

Sanborn Fire Insurance maps were developed in the late 1800s and early 1900s for use as an assessment tool for fire insurance rates in urbanized areas, but are now utilized as a valuable source of historical and environmental risk information. Environmental Data Resources (EDR) owns the largest collection of Sanborn Fire Insurance Maps. AGE requested EDR to provide any Sanborn Fire Insurance Maps that might cover the subject property. No Sanborn Fire Insurance Map coverage was available for the subject site.

3.1.1.2. Aerial Photographs

AGE reviewed aerial photographs of the subject property, and surrounding area that were provided by EDR for the years 1949, 1953, 1964, 1966, 1970, 1979, 1985, 1989, 1996, 2002, 2005, 2009, 2010 and 2012. The following is a summary of our review of the aerial photographs:

Year(s)	Aerial Photo Summary
1949, 1953	Western Section: The subject property alignment was located immediately south of the San Diego River but crossed the river and terminated in the adjoining hills to the north on the west end of the section. The east end of this section was located near the confluence of the San Diego River and the Forester Creek. The surrounding area was vacant and rural. A road was located to the south of the property in, or near the position of the current Mission Gorge Road. Sporadic residences and ranches were located along and south of the road. Eastern Section: The subject property continued in the flood plain of the San Diego River. The surrounding area was rural and vacant land. Areas that appeared to be plowed or fallow fields were located south of the property as well. The area south of the road that was in the position of the

Year(s)	Aerial Photo Summary
	Mission Gorge Road shows sporadic residential development.
1964, 1966, 1970	Western Section: The western end of the subject property appeared to start at, or near a dirt road. The property then paralleled the southern side of a Carlton Oaks Golf Course, crossing the realigned San Diego River near the western end of the property. Other than the golf course, no development was present to the north. An increase in residential development had occurred south of the property, particularly south of Mission Gorge Road. Eastern Section: The subject property runs along the southern end of a golf course, heading north just to the east of Carlton Oaks Golf Course and west of a new residential development. The property continued north than turned east within the river flood plain. The property crossed the newly developed Carlton Hills Boulevard before terminating near some dirt roads. A significant increase in residential development had occurred to the south and north of the property. Carlton Oaks Drive had been constructed to the north and the hills had been developed residentially to the north of Carlton Oaks Drive. A water plant and reservoirs were also present to the north of Carlton Oaks Drive.
1979, 1985, 1989	Western Section: The western end of the subject property terminates behind a residential area, south of the intersection of Carlton Oaks Drive and the future West Hills Parkway (which had begun to be graded in 1997 and was completed by 1985). The property then remained the same, running through the flood plain immediately south of the golf course. The area around the path became heavily wooded by 1985. The hills to the north of the golf course were now developed residentially. An increase in development, both commercial and residential had occurred along, and south of Mission Gorge Road. Eastern Section: The subject property was unchanged, however, the eastern termination point of the property was located near what appeared to be a commercial development and residential development near the corner of Carlton Oaks Drive and Carlton Hills Boulevard in 1979. By 1985, this end of the property was located in an apparent dirt parking lot and was paved by 1989. In 1985, the property was more heavily wooded and a lake was present south of the property along the eastern portion of the property.

Year(s)	Aerial Photo Summary
1996	Western Section: The subject property was unchanged. The major change in the area was the construction of the 52 Freeway, which was present to the west and south of the vegetated area that the path was aligned through. The hills to the north of the golf course were now developed residentially. An increase in development, both commercial and residential had occurred along and south of Mission Gorge Road. Eastern Section: The subject property appeared to be unchanged. The 52 Freeway terminated into Mission Gorge Road. South of Mission Gorge Road, the new extension to Highway 52 had been graded.
2002, 2005, 2009, 2012	Western Section: The subject property was unchanged and the surrounding area appeared unchanged. Eastern Section: The subject property appeared to be unchanged. The 52 Freeway was now fully constructed and operational. The remaining surrounding area appeared unchanged.

A review of historical aerial photographs did not reveal any obvious environmental concerns related to the subject property.

3.1.1.3. Historical Topographic Maps

AGE reviewed historical topographic maps of the subject property and surrounding area that were supplied by EDR for the years 1903, 1930, 1942, 1947, 1953/1955, 1967, 1975, 1994/1996 and 2012. The following is a summary of our review of the topographic maps:

Year(s)	Historical Topographic Map Summary
1903, 1930, 1942, 1947	The subject property ran through the sparsely developed Mission Gorge area along the San Diego River. Few roads were in the area, however, Mission Gorge Road and several smaller roads were located south of Mission Road. A road also crossed the subject property as it ran north-south through Sycamore Canyon and terminated at Mission Gorge Road. Sporadic buildings were depicted along Mission Gorge Road and the roads south of Mission Gorge. The east end of the property was not mapped on the 1930, 1942 and 1947 maps.
1952/1955	The subject property was unchanged. The east end of the property was located near Fanita Ranch. More development was depicted along Mission

Year(s)	Historical Topographic Map Summary
	Gorge Road and to the south.
1967, 1975	The subject was now crossing and running around the southern end of Carlton Oaks Golf Course, which had been developed in the flood plain of the San Diego River. The east end of the property began southeast of the intersection of Carlton Hills Boulevard and Malberns Boulevard (Now Carlton Oaks Drive). The east end of the property ran south before following the southern edge of the golf course, and a new residential development was located immediately east of the south-trending portion of the property. Residential development had occurred to the north of Malberns Boulevard as well as the development of a sewage disposal plant and reservoirs (labeled as the Santee Recreational Lakes) in Sycamore Canyon. Additional development was depicted along, and south of Mission Gorge Road.
1994/1996, 2012	The subject property and the surrounding area remained unchanged with the exception of the development of West Hills Road along the west end of the property as well as the development of the 52 Freeway along to the west and south of the property.

A review of historical topographic maps did not reveal any items of environmental concern.

3.1.1.4. Street Directories

No portions of the subject property have any addresses attached. Therefore, AGE requested that EDR provide a review of city and street directories for nearby properties for the entire length of the subject property (approximately 2 miles) to determine the occupancy history for the years 1970, 1976, 1980, 1985, 1992, 1995, 1999, 2003, 2008 and 2013. AGE reviewed all listings provided by EDR to determine if any former listed occupants (which also may be current occupants at the address), were the types of businesses that likely utilized and, or disposed of hazardous materials as part of their operations (e.g. industrial manufacturers).

AGE concluded that approximately 70% of the listings on the city directory were for residential occupants. The remaining 30% were commercial and retail types of businesses providing services or products to the public. There were no listings for businesses that AGE believes were engaged in industrial, or manufacturing types of businesses that would likely utilize and or dispose of significant quantities of hazardous materials.

3.1.1.5. Building Department and Assessor's Office

No current or former buildings or structures are present on the subject property.

3.2. PHYSICAL SETTING SOURCES

Geology

Physiographically, the subject property is located in the Peninsular Range geologic province, which is characterized by northwest-trending topographic and structural features. The Peninsular Range province is bound by the Transverse Range province to the north and the Colorado Desert province to the west. The inland portion of the Peninsular Range province consists of numerous mountain ranges that are composed predominantly of igneous and metamorphic rocks of Mesozoic and Paleozoic age (CDM, 1954).

An irregular coastal plain and coast line is located on the western edge of the province while the subject property is located in the highlands to the west of the coast plain that is underlain by plutonic rocks of the western Peninsular Range batholith, as well as a sequence of Mesozoic fore-car and fore-arc basin volcanic and volcaniclastic deposits (USGS, 2008).

The bike path alignment is located within the San Diego River flood plain and has been mapped in Holocene and late Pleistocene alluvial flood-plain deposits. These deposits consist of poorly consolidated and poorly sorted sand permeable deposits that are sandy, silty or clay-bearing (USGS, 2008).

Hydrology

Based on a review of the California Regional Water Quality Control Board (CRWQCB) Water Quality Control Plan for the San Diego Region (2016), the bike path is located within the Santee Hydrologic Subarea of the Lower San Diego Hydrologic Area of the San Diego Hydrologic Unit (Basin No. 7.12). Groundwater within the Santee Hydrologic Subarea is designated as having existing beneficial use for municipal, industrial service/process and agricultural supplies.

AGE reviewed the State of California Geotracker database to determine the depth to groundwater at various sites near the bike path. Because the path surface undulates and crosses the San Diego River, the depth to groundwater varies greatly in the areas around the bike path. However, the depth to groundwater at a site located ¼ mile south of the bike path is 14 to 15 feet deep, flowing to the northwest and west. Because of the proximity of the property to the river, AGE estimates that the groundwater can occur anywhere from several feet to 15 feet deep with a westerly flow direction.

Topography	The bike path is located at elevations ranging from 300 feet above mean sea level (MSL), to 320 feet above MLS in an area of low topographic relief (flood plain topography). Regional slope of the flood plain is towards the west.
Surface Water Features	The subject property is located within the flood plain of the San Diego River which includes several ponds/lakes as well as Forester Creek.
Flood Zone	The EDR database report shows that the subject property is located within the 100-year Flood Zone. This data, available in select counties across the country, was obtained by EDR from the Federal Emergency Management Agency (FEMA), which has maps depicting FEMA-defined 100-year and 500-year flood zones.
Wetlands	The EDR database report indicates the bike path alignment is located in and adjacent to the areas within the National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR from the U.S. Fish and Wildlife Service.

3.3. STANDARD ENVIRONMENTAL RECORD SOURCES

A computer search of federal, state and regional regulatory agency databases was performed by Environmental Data Resources Inc. (EDR), a data retrieval company, to identify and locate properties of concern within a 1-mile radius of the subject property corridor that have been reported as sites known or suspected to contain underground storage tanks, or to have been the scene of hazardous materials spills. Additionally, sites permitted to manufacture, utilize, generate, store, treat or dispose of hazardous materials and/or hazardous wastes are identified and located. A list and description of databases investigated, in compliance with ASTM E1527-13 and USEPA AAI, is included in EDR Report provided in Appendix C.

3.3.1. Subject Property Database Search

There were no listings on the EDR Report for any sites directly on the subject property.

3.3.2. Site Vicinity Database Search

Sites with recognized environmental conditions directly adjacent and surrounding the subject property are typically of concern when they are located in an up-gradient direction from the property with respect to the ground water flow direction. Typically, groundwater would represent the migration medium for contaminants over significant distances. Sites located in equi-gradient or down-gradient directions from the subject route are less likely to impact the subject property.

Sites with permits to operate USTs, handle/store/transfer hazardous materials and generate hazardous waste are listed on the informational database reports; however, it does not necessarily imply that these sites have impacted the environment. Sites with permits within a ¼-mile search distance from the subject property are noted with emphasis on the immediately adjacent permitted sites.

3.3.2.1. High Risk Occurrences

Based on the EDR Report, AGE identified the following listings considered to be potentially high risk. High risk listings are sites where contamination is, or may have been present.

The following 'high risk' databases contained sites within the search radii:

DATABASE	< 1/8 mi	1/8 - 1/4 mi	1/4 - 1/2 mi	1/2 - 1 mi	Total
NPL	0	0	0	0	0
Proposed NPL	0	0	0	0	0
Delisted NPL	0	0	0	0	0
CERCLIS	0	0	0	--	0
RESPONSE	0	0	0	0	0
ENVIROSTOR	0	0	0	0	0
LUST	7	2	5	--	22
SLIC	1	0	3	--	9
VCP	0	0	0	--	0
BROWNFIELDS	0	0	0	--	0

All high risk occurrence sites are included and discussed in Table 1 of this report.

3.3.2.2. Close Proximity Listings

Based on the EDR Report of listed occurrences, AGE identify only one site of potential environmental concern located 300 feet from the subject property. Carlton Oaks Country Club, which borders the subject property, removed a 1,000 gallon underground fuel (gasoline) storage tank in 1991. The UST was located approximately 400 feet to the north of the property. Upon removal of the UST, the soil beneath the UST was determined to be impacted with gasoline. The DHS requested a further assessment to delineate the gasoline impacted soil. In 1992, the site was further assessed and subsequently 50 yards of gasoline impacted soil was removed from the site. Additionally, a ground water monitoring well was installed to determine if ground water had been impacted by the former UST. Ground water was not impacted on the site. Satisfied that all hydrocarbon contaminated soil from the leaking UST was removed and the groundwater was not impacted, on 02 November 1993 the DHS issued a "no further action" letter for the site.

Between 1996 and 2008, Carlton Oaks Country Club has been regularly inspected by the DHS. During that time various minor violations were noted on the inspection records (e.g. missing drum label, inadequate emergency response plan, improper record keeping, etc.). Selected copies of DEH records for the Carlton Oaks Country Club can be found in Appendix D.

All close proximity properties are referenced and discussed in Table 1. Representative site records are provided within Appendix C.

3.3.2.3. Orphan Site Listings

The orphan summary list consists of sites lacking sufficient information for EDR to map their locations. Thirty-six sites are listed as 'orphan'. None of the orphan sites appear to be adjacent to, or on the subject property. Based on distance from the subject property, AGE found no indication from the EDR report that the orphan sites are of environmental concern to the property. A listing of all orphan sites can be found in the EDR Report provided in Appendix C.

3.4. ADDITIONAL ENVIRONMENTAL AGENCY RECORD SOURCES

In addition to the EDR computer search of federal, state and regional regulatory agency databases, AGE contacted appropriate regulatory agencies to review records regarding the properties adjacent to the subject property and surrounding sites identified as having recognized environmental conditions that have the potential to impact the subject property based on ground water flow direction, distance from the subject property and the nature of the releases causing the environmental condition.

Additional agency searches include the following:

- The County of San Diego Department of Environmental Health (CSD-DEH) maintains records of industrial violations for this area and is the lead agency for the enforcement of the State Underground Storage Tank and Hazardous Waste Laws for the City of San Diego. The CSD-DEH maintains online computer databases. AGE reviewed the online database for all sites (businesses) near the subject property that AGE felt potentially could have an impact on the subject property. As necessary, further records were requested from the CSD-DEH for review.
- The San Diego Region Regional Water Quality Board (Regional Board) maintains records for sites for ground water issue and industrial releases in the San Diego region including the subject property. The Regional Board also maintains an online computer database, GeoTracker, that provides listings of closed and active sites related to unauthorized releases of hydrocarbons as well as solvents, metals, and other materials. For listed sites, online reports are

commonly available. AGE reviewed the GeoTracker database for information that may be available for the subject property and adjoining and surrounding sites.

- The California Department of Toxic Substances Control (DTSC) is the State of California agency responsible for oversight of hazardous waste regulations, cleanup of existing contamination, pollution prevention and reduction in hazardous waste and toxic materials and identification of potential new pollutants. The DTSC maintains the EnviroStor Data Management System (ENVIROSTOR) which allows for the search for information on investigation, cleanup, permitting and/or corrective actions that are planned, being conducted or have been completed under DTSC oversight. AGE reviewed the ENVIRO-STOR database for any information that may be available.
- The United States Environmental Protection Agency (USEPA) provides an online computer database, ENVIROFACTS, providing lists of sites listed on multiple USEPA databases. AGE reviewed the ENVIROFACTS database for any information that may be available.
- Division of Oil, Gas and Geothermal Resources (DOGGR) maintains a website, DOGGR Online Mapping (DOM) system, allowing for the search of oil and gas related information. AGE reviewed the DOM system for any oil and gas information in the vicinity of the property.

3.4.1. Additional Subject Property Record Sources

The subject property address (and APN Number if available), was searched on the following record sources:

Source	Summary
County of San Diego - Dept. of Environmental Health (CSD-DEH) Records	No records for the San Diego River Trail are available from CSD-DEH. Selected records of nearby sites obtained from the CSD-DEH can be found in Appendix D.
San Diego Regional Board Records & GeoTracker database	The San Diego River Trail is not listed on the GeoTracker database nor are there records with the Regional Board. Selected records obtained from GeoTracker of nearby sites can be found in Appendix D
DTSC & ENVIROSTOR database	The San Diego River Trail is not listed on the ENVIROSTOR database nor did the DTSC have a file on the property.
USEPA ENVIROFACTS	The San Diego River Trail not listed on the ENVIROFACTS database.

Source	Summary
DOGGR DOM System	According to the DOGGR, there are no oil or gas wells on, or in the vicinity of the subject property.

3.5. PROVIDED SUBJECT PROPERTY RECORDS

No previous records regarding the subject property were provided to AGE for this assessment.

3.6. VAPOR ENCROACHMENT

The encroachment of volatile organic compound (VOC) vapors into soil pore space occurs when organic chemicals migrate from contaminated groundwater, or soil into the airspace between soil particles. Some typical organics involved are petroleum based or chlorinated solvents (e.g. BTEX and dry cleaning chemicals). They may have leaked into the groundwater and/or soil from underground storage tanks, or buried waste or from disposal in septic systems.

In compliance with ASTM Standard E2600-10 (Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions), AGE evaluated the potential for a Vapor Encroachment Condition (VEC) for the subject property. Based on a VEC screening, it was determined that ‘a VEC is unlikely to exist’ along any portions of the subject property. A copy of the AGE-generated Tier 1 VEC screening form is provided within Appendix E.

4.0. SITE RECONNAISSANCE

A site reconnaissance of the subject property and adjoining properties was conducted by Mr. Robert Loeffler and Mr. Jim Bunck on 10 November 2016. At the time of the site visit, the weather conditions were mild with partly cloudy to sunny skies. Primary features of the property are shown in a site plan provided as Figure 2. Photographs of selected features of the subject site are included in Appendix A.

4.1. METHODOLOGY AND LIMITING CONDITIONS

All portions of the subject property were fully accessible for inspection. No limiting conditions were noted.

4.2. GENERAL SITE SETTING

The following is a description of the primary features of the subject property observed at the time of the site visit:

- The subject property is an approximately 2 mile long corridor of land bound by West Hills Parkway on the west and Mast Park vehicle parking lot forming the eastern boundary of the property. Most of the proposed subject property path in the western portion will be constructed on, or adjacent to an existing berm trail which extends along the southern boundary of the Carlton Hills Golf Course. From the golf course the subject property will continue east along existing dirt trails in Mast Park to its termination point at the Mast Park vehicle parking area located directly east of Carlton Hills Boulevard.

  NOTE: For purposes of discussion of the subject property route in this section, AGE has divided the project into two segments. The western segment starting at West Hills Parkway and, extending east approximately 1 mile (halfway point), and the eastern segment extending from the halfway point to its termination at Mast Park.

West Segment (Figure 2)

- The west segment of the subject property starts on the east side of West Hills Parkway. Besides the current proposed starting point on West Hill Parkway (photograph 1), there are two optional starting points of the property that are under consideration. The two optional starting points are both located on the east side of West Hills Parkway (photograph 1 and 4). A buried 24" inch high pressure natural gas line extends along the east site of West Hills Parkway beneath the subject property starting points (photograph 6). While the gas line does not represent an environmental concern, it represents a potential construction concern if extensive excavation in this area will be necessary.

- From the proposed and optional starting points of the subject property on West Hills Parkway, the property will head east down an embankment into an area of land extending between West Hills Parkway and the Carlton Oaks golf course (photographs 5, 7, and 8) that is heavily vegetated with grass and shrubs. Currently a makeshift foot trail extends through this area as it heads east. This area is lightly littered with trash (paper cups, bags, bottle, etc.). There was no evidence of any dumping of hazardous materials in this area of the subject property.

- As the subject property heads in a southeasterly direction it will transverse a small creek (photograph 9), originating from the golf course and referred to as the San Diego River. At the time of our inspection there was a small amount of

standing water in this creek (6" to 8"). There was no indication of any discolorations, odors or sheen in this water. From the small creek, the subject property will be constructed along a narrow dirt pathway bordering the golf course (photograph 10). The subject property will continue east following the route of the existing dirt path (photograph 11 and 12).

- Approximately 0.92 miles from the western starting point at West Hills Parkway a section of the property will extend out to the north approximately 200 feet from the subject property (photograph 13 and 14). This is an area of the golf course used to dump golf course debris (grass clipping, shrub clippings, etc.). There was no evidence of hazardous materials, stained soil or illegal dumping of hazardous materials in this area.

East Segment (Figure 3)

- Starting just east of the area discussed in the last bullet point for the west segment above, the eastern portion of the subject property continues east (Photograph 15). In this segment of the property, the San Diego River parallels the property to the south (Photograph 16). At the time of our inspection there was a very small flow of water in this creek. The creek was absent of any indications of discolorations, odors or floating sheens.

- In the eastern section of the subject property, as the property starts to curve in a northeasterly direction, the Carlton Oaks Golf Course maintenance building is located approximately 300 feet from the property. An above ground fuel tank is located on the south side of this building (Photograph 17). The observation of this tank was made from the project area using binoculars. The tank appeared in good condition with no apparent leaks or staining around the base of the tank. AGE believes the location of this tank was the former location of an underground fuel storage tank (UST) which was removed in 1991 from the golf course. The former UST leaked gasoline into the soil. Ground water was not impacted. The contaminated soil was removed and the regulatory agency granted closure to the site in 1992. (See Section 3.4.1. of this report for details of this former UST).

- At approximately 1.50 miles from the starting point at West Hills Parkway the subject property joins up with an existing dirt trail in Mast Park (Photograph 19 and 20). From this point the property will follow a dirt trail in Mast Park in a northerly direction for approximately 0.15 miles at which point the property will turn east onto another dirt trail (Photograph 21 and 22). As the property heads east it will run parallel with Mast Park Lake (Photograph 23).

- Continuing east, the property will turn right (Photographs 25 and 26) where it crosses a small wooden bridge extending over a small drainage channel and continues under Carlton Hills Boulevard (Photograph 27). The subject property

will terminate at the vehicle parking area located east of Carlton Hills Boulevard (Photograph 30). AGE found no evidence of any former structures (e.g. concrete or wood foundations) along or near the subject property. AGE also did not observe any containers containing hazardous materials, stained soil or evidence of illegal dumping of hazardous materials on or near the project area.

4.3. EXTERIOR OBSERVATIONS

The following was observed at the time of the site reconnaissance:

YES	NO	CONDITION OBSERVED ON/NEAR SUBJECT PROPERTY
	x	**Pits, ponds or lagoons with respect to waste treatment or disposal**
	x	**Stained soil or pavement, patched pavement**
	x	**Stressed vegetation (from causes other than insufficient water)**
	x	**Fill dirt from unknown source, or contaminated source**
	x	**Solid waste (mounds or depressions suggesting waste disposal)**
	x	**Waste water / storm water discharged into a drain, ditch or stream**
	x	**Wells (abandoned, irrigation, domestic, monitoring or oil and gas)**
	x	**Dry wells**
	x	**Septic systems or cesspools**
	x	**Movement of hazardous materials to adjacent properties**
	x	**Hazardous substances and/or petroleum products**
x		**Above-ground storage tanks (ASTs) for storage of petroleum products and/or hazardous substances.** One 2,000 gallon above ground fuel tank is located approximately 300 feet north and west from the subject property. The tank is located behind (south) of the maintenance buildings for the Carlton Oaks Country Club. There was no indication of any stains or leaks from the tank.
	x	**Underground storage tanks (USTs) for storage of petroleum products and/or hazardous substances**
	x	**Strong, pungent or noxious odors**
	x	**Pools of liquid (other than water)**
	x	**55-gallon drum or large sack storage**

YES	NO	CONDITION OBSERVED ON/NEAR SUBJECT PROPERTY
	x	**Unidentified substance containers**
	x	**Oil-water separator/clarifier**
	x	**Electrical or hydraulic equipment possibly containing PCBs**
x		**Miscellaneous** A 24" underground high pressure natural gas line extends along West Hills Parkway where the subject property will start. While the gas line does not represent an environmental concern, it does represent a construction concern in development of the subject property in this area.

5.0 INTERVIEWS

Interviews performed during the course of this Phase I are described below.

Interviewee	Interview Summary
Property Owner	A portion of the western segment of the subject property is owned by the City of San Diego. The eastern segment is owned by the City of Santee. No one was available to be interviewed during the course of this Phase I.
Local Government Officials	Mr. John O'Donnell, Senior Planner for the City of Santee, was interviewed in person. Mr. O'Donnell indicated he is not aware of any environmental conditions or issues associated with the area of the subject property, which is the focus of this assessment.
Others	No additional individuals were interviewed during the course of this Phase I.

6.0. ADDITIONAL SERVICES

Additional environmental considerations beyond the scope of the standard ASTM practice are discussed below.

6.1. MOLD

Molds are part of the natural environment. Outdoors, molds play a part in nature by breaking down dead organic matter such as fallen leaves and dead trees, but indoors, mold growth should be avoided. Molds reproduce by means of tiny spores; the spores are invisible to the naked eye and float through outdoor and indoor air. Mold may begin growing indoors when mold spores land on surfaces that are wet. There are many types of mold, and none of them will grow without water or moisture.

Molds are usually not a problem indoors, unless mold spores land on a wet or damp spot and begin growing. Molds have the potential to cause health problems. Molds produce allergens (substances that can cause allergic reactions), irritants, and in some cases, potentially toxic substances (mycotoxins).

No buildings are present on the subject property.

6.2. ASBESTOS CONTAINING BUILDING MATERIALS

Asbestos is a mineral fiber that has been used commonly in a variety of building construction materials for insulation and as a fire-retardant. Because of its fiber strength and heat resistant properties, asbestos has been used for a wide range of manufactured goods, mostly in building materials (roofing shingles, ceiling and floor tiles, paper products, and asbestos cement products), friction products (automobile clutch, brake, and transmission parts), heat-resistant fabrics, packaging, gaskets, and coatings.

Prior to the late 1970s, building products and insulation materials commonly contained asbestos. In 1989, the USEPA banned all new uses of asbestos; however, uses developed before 1989 are still allowed. When asbestos-containing materials are damaged or disturbed by repair, remodeling or demolition activities, microscopic fibers become airborne and can be inhaled into the lungs, where they can cause significant health problems.

No buildings or other structures present on the subject property

6.3. LEAD-BASED PAINT

Lead is a toxic metal that was used for many years in products found in and around our homes. Lead-based paint (LBP) was used extensively in buildings constructed before 1950. In 1978, LBP was banned by the federal government. Lead may cause a range of health defects, from behavioral problems and learning disabilities, to seizures and death.

There are yellow painted stripes extending along the center portion of West Hills Parkway located on the western border of the project area. While the project area does not extend into the center portion of West Hills Parkway where the yellow stripping is located, as a precaution AGE checked with the city of Santee. Mr.Minjie Mei, Principal Traffic Engineer in the Santee Traffic Engineering Department indicated the yellow traffic paint on West Hills Parkway does not contain any lead-based paint. Based upon the information provided by the city, AGE does not recommend any lead-based paint survey for this roadway at this time.

6.4. WETLANDS

As reported in Section 3.2., according to the EDR Report (Appendix C) the subject property starting at West Hills Parkway and extending to approximately 500 feet east of Carlton Hills Boulevard borders a National Wetland Inventory (NWI) area along the southern boundary. Immediately west of the Carlton Boulevard, the trail traverses a section of the NWI. This data, available in select counties across the country, was obtained by EDR from the U.S. Fish and Wildlife Service. A review of the National Wetlands Inventory – Wetlands Mapper V2 confirms that the predominant Wetland type is “Freshwater Forested/Shrub Wetland”. A portion of the trail located west of Carlton Hills Boulevard also traverses a small section of Wetland type known as “Freshwater Pond”.

In addition, AGE reviewed the US Army Core of Engineers (USACE) Recognized Wetlands. The USACE has mapped Recognized Wetlands immediately south of the trail. The USACE has designated the predominant Wetland type as “Southern Riparian Forest” with a small area west of Carlton Hills Boulevard bordering “Freshwater Marsh”.

7.0. EVALUATION

Any deviations from the ASTM Standard Practice 1527E-13 and USEPA AAI are presented below, along with the findings, conclusions, and opinions identified during the course of this Phase I.

7.1. DATA GAPS AND LIMITATIONS

A data gap occurs when a lack of, or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice. This includes, but is not limited to site reconnaissance, and interviews. The following data gaps and/or limitations were identified during the course of this Phase I, which may deviate from the ASTM standard practice:

- The largest data gap in research was 27 years, between 1903 and 1930, with the earliest researched information being a Topographic Map dated 1903. Additional data gaps greater than 5 years occur between the years 1930-1942, 1953-1964, 1979-1985, and 1996-2002. AGE does not believe any gaps in the data reviewed have affected the ability to identify recognized environmental concerns.

7.2. FINDINGS

Based on the standards set by ASTM Practice E1527-13, the following findings are differentiated below as *de minimis* conditions unlikely to be subject to government enforcement, HRECs, CRECs and RECs, as defined in Section 1.1. of this report.

7.2.1. *De Minimis* Conditions

This assessment revealed no evidence of *de minimis* conditions in connection with the subject property.

7.2.2. Historical Recognized Environmental Conditions

This assessment has revealed no evidence of HRECs in connection with the subject property.

7.2.3. Controlled Recognized Environmental Conditions

This assessment has revealed no evidence of CRECs in connection with the subject property.

7.2.4. Recognized Environmental Conditions

This assessment has revealed no evidence of RECs in connection with the subject property.

7.3. CONCLUSIONS AND OPINION

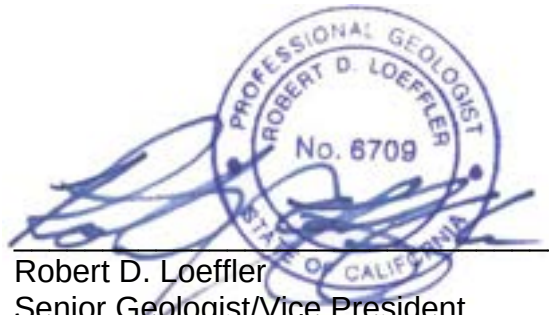
Advanced GeoEnvironmental, Inc. has performed a *Phase I Environmental Site Assessment* in conformance with the scope and limitations of ASTM Practice E1527-13, US-EPA AAI for the San Diego River Trail – Carlton Oaks Segment to be located along an approximately 2-mile stretch of property extending from West Hills Boulevard, which is located in the City of San Diego, to Mast Park vehicle parking area east of Carlton Hills Boulevard in the City of Santee California. Any exceptions to, or deletions from, this practice are described in Section 7.1. of this report or presented as additional services in Section 6.0. This assessment has revealed no *de minimis* conditions, RECs, CRECs, and HRECs, in connection with the subject property.

AGE does not recommend further environmental investigation of the subject property at this time.

7.4. SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental professional as defined in §312.10 of 40 CFR § 312 and We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Jim Bunck
Environmental Assessor



Robert D. Loeffler
Senior Geologist/Vice President
California Professional Geologist No. 6709
Registered Environmental Property Assessor No. 136161

7.5. QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Qualifications of the environmental professionals involved in the preparation of this Phase I are included in Appendix F.

7.6. REFERENCES

The following documents, maps or other publications may have been utilized during the preparation of this Phase I:

- American Society of Testing and Materials, E1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, 2013.
- California Department of Water Resources (DWR), 2003, Groundwater Basins in California, Version 3.0.
- California Division of Mines, 1954, *Geology of Southern California*, Bulletin 170.
- Environmental Data Resources Inc. (EDR)-prepared: The EDR Atlas Report, The EDR-City Directory Abstract, Certified Sanborn® Map Report, EDR Historical Topographic Map Report, EDR Historical Aerial Photograph Report.
- United States Geological Survey (USGS), 2008, *Geologic Map of the San Diego 30'x60' Quadrangle, California.*

The following websites may have been accessed to obtain information during the preparation of this Phase I:

- California State Water Resource Control Board's GeoTracker website: http://geotracker.swrcb.ca.gov/
- California Department of Water Resources website: http://www.cd.water.ca.gov/
- DTSC's ENVIROSTOR website: www.envirostor.dtsc.ca.gov/public
- DTSC's HWTS website: http://www.hwts.dtsc.ca.gov/
- FEMA's website: www.fema.gov/
- ParcelQuest by CD-DATA online download - www.parcelquest.com
- USEPA's Envirofacts website: www.epa.gov/enviro
- USEPA's radon information website: www.epa.gov/radon/zonemap.html#mapcolors
- USEPA's lead information website: www.epa.gov/lead/
- USEPA's asbestos information website: www.epa.gov/asbestos/
- USEPA's mold information website: www.epa.gov/mold/moldguide.html
- Division of Oil, Gas and Geothermal Resources (DOGGR) Online Mapping (DOM) System: http://maps.conservation.ca.gov/doms/doms-app.html

TABLE 1
San Diego River Trail – Carlton Oaks Segment
Environmental Conditions of Nearby and Adjoining Sites

Site # & Area	EDR Map ID #	Tenant/Address /Parcel #	Past Tenants (City Directory)	Distance and Location from Site	EDR Database	Regulatory Records	Site Observations	Enviro-Concern	Explanation
1 ES	1	Barker MeCriight 9312 N. Carlton Hills Bl. Santee 3802021100	Santee Fire Station # 5 Repair	750 ft. NE	HIST CORTESE, HAZNET, HIST UST, SWEEPS UST, LUST, San Diego Co. SAM. Listings for the former diesel UST's on the site that were removed in 1990 and subsequently received regulatory closure in 1995.	DEH HMBP inactive. The site is listed as having a former diesel UST. The tank was removed in 1990 and closed in 1995 by the DHS (Case No. H20820-001).	Fire facility no longer at this location. Appears to be used as a private security business.	No	Based upon the visual inspection and a review available EDR, GeoTracker and DEH on-line records, distance from the proposed bike path, and closure status, this site does not represent an environmental concern to the proposed bike path.
2 WS	2	Grit Hills Disposal Santee Hwy 52/Mast Bl. Santee 3660813200 3660814800	Unknown	1500 ft. NW	SLIC, SWEEPS UST, EMI, SMUDS/SWAT. These listing are a result of the landfill receiving hydrocarbon and meta containing wastes.	DEH HMBP inactive. In 2009 the Regional Water Board felt the site does not pose a health or environmental concern and issued regulatory closure in 2009 (Case No. SL209224197)	No environmental concerns noted.	No	Based on the distance from the proposed bike path, EDR, and GeoTracker on-line records, and closure status, this site does not represent an environmental concern to the proposed bike path.
3 WS	3	Gas Recovery Systems LLC 8514 Mast Bl Santee 3660814800	Landfill identified in @ #2 above	1500 ft. NW	NPDES, WDS, SWRY, AST, EMI,	SAN DIEGO CO HMMD active for gas extraction in the former landfill. (Case #: 203112)	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR and DEH on-line records and its distance from the proposed bike path, this site does not represent an environmental concern to the proposed bike path.
4 ES	4	7-Elevem Food Store #13661 9251 Carlton Hills BL, Santee 384500100	Unknown	560 ft. NE	San Diego Co. HMMD SAM, HIST CORTESE, LUST, HIST UST, SWEEPS UST. Listings from a former UST removed in 1993 which impacted soil only and subsequently received regulatory closure in 1997.	DEH HMBP active. Soil only was impacted. Site received DEH regulatory closure in 1997 (Case #: H20811-001)	No environmental concerns noted	No	Based our visual inspection and a review of EDR and DEH on-line records, distance from the proposed bike path, closure status, this site does not represent an environmental concern to the proposed bike path.
5 ES	Not List on Map	Abandoned Texaco Station 9292 Carlton Hills Bl. Santee 3830702200	Unknown	560 ft. NE	HIST CORTESE, LUST, ENF. Listing from a former gas station that was abandoned. USTs removed and subsequent closure in 1999.	Former Water Board site on file. Not currently active. Site received regulatory closure for the USTs in 1999 by the Regional Water Board (Case No. 9UT557)	Business no longer at site. Now occupied by small strip center. No environmental concerns noted	No	Based upon the visual inspection and a review available EDR and GeoTracker on-line records and no reported release, this site does not represent an environmental concern to the proposed bike path
6 ES	5	Seville Cleaners 9225 Carlton Hills Bl. Santee 383500400	Continental Cleaners	448 ft. N	DRYCLEANERS Listing from current dry cleaners operation on site. No listing for any unauthorized spills or releases.	DEH HMBP active.	No environmental concerns noted	No	Based our visual inspection of this business and a review of EDR records indicating no releases, this site does not represent an environmental concern to the proposed bike path.

TABLE 1
San Diego River Trail – Carlton Oaks Segment
Environmental Conditions of Nearby and Adjoining Sites

Site # & Area	EDR Map ID #	Tenant/Address /Parcel #	Past Tenants (City Directory)	Distance and Location from Site	EDR Database	Regulatory Records	Site Observations	Enviro-Concern	Explanation
7 ES	6	Padre Dam Mun Water District 9120 Carlton Oaks Bl. Santee 3830706400	Unknown	600 ft. N	San Diego Co. HMMD and SAM, HIST UST, SWEEPS UST, HIST CORTESE, LUST, SLIC, All of these listing comes from a former UST that was removed from the site in 1994 and closed in 1995. The site still is undergoing assessments for potential contaminated soils in their maintenance yard under DHS oversight.	The former UST received DHS closure in 1995 (Case No. H03857-001). Current ongoing assessments are being performed for proposed improvements in the maintenance yard and under DHS oversight (Case # DEH2014-SAM-000238).	Limited visual access to make a determination.	No	Based upon a review available EDR, GeoTracker, and DEH on-line records and ongoing oversight by DEH and its distance from the proposed bike path, this site does not represent an environmental concern to the proposed bike path.
8 SE	7	Kelly Berkel, Carlton Hill Property 0 Carlton Hills Bl. Santee 3830710400	Unknown	700 ft. S	SLIC. This listing comes from an investigation of potential gasoline in the ground water from a nearby gas station discussed below. Site was closed in 2014	DEH HMBP inactive as of 2014 when DEH issued regulatory closure in 2014 (Case #:SAM-000226)	Site is vacant land. No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker and DEH on-line records and its distance from the proposed bike path, and closure status, this site does not represent an environmental concern to the proposed bike path.
9 SE	8	Service Station #114 9009 Carlton Hills Bl. Santee 3831550100	Arco Gas Station	800 ft. S	LUST, CHMIRS,RCRA-SQG, FINDS, ECHO, HIST UST,SWEEPS UST, HIST CORTESE, LUST, SLIC, ENF. Listing from former leaking USTs discovered in 1984 that impacted soil and ground water. Subsequent assessments and remediation lead to closure in 2014	DEH HMBP inactive. The site is listed under several gas station ownerships which assessed and remediated impacted soil and ground water. Subsequent and long term remediation lead to DEH closure in 2014. (Case No. H20810-001).	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records distance from the proposed bike path, and closure status, this site does not represent an environmental concern to the proposed bike path.
10 ES	9	Carlton Oaks Golf Course 9200 Inwood Dr. Santee 3830710600	Vacant Land	400 ft. N	HIST CORTESE, LUST, SWEEPS UST, San Diego Co. HMMD and SAM. Listing from former UST removed in 1992 which impacted soil only. Site closed in 1992.	HMBP is on file and current for this site. Minor violation of storage/labeling/containers of haz materials. Soil only was impacted from former gasoline UST. Subsequent assessment lead to regulatory closure in 1992 by the DEH (Case #:H20821-001)	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records its distance from the proposed bike path, and closure status, this site does not represent an environmental concern to the proposed bike path.

TABLE 1
San Diego River Trail – Carlton Oaks Segment
Environmental Conditions of Nearby and Adjoining Sites

Site # & Area	EDR Map ID #	Tenant/Address /Parcel #	Past Tenants (City Directory)	Distance and Location from Site	EDR Database	Regulatory Records	Site Observations	Enviro-Concern	Explanation
10 ES	10	Santee Chevron Station 9312 Mission Gorge Rd. Santee 3831560500	Kalasho Inc	1700 ft. S	LUST, San Diego Co. HMMD and SAM. The LUST listing is from a former UST removed in 1998 that impacted the soil only. Site was closed in 1999.	DEH HMBP inactive as of 1999 DEH closure in 1999. (Case #: H12198-001).	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line record, closure status, and its distance from the proposed bike path, this site does not represent an environmental concern to the proposed bike path.
11 ES	10	Town Center Services, Mission Gorge Retail 9305/9261/9263 Mission Gorge Rd. Santee 3831246700	Former Town Center Service Station, James McDowell, and E-Z Serve	1800 ft. S	HIST CORTESE, SLIC, CHMIRS, LUST, San Diego Co. HMMD and SAM EMI. The listing for former gas station USTs which was closed in 1992. When CVS Pharmacy started constructed in 2001 a 500 gallon UST oil tank found and soil was impacted. Site was closed again in 2016.	DEH HMBP inactive as of 1992 as the gas station business is no longer at this location. Former UST received DEH closure (Case No. H03919-002). Now occupied by CVS. During CVS construction 500 gallon UST oil tank found. DEH closure this tank in 2016 (Case #: H3919-002).	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records and its distance from the proposed bike path, and closure status, this site does not represent an environmental concern to the proposed bike path.
12 ES	11	M.L. Chilcote 9525 Mission Gorge Rd. Santee	Unknown	2200 ft. SE	HIST CORTESE, LUST, SWEEPS UST, San Diego Co. HMMD and SAM. Listing for former diesel UST. Closed in 1990	DEH HMBP inactive as the business is no longer at this location. Now occupied by retail businesses. DEH closure (Case No. H04747-001).	Business no longer at site. Now occupied by retail center.	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records and closure status, this site does not represent an environmental concern to the proposed bike path.
13 ES	12	John & Zona Ainsworth 9025, 9010 Mission Gorge Rd. Santee 3831214900	Unknown	700 ft. S	SWEEPS UST, San Diego Co. HMMD Listing from current UST on site. No reported release.	DEH HMBP active #: 121431	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records, its distance from the proposed bike path, and no reported release, this site does not represent an environmental concern to the proposed bike path.
14 ES	13	Qwik Korner 9035 Mission Gorge Rd Santee 3831214900	Pacific Diamond Gas and Oil, and Ron's Self-Serve	600 ft. S	LUST, HIST UST, SWEEPS UST, HIST CORTESE, SLIC San Diego Co. HMMD and SAM. Listing from former gas stations that removed UST's and received closure in 1987. Current occupant,	DEH HMBP active under DHS (Case #: H05754-002) and RWQCB #: 9UT3741) for current investigation. Former DEH closure was issued in 2014 ((Case No. Ho5754-001). Site currently under	No environmental concerns noted	no	Based upon the visual inspection and a review available EDR, GeoTracker and DEH on-line records and its distance from the proposed bike path, this site does not represent an environmental concern to the proposed bike path.

TABLE 1
San Diego River Trail – Carlton Oaks Segment
Environmental Conditions of Nearby and Adjoining Sites

Site # & Area	EDR Map ID #	Tenant/Address /Parcel #	Past Tenants (City Directory)	Distance and Location from Site	EDR Database	Regulatory Records	Site Observations	Enviro-Concern	Explanation
					Qwik Korner under assessment for potential soil and ground water impact.	assessment.			
14 ES	13	7-11 Food Store 9111 Mission Gorge Rd. Santee 3831241000	Unknown	400 ft. E	LUST, HIST CORTESE, UST, HIST UST, SAN DIEGO CO. SAM, HIST CORTESE, SLIC, The listing are for releases of gasoline into the soil and ground water. The site received regulatory closure in 2010	DEH HMBP active. In 1989 product line punctured and between 2003 and 2007 site remediated. DEH Closure in 1999 (Case No. H20828-001) and the RWQCB (Case No. 9UT1429.	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker and DEH on-line records and closure status, this site does not represent an environmental concern to the proposed bike path.
15 WS	14	Mission Gorge Carwash 7751 Mission Gorge Rd. Santee	Unknown	1800 ft. SW	LUST, San Diego Co. SAM. In 2006 two 6K USTs removed. Soil impacted and removed. Site closed in 2013	DEH HMBP is inactive for the site. Site received DEH closure in 2013 for USTs (Case No. H124739-001)	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker and DEH on-line records and closure status, this site does not represent an environmental concern to the proposed bike path.
16 WS	15	Texaco 8111 Mission Gorge Rd. Santee 3832608800	Unknown	1700 ft. SW	HIST CORTESE, LUST, EMI, SWEEPS UST, SLIC,SAN DIEGO CO. SAM and HMMD. These listing are from UST removed in 1994. Impacted soil and ground water removed. Regulatory closure in 2012.	DEH HMBP is inactive as Texaco no longer at site. In 1994 after four 10K USTs removed soil and ground water discovered impacted. Subsequent assessment and remediation over an extended period of years lead to DEH regulatory closure in 2012. (Case No. H20827-002).	No environmental concerns noted	No	Based upon the visual inspection and a review available EDR, GeoTracker, and DEH on-line records, closure status, this site does not represent an environmental concern to the proposed bike path.

WS = Western Section (Figure 2)
ES = Eastern Section (Figure 3)

Figures 1 Through 3



Site Map Courtesy DeLorme Topo

Project Area Map

San Diego River Trail
Carlton Oaks Segment
Santee, San Diego, California

Figure 1

AGE Project No.
16-3500

December 9, 2016

Advanced GeoEnvironmental Inc.
3335 E. Miraloma Avenue
Suite 142
Anaheim, CA 92806



Site Map Courtesy Google Earth 3/22/2016

Advanced GeoEnvironmental Inc.

3335 E. Miraloma Avenue
Suite 142
Anaheim, CA 92806

Site Plan
Western Section

San Diego River Trail
Carlton Oaks Segment
Santee, San Diego, California

Figure 2

AGE Project No.
16-3500

December 9, 2016



Site Map Courtesy Google Earth 3/22/2016

Advanced GeoEnvironmental Inc.

3335 E. Miraloma Avenue
Suite 142
Anaheim, CA 92806

Site Plan
Eastern Section

San Diego River Trail
Carlton Oaks Segment
Santee, San Diego, California

Figure 3

AGE Project No.
16-3500

December 9, 2016

Appendix A

Photographs of Subject Property

Site Photo Reference Guide

Western Section - Photographs 1 thru 14

The location and direction where each photograph was taken along the project area path can be referenced in the aerials photograph below. Photographs 1 through 14 on the proceeding pages can be referenced on this page. Photographs 15 through 30 can be referenced on the aerial photo page in the “Eastern Section” of the bikeway path following photograph 14.

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Photograph 1: Viewing east at the west entrance of the bikeway route located on West Hills Pkwy.



Photograph 2: Viewing north at the west entrance and start to the bikeway. Option 1 entrance of the bikeway will start here. Option 2 entrance of the bikeway will start here next to the residential area. **Note**, arrows on picture are showing approximate trail locations and start points.

SITE PHOTOS

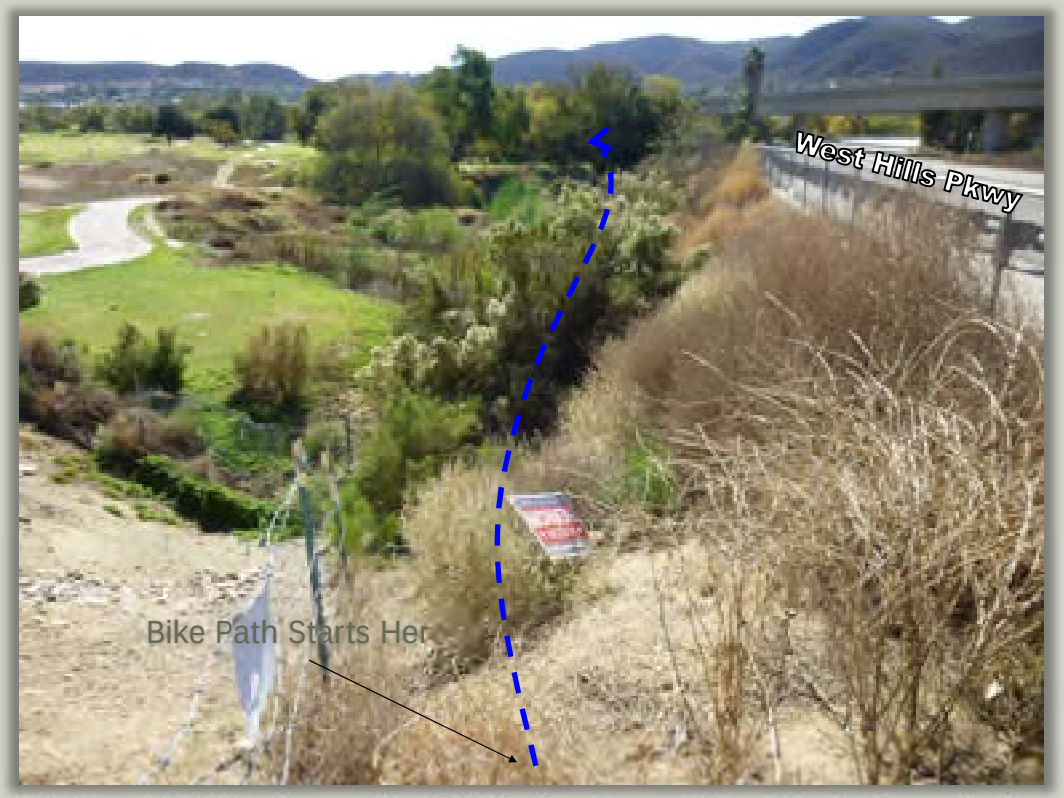


Photograph 3: Viewing south at the west entrance of the bikeway as identified on photographs 1 and 2 of the proceeding page.



Photograph 4: Viewing north at Option 2 entrance of the bikeway as identified on photograph 2 of the proceeding page. This optional starting location is located approximately 100 feet south of Carlton Oaks Drive and adjacent the home pictured above.

SITE PHOTOS



Photograph 5: Viewing south at Option 2 entrance pictured in photographs 2 and 4 in the proceeding pages.



Photograph 6: Viewing north at sign indicating a 24" high pressure gas line is present underground. This line extends along eastern shoulder of West Hills Pkwy near the starting point of the Option 2 bikeway entrance. Unless extensive excavation will take place, it is unlikely this gas line will be disturbed.

SITE PHOTOS



Photograph 7: Viewing west slightly below the west entrance of the bikeway path from West Hills Pkwy. 52 Freeway overpass pictured in background.



Photograph 8: Viewing west just below West Hills Pkwy at the proposed bikeway path as it extends in a southeasterly direction. All routing options as identified in photographs 2 and 4 of the proceeding pages will follow this path. Golf course green pictured on right.

SITE PHOTOS



Photograph 9: Viewing west at bikeway route that will cross a section of the San Diego River which extends from the adjacent golf course.



Photograph 10: Viewing west at bikeway path located in the western portion of the project area. The route of the bikeway follows a narrow strip of land that separates the golf course and San Diego River in the western portion of the project area.

SITE PHOTOS



Photograph 11: Viewing west where the bikeway path parallels a cart path extending along the southern border of the golf course.



Photograph 12: Viewing west along a dirt path proposed for the bikeway route. This portion of the path parallels a fairway portion of the golf course pictured on right.

SITE PHOTOS



Photograph 13: Viewing north from the bikeway trail at an area of the golf course in which the project boundaries will extend approximately 250 feet from the proposed bikeway trail.



Photograph 14: Viewing west at an area pictured in photograph 13 above where the boundaries of the project will extend. Miscellaneous golf course debris is dumped (lawn clippings, tree branches, etc.) in this area. There was no visual indication of any hazardous debris dumping in this area.

SITE PHOTOS

Site Photo Reference Guide

Eastern Section - Photographs 15 thru 30



San Diego River Trail – Carlton Oaks Segment—Santee, San Diego California 92071



Photograph 15: Viewing west along a portion of the proposed bikeway fronting the golf course pictured on the right.



Photograph 16: Viewing south from the bikeway path at the Forester Creek which borders sections of the bikeway route along the western portion of the project area.

SITE PHOTOS



Photograph 17: Viewing north from bikeway trail at an above ground fuel storage tank located next to the golf course maintenance building. The tank is located approximately 400 feet north of the bikeway trail.



Photograph 18: Viewing southwest at a section of the bikeway trail extending along the eastern portion of the golf course just south of the end of the Mast Park trail pictured in photograph 19.

SITE PHOTOS



Photograph 19: Viewing southwest at the end of the existing Mast Park dirt trail and the location of where the bikeway will continue.



Photograph 20: Viewing southwest at sign indicating the "future home of the San Diego River Trail" bikeway path.

SITE PHOTOS



Photograph 21: Viewing west where the bikeway path follows the existing dirt trail in the west portion of Mast Park.



Photograph 22: Viewing east from photograph 21 above as the dirt trail in Mast Park extends east.

SITE PHOTOS



Photograph 23: Viewing south at Mast Park Lake which extends along a section of the proposed bikeway in the eastern portion of Mast Park.



Photograph 24: Viewing east as the dirt trail in Mast Park from photograph 21 above.

SITE PHOTOS



Photograph 25: Viewing west where the bikeway trail makes a right turn in the eastern portion of Mast Park to head east.



Photograph 26: Viewing west a small wood access bridge the bikeway path will follow in the eastern portion of Mast Park.

SITE PHOTOS



Photograph 27: Viewing west where the bikeway path will extend under Carlton Hills Boulevard.



Photograph 28: Viewing west from the continuation of photograph 27 above as the bikeway path swings slightly north of a vehicle access way pictured on the left.

SITE PHOTOS



Photograph 29: Viewing south as the bikeway path turns north to its termination point of the Mast Park vehicle parking lot pictured below.



Photograph 30: Viewing west at vehicle parking lot located at the east end of the bikeway path project area. Entrance to this parking area is from Carlton Hills Boulevard.

SITE PHOTOS

Appendix B

Historical Documents—Historical Aerials, Topographic Maps, City Directory, Sanborn Maps

San Diego River Trail - Carlton Oaks Segment

Carlton Oaks Segment

Santee, CA 92071

Inquiry Number: 4776203.6

November 16, 2016

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

11/16/16

Site Name:

San Diego River Trail - Carlton
Carlton Oaks Segment
Santee, CA 92071
EDR Inquiry # 4776203.6

Client Name:

IWS Environmental
5211 Hartford Way
Westminster, CA 92683
Contact: Jim Bunck

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Search Results:

Year	Scale	Details	Source
2012	1"=700'	Flight Year: 2012	USDA/NAIP
2010	1"=700'	Flight Year: 2010	USDA/NAIP
2009	1"=700'	Flight Year: 2009	USDA/NAIP
2005	1"=700'	Flight Year: 2005	USDA/NAIP
2002	1"=700'	Acquisition Date: January 01, 2002	USGS/DOQQ
1996	1"=700'	Flight Date: January 01, 1996	USGS
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1985	1"=700'	Flight Date: January 01, 1985	USGS
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1964	1"=700'	Flight Date: January 01, 1964	USGS
1953	1"=700'	Flight Date: January 01, 1953	USGS
1949	1"=700'	Flight Date: January 01, 1949	USGS

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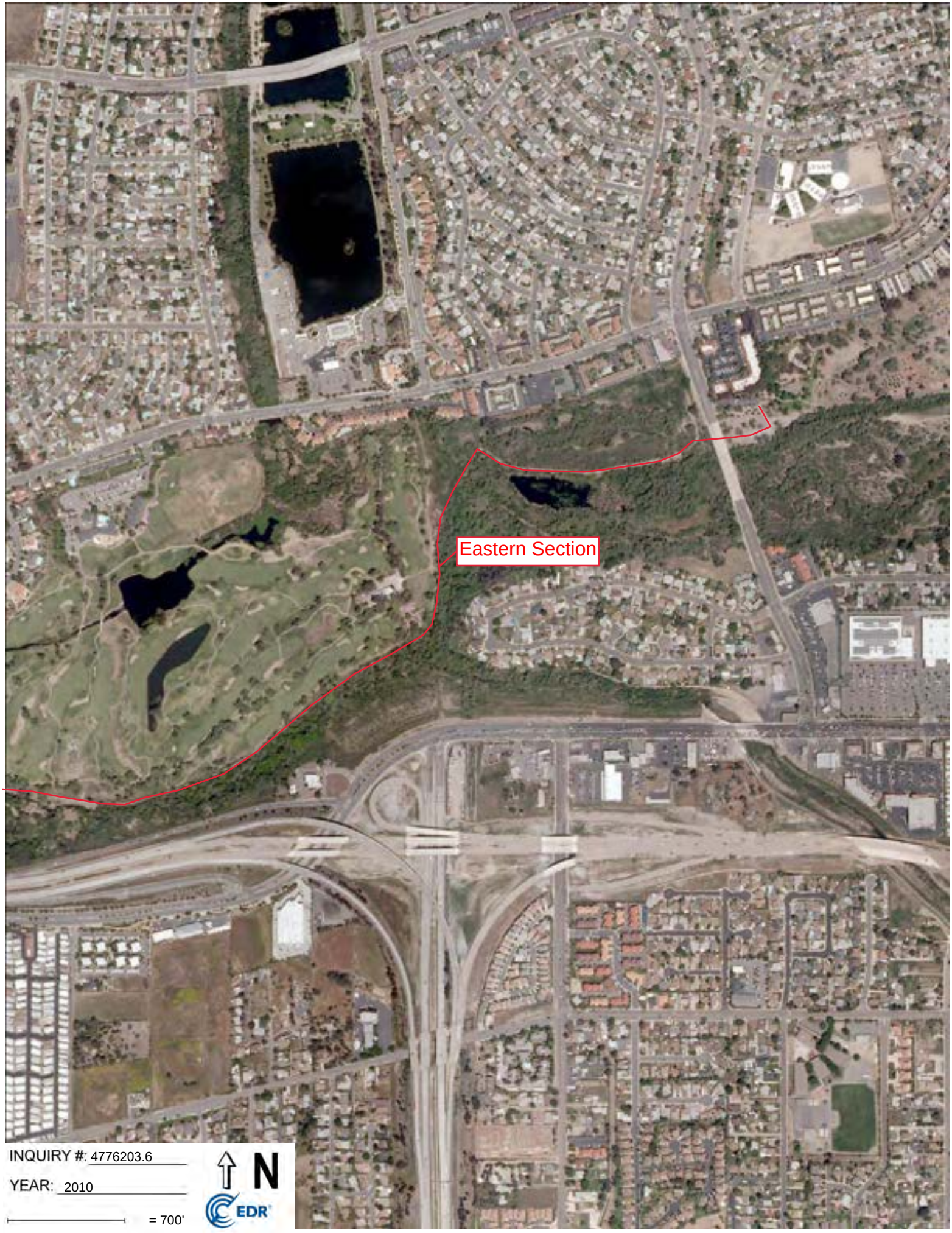
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EDR


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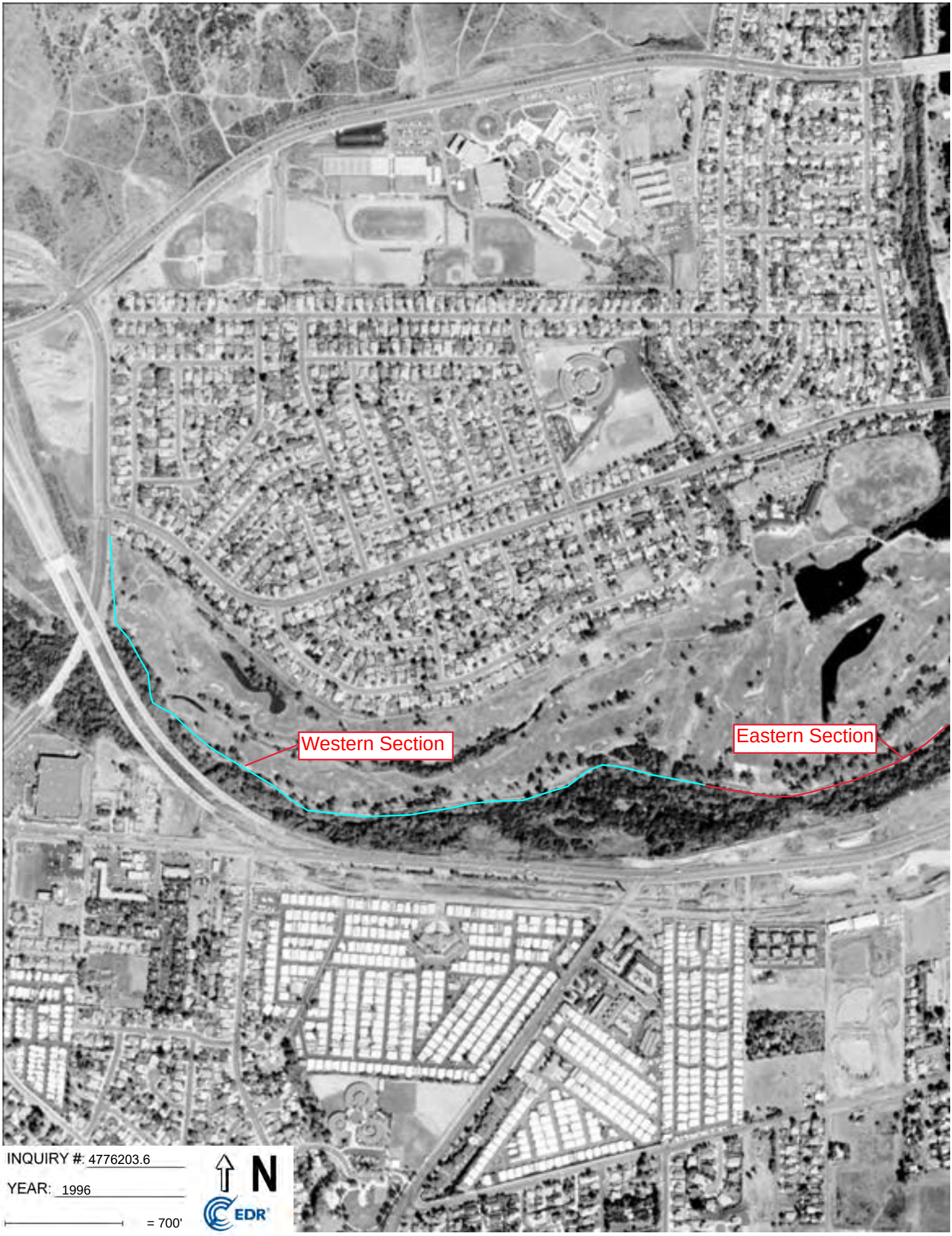

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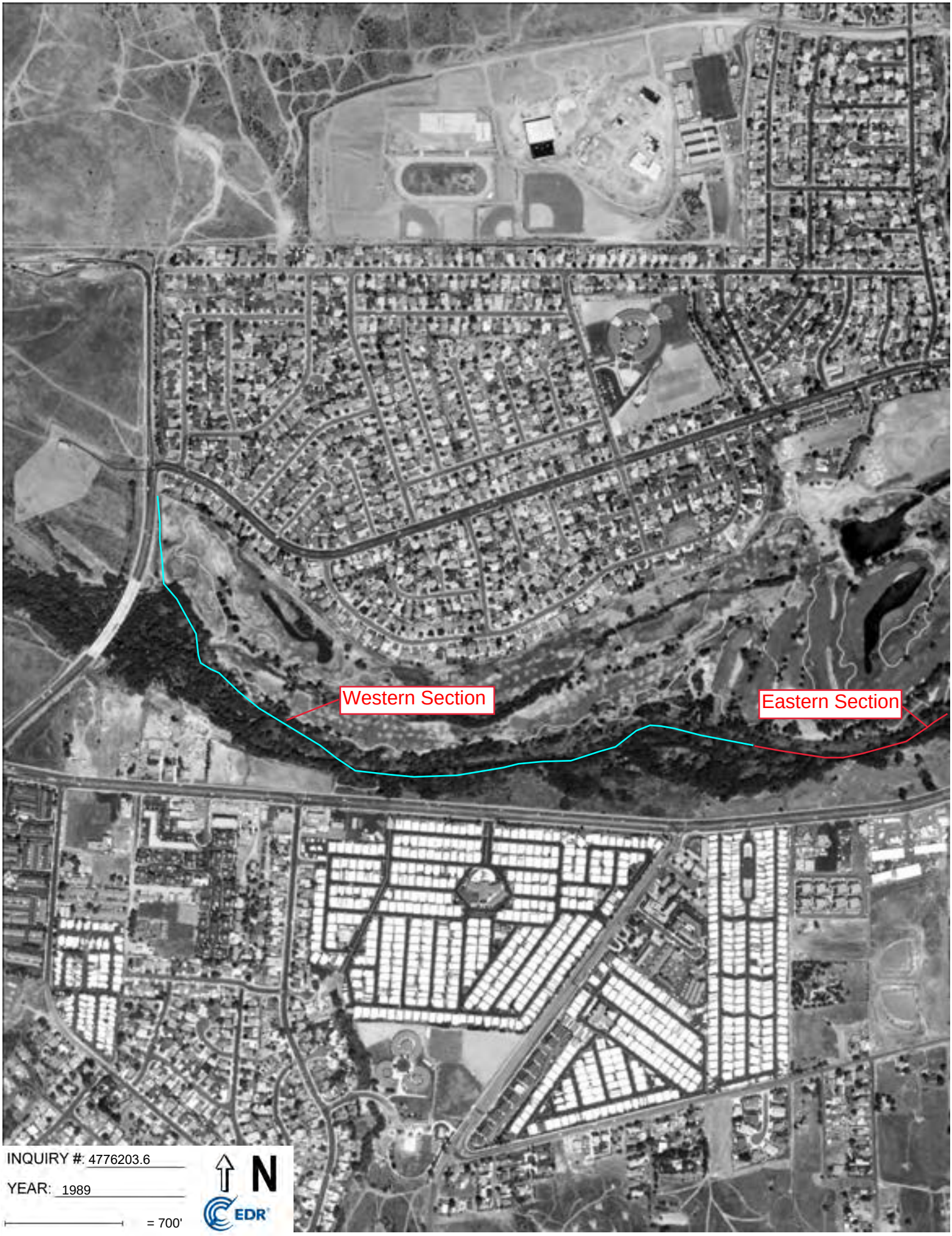

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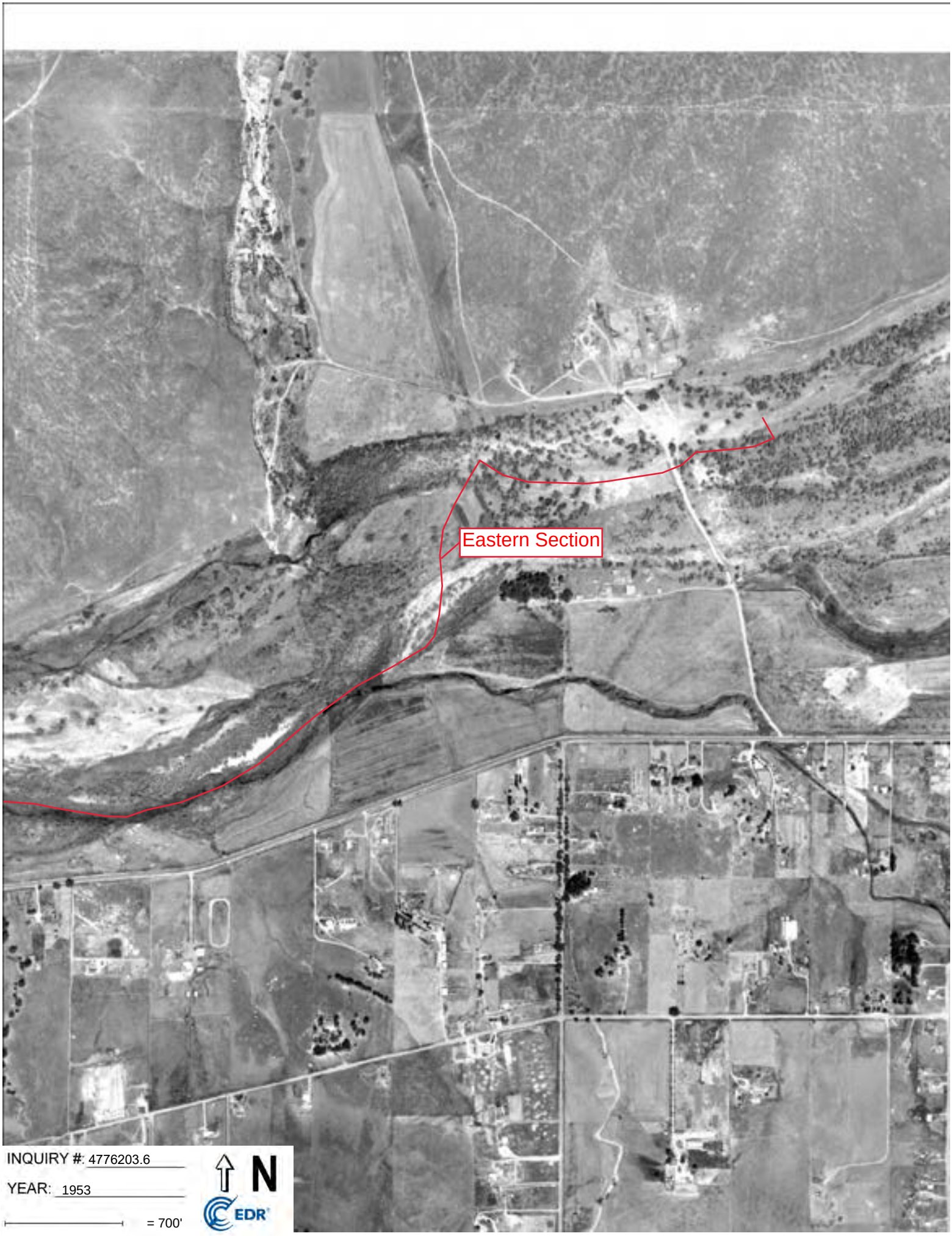

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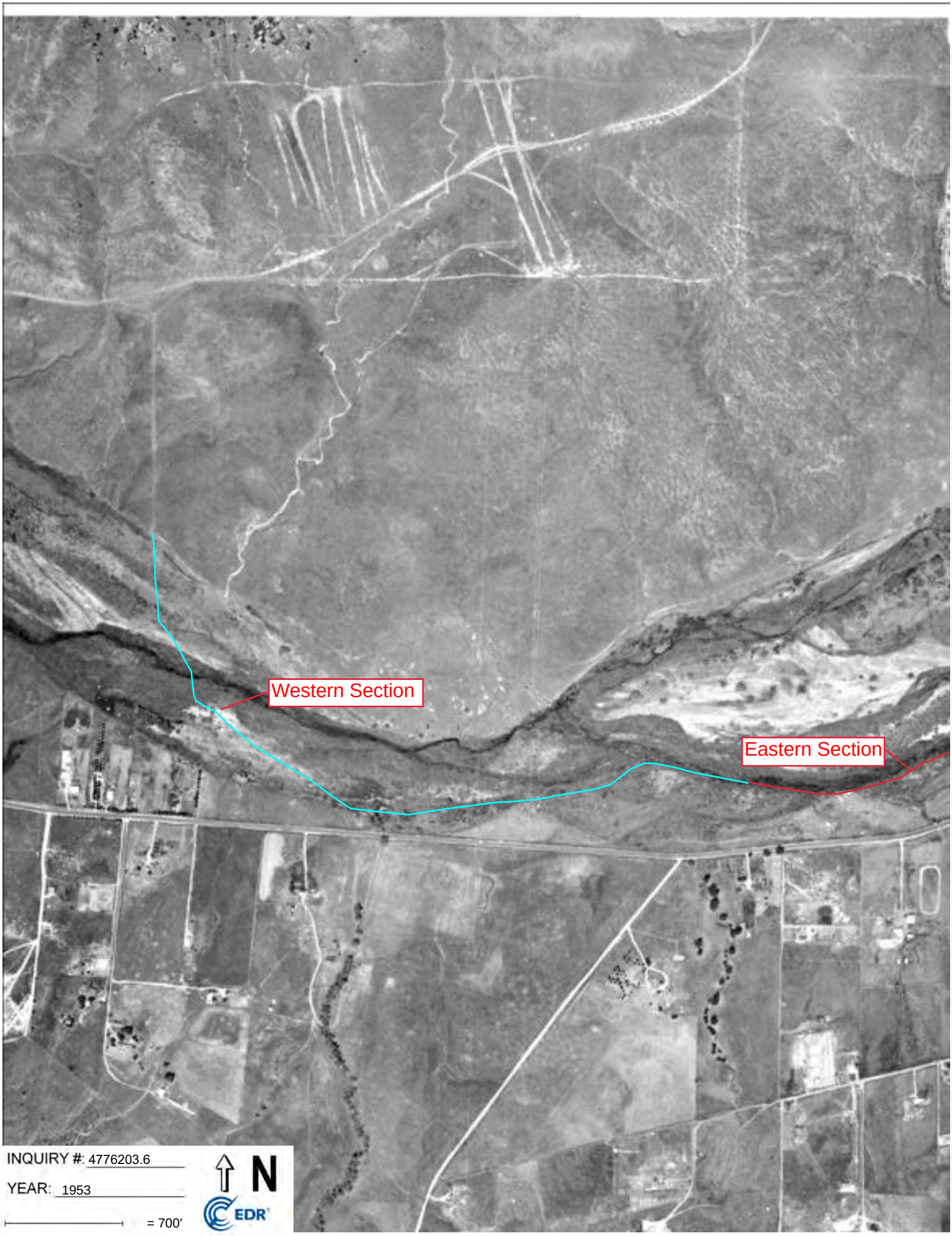

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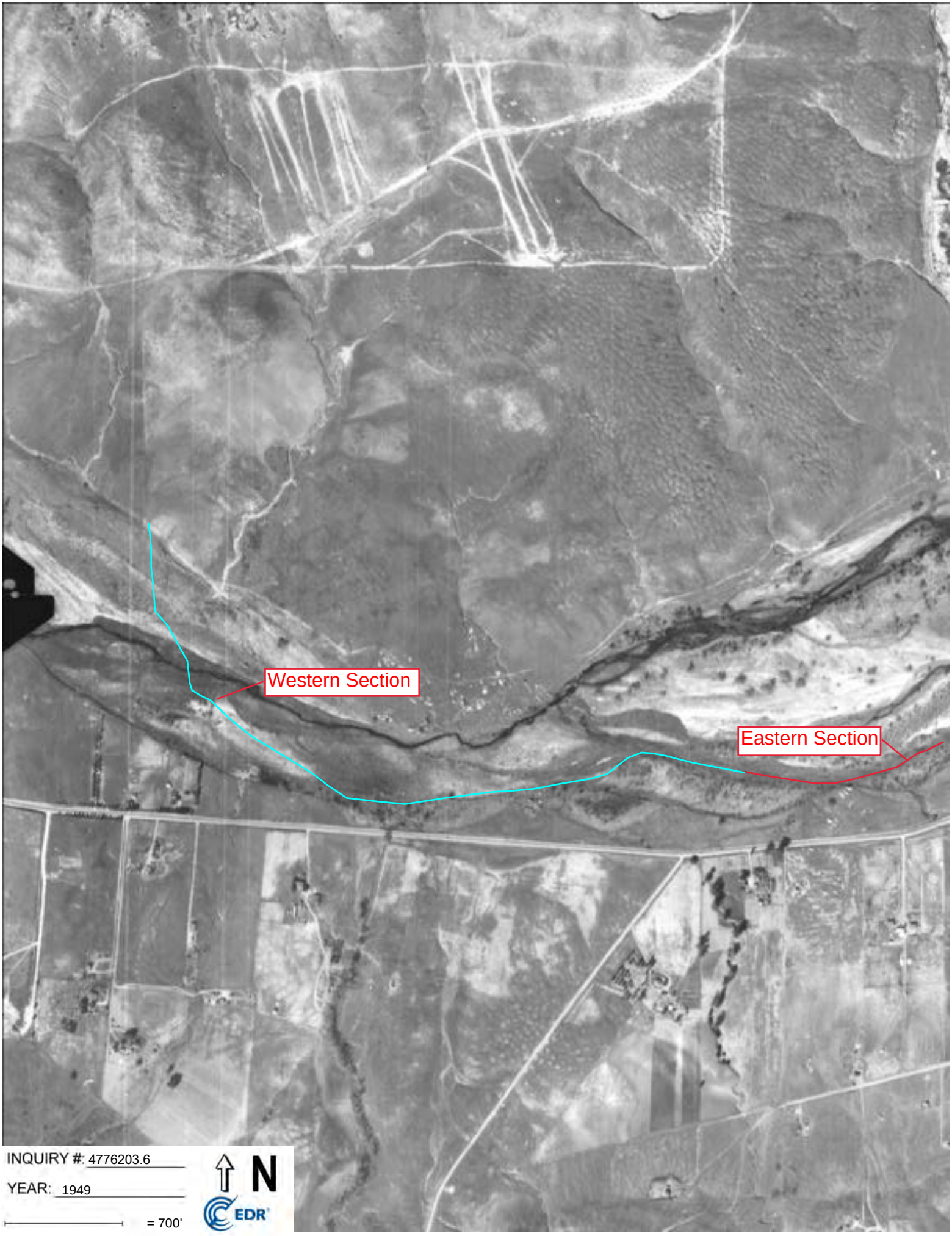

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EDR


Western Section
Eastern Section
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EDR


Eastern Section
INQUIRY #: 4776203.6
YEAR: 1953
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EDR


Western Section
Eastern Section
INQUIRY #: 4776203.6
YEAR: 1953
= 700'
N
EDR


Eastern Section
INQUIRY #: 4776203.6
YEAR: 1949
= 700'
N
EDR


Western Section
Eastern Section
INQUIRY #: 4776203.6
YEAR: 1949
= 700'
N
EDR

San Diego River Trail - Carlton Oaks Segment

Carlton Oaks Segment

Santee, CA 92071

Inquiry Number: 4776203.7

November 09, 2016

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

11/09/16

Site Name:

San Diego River Trail - Carlton
Carlton Oaks Segment
Santee, CA 92071
EDR Inquiry # 4776203.7

Client Name:

IWS Environmental
5211 Hartford Way
Westminster, CA 92683
Contact: Jim Bunck

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by IWS Environmental were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA
Project: 16-1108

Coordinates:

Latitude:	32.837726 32° 50' 16" North
Longitude:	-117.011521 -117° 0' 41" West
UTM Zone:	Zone 11 North
UTM X Meters:	498921.79
UTM Y Meters:	3633297.53
Elevation:	307.99' above sea level

Maps Provided:

2012	1903
1994, 1996	
1975	
1967	
1953, 1955	
1947	
1942	
1930	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets



El Cajon
2012
7.5-minute, 24000



La Mesa
2012
7.5-minute, 24000

1994, 1996 Source Sheets



La Mesa
1994
7.5-minute, 24000
Aerial Photo Revised 1994



El Cajon
1996
7.5-minute, 24000

1975 Source Sheets



El Cajon
1975
7.5-minute, 24000
Photo Revised 1975
Aerial Photo Revised 1953



La Mesa
1975
7.5-minute, 24000
Photo Revised 1975
Aerial Photo Revised 1975

1967 Source Sheets



El Cajon
1967
7.5-minute, 24000
Aerial Photo Revised 1966



La Mesa
1967
7.5-minute, 24000
Aerial Photo Revised 1966
Edited 1953

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953, 1955 Source Sheets



La Mesa
1953
7.5-minute, 24000
Aerial Photo Revised 1950



El Cajon
1955
7.5-minute, 24000
Aerial Photo Revised 1953

1947 Source Sheets



La Mesa
1947
7.5-minute, 24000

1942 Source Sheets



La Mesa
1942
7.5-minute, 31680

1930 Source Sheets



La Jolla
1930
15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1903 Source Sheets



La Jolla
1903
15-minute, 62500



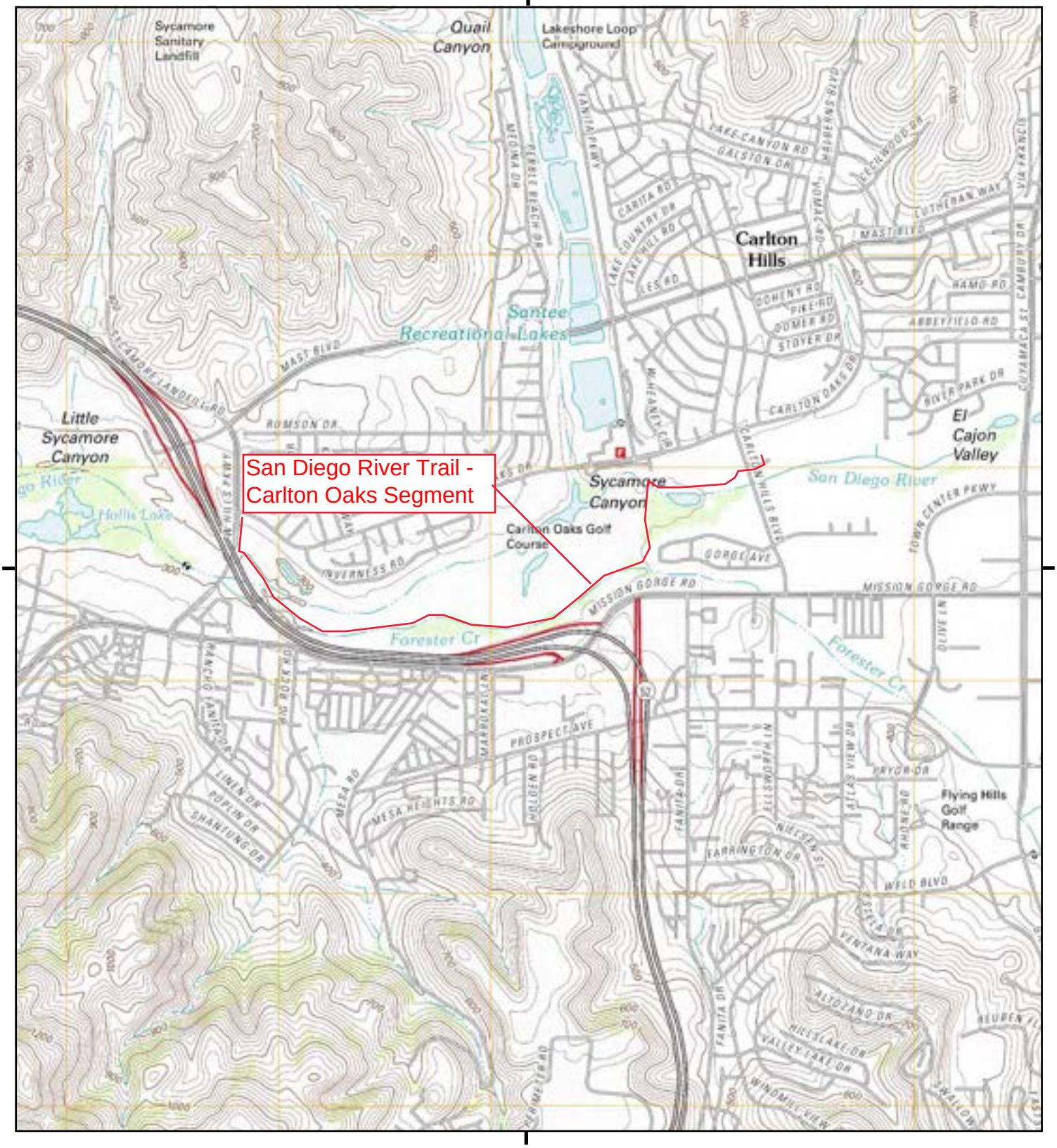
Elcajon
1903
15-minute, 62500



El Cajon
1903
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

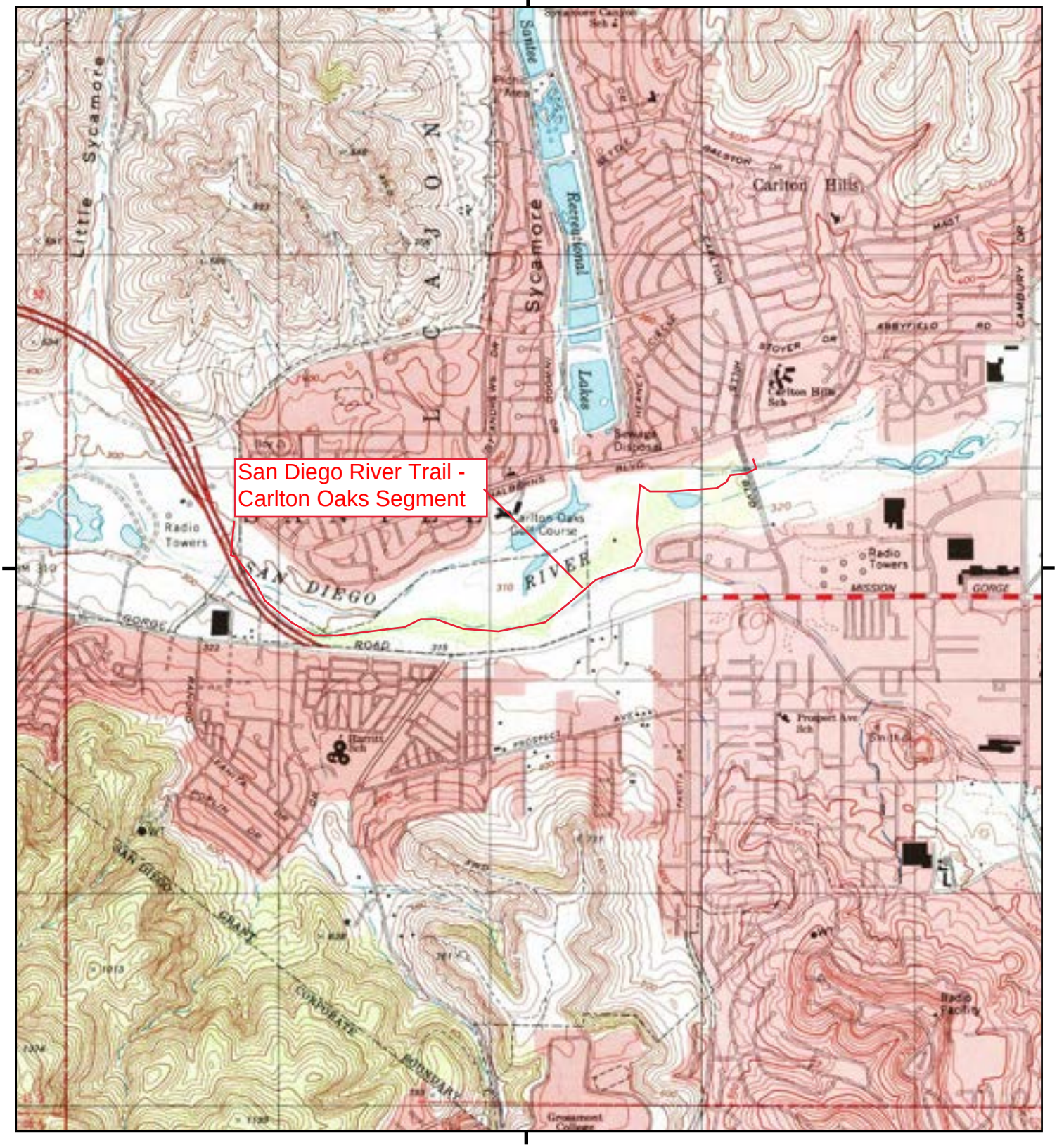
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Mesa, 2012, 7.5-minute
SE, El Cajon, 2012, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

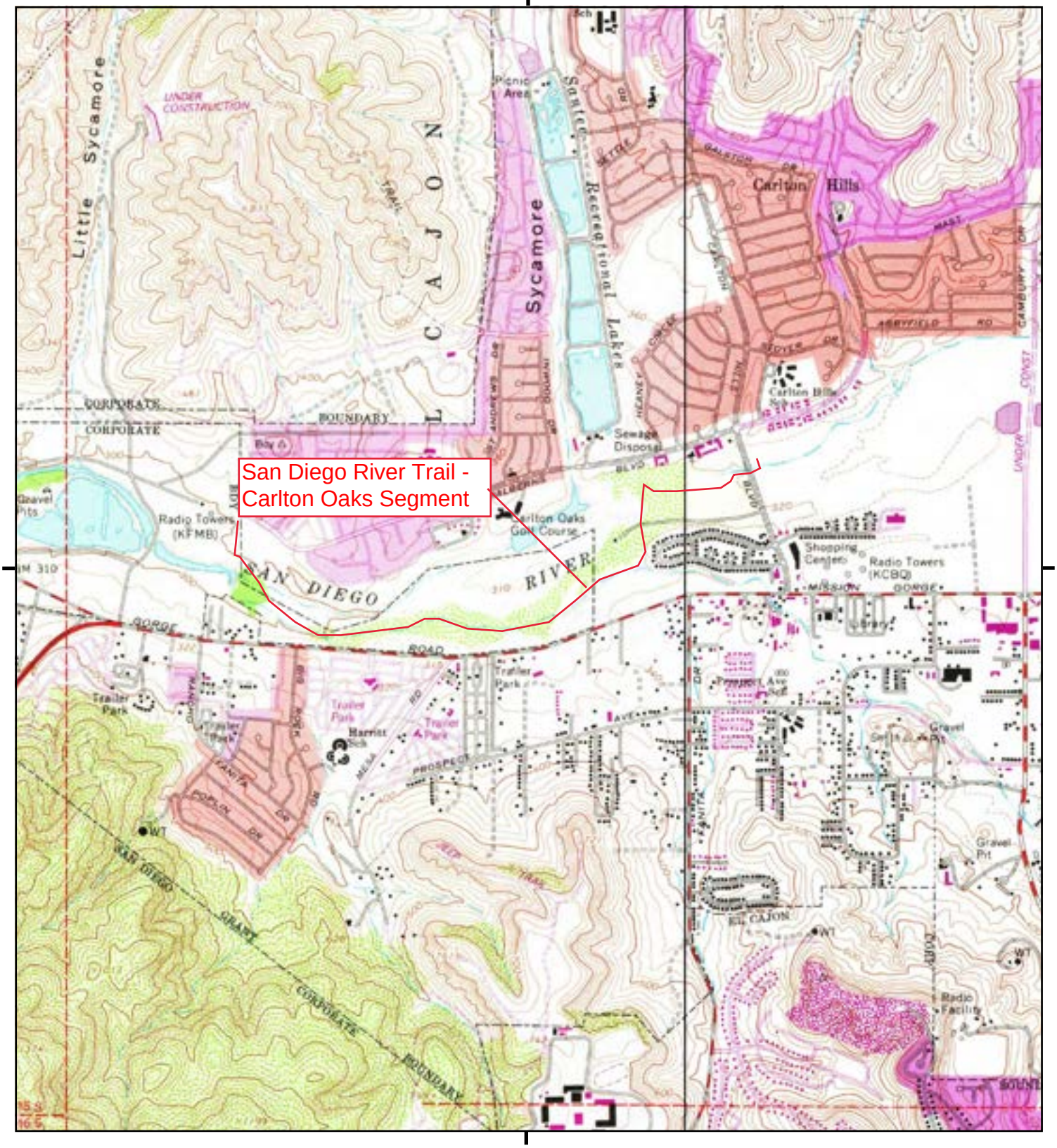
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Mesa, 1994, 7.5-minute
SE, El Cajon, 1996, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

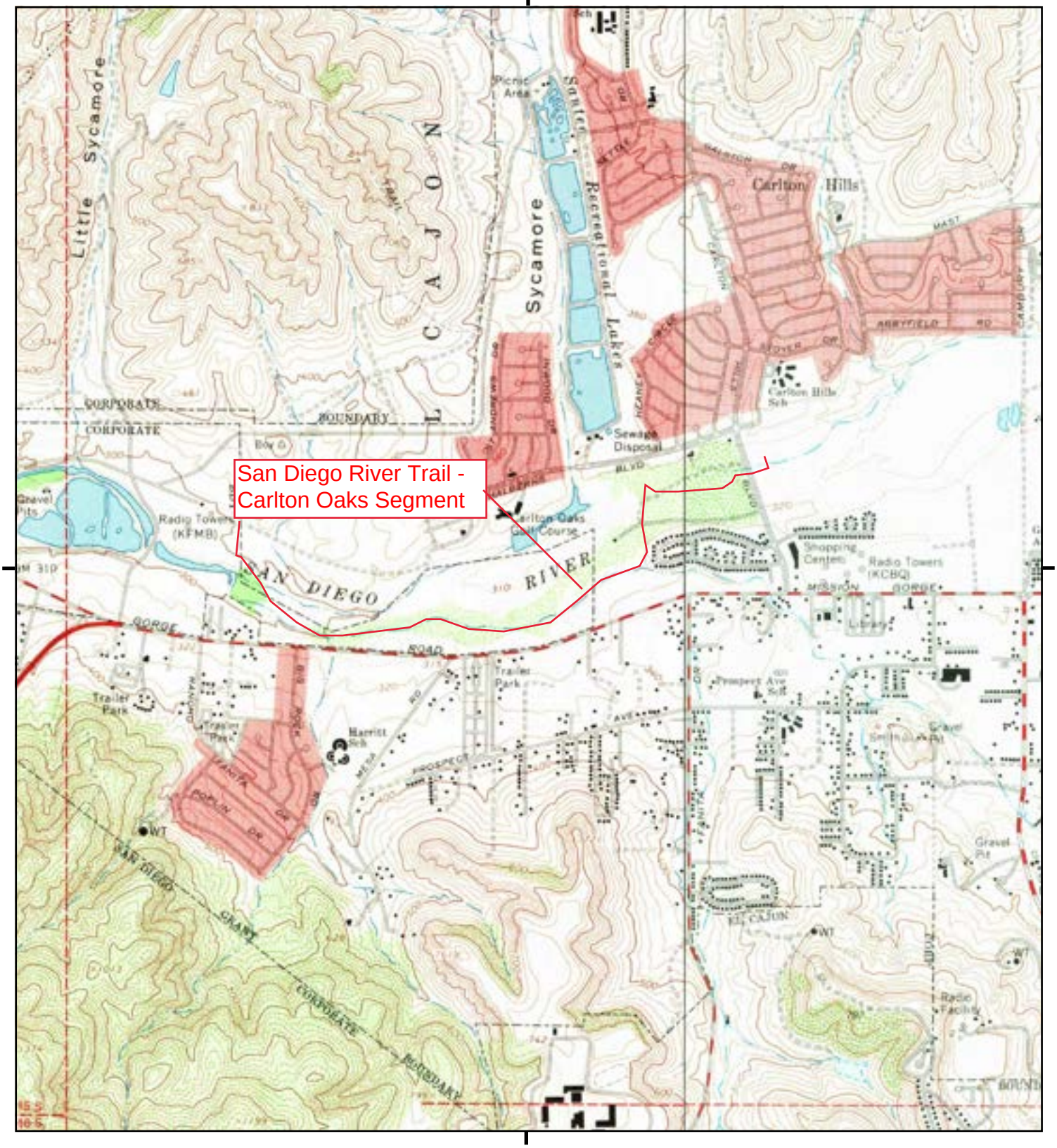
TP, La Mesa, 1975, 7.5-minute
SE, El Cajon, 1975, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N

Historical Topo Map

1967



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

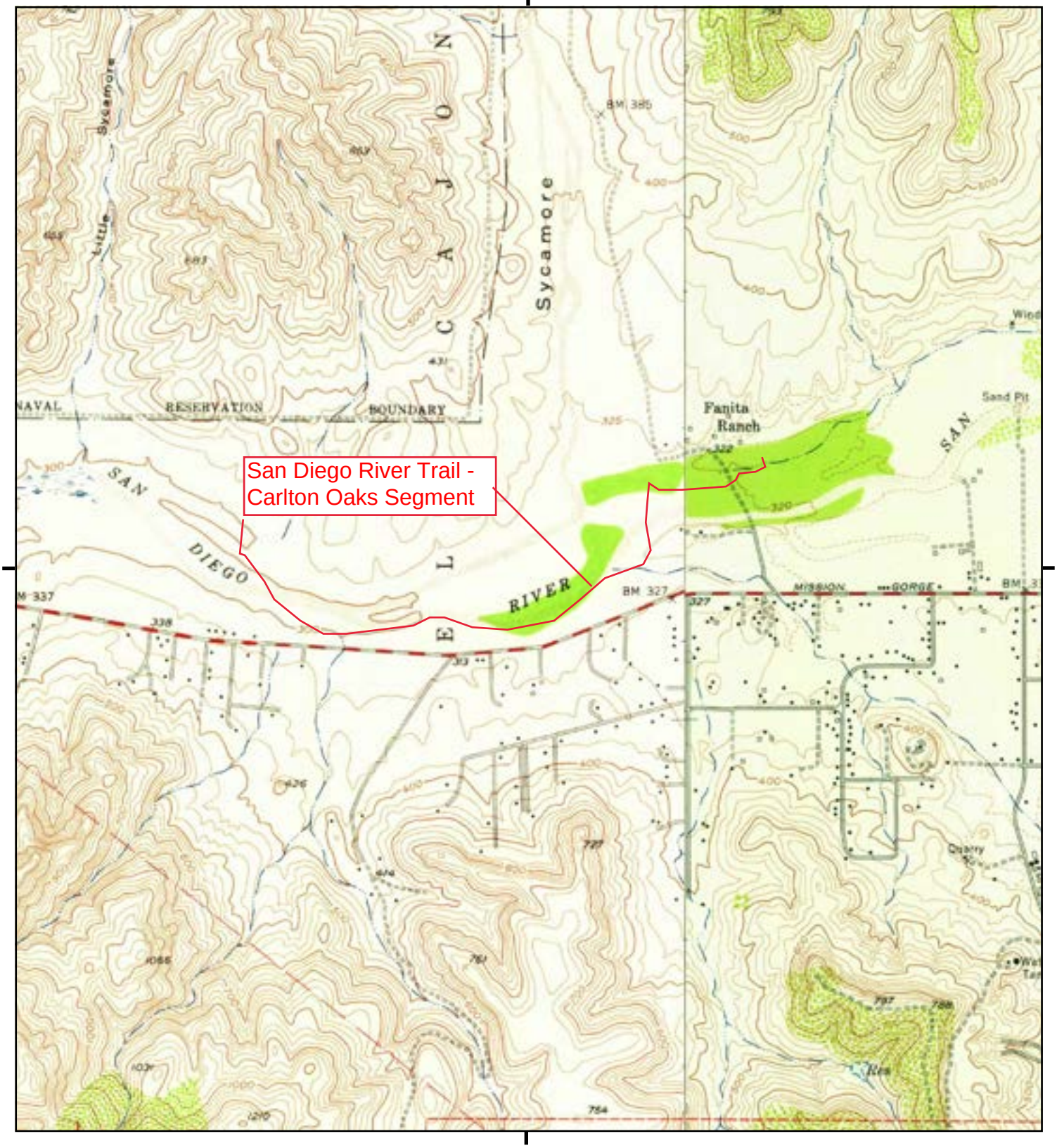
TP, La Mesa, 1967, 7.5-minute
SE, El Cajon, 1967, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N

Historical Topo Map

1953, 1955



This report includes information from the following map sheet(s).

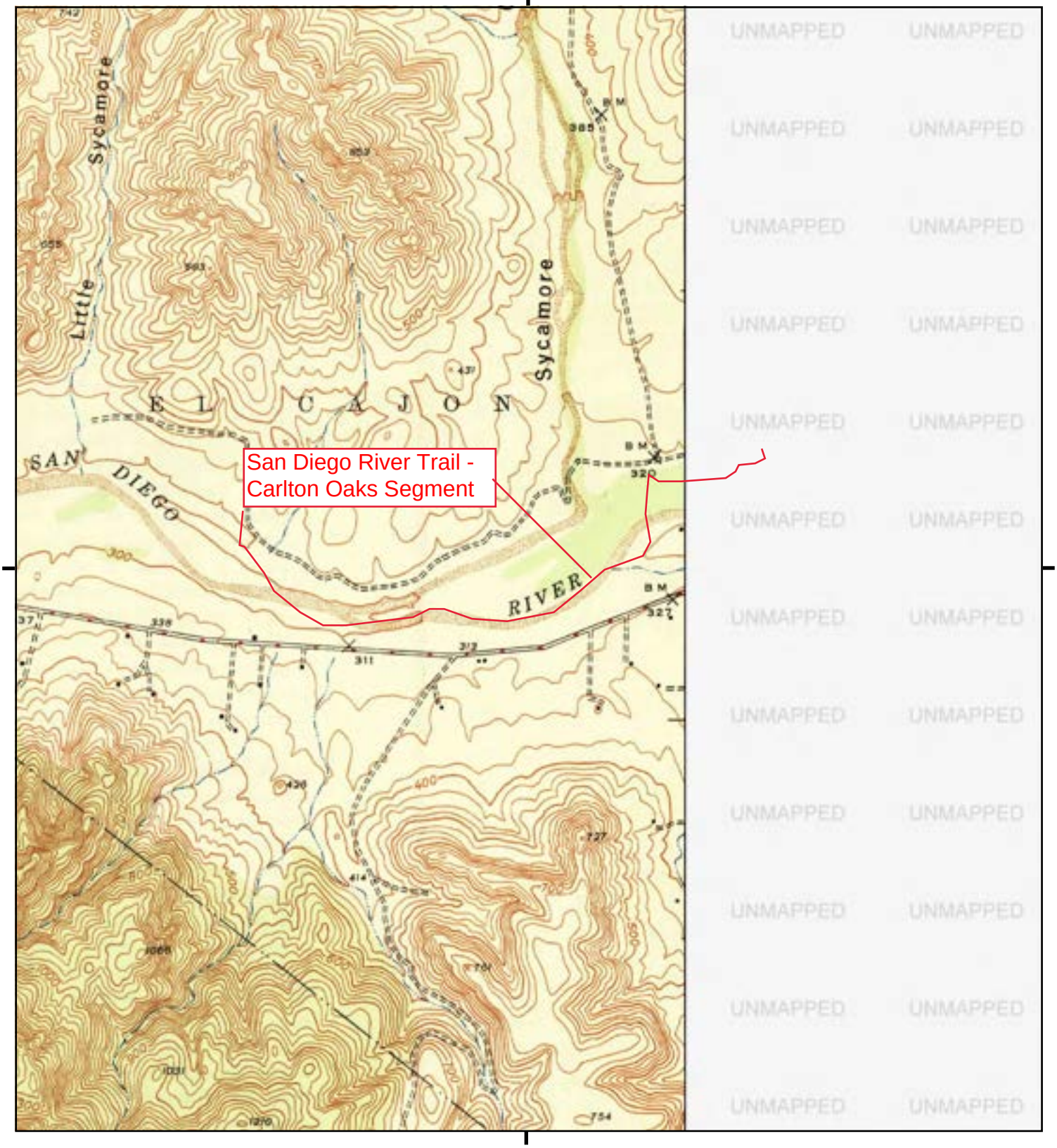
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Mesa, 1953, 7.5-minute
SE, El Cajon, 1955, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

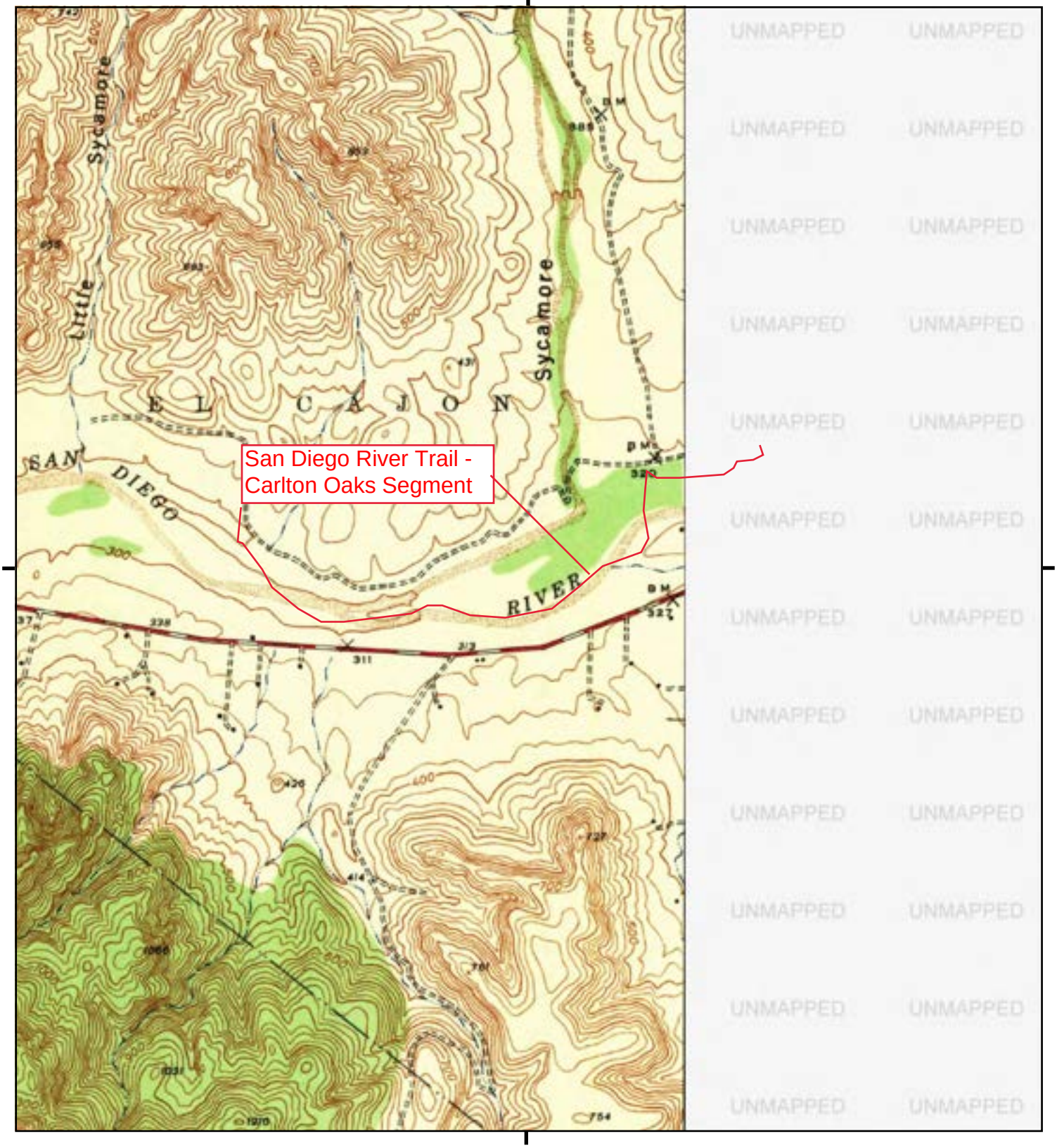
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Mesa, 1947, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

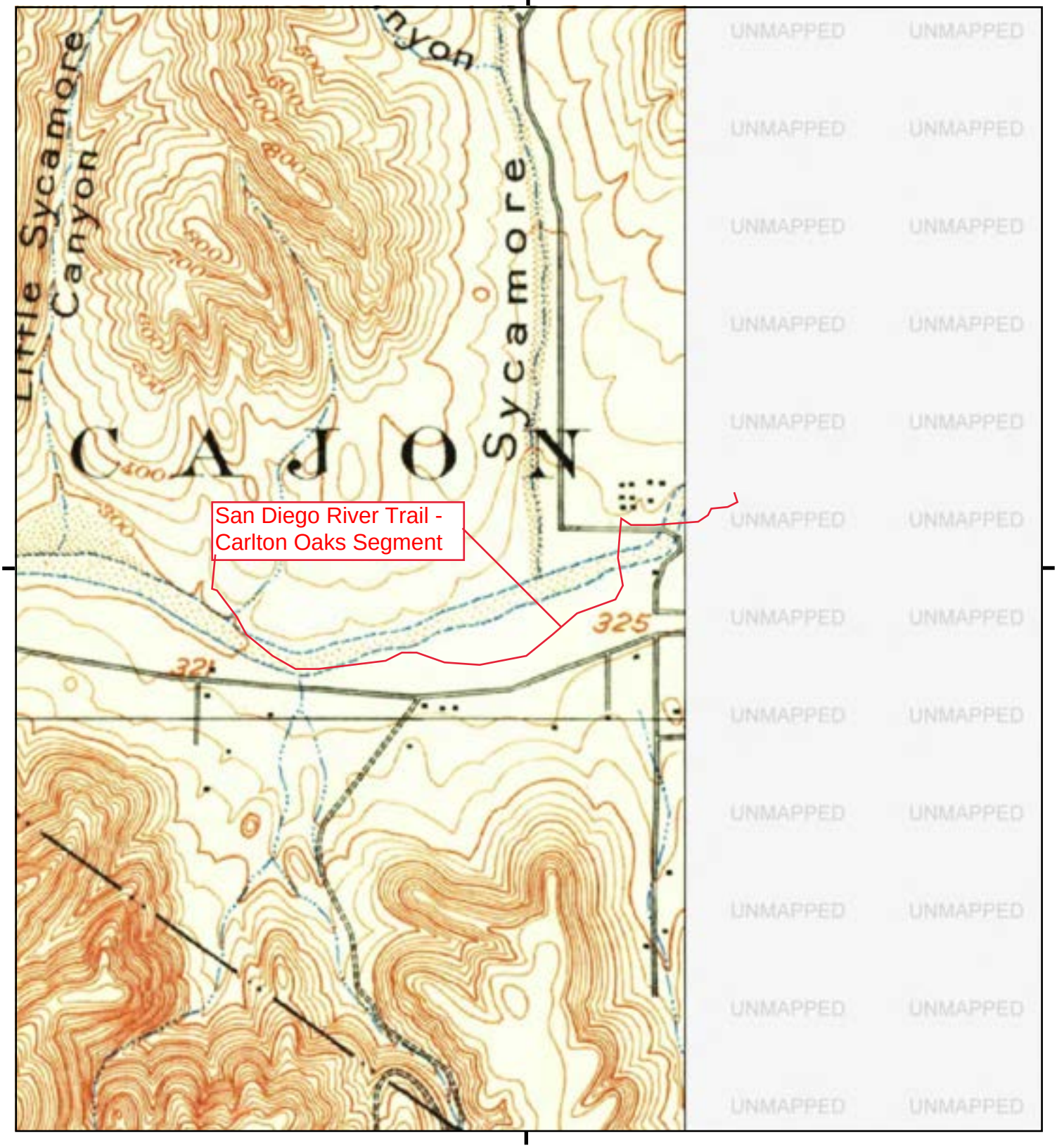
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Mesa, 1942, 7.5-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

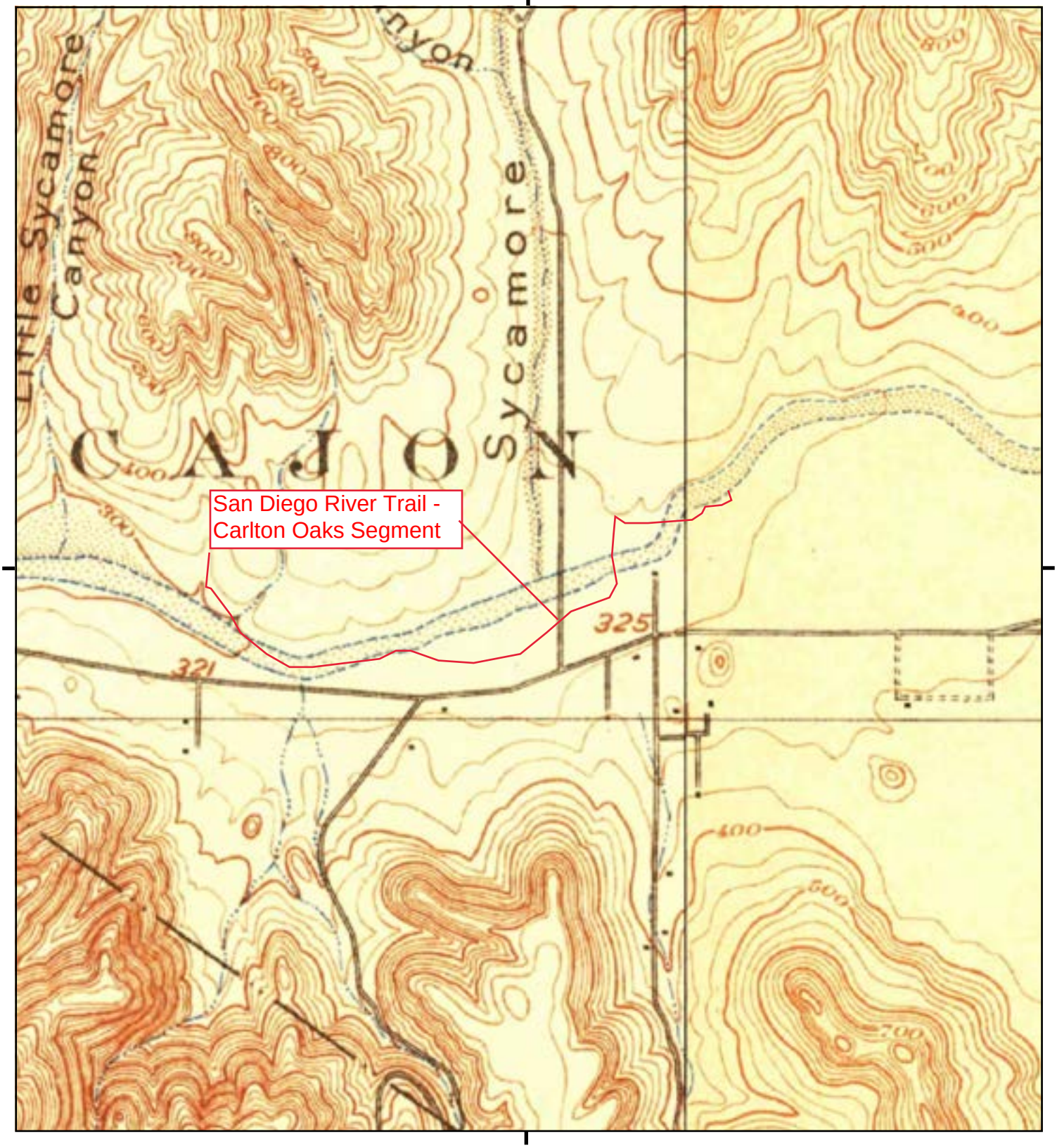
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Jolla, 1930, 15-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, La Jolla, 1903, 15-minute
E, Elcajon, 1903, 15-minute
E, El Cajon, 1903, 15-minute

SITE NAME: San Diego River Trail - Carlton Oaks Seg
ADDRESS: Carlton Oaks Segment
Santee, CA 92071
CLIENT: IWS Environmental

N

San Diego River Trail - Carlton Oaks Segment
9200 Inwood Avenue
Santee, CA 92071

Inquiry Number: 4779368.3
November 15, 2016

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2013	☑	☑	Cole Information Services
2008	☑	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1985	☑	☑	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1976	☐	☐	Haines Criss-Cross Directory
1970	☐	☐	Haines Criss-Cross Directory

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FINDINGS

TARGET PROPERTY STREET

9200 Inwood Avenue
Santee, CA 92071

Year	*CD Image*	*Source*	
INWOOD DR			
2013	pg A4	Cole Information Services	
2008	pg A7	Cole Information Services	
2003	pg A10	Cole Information Services	
1999	pg A13	Cole Information Services	
1995	pg A16	Cole Information Services	
1992	pg A19	Cole Information Services	
1985	pg A21	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1976	-	Haines Criss-Cross Directory	Street not listed in Source
1970	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
CARLTON HILLS BLVD			
2013	pg. A2	Cole Information Services	
2008	pg. A5	Cole Information Services	
2003	pg. A8	Cole Information Services	
1999	pg. A11	Cole Information Services	
1995	pg. A14	Cole Information Services	
1992	pg. A17	Cole Information Services	
1985	pg. A20	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1976	-	Haines Criss-Cross Directory	Street not listed in Source
1970	-	Haines Criss-Cross Directory	Street not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✔	Cole Information Services

CARLTON HILLS BLVD 2013

8926	EAST COUNTY KIRBY
	ONE STOP
8928	SCOTT BARBER SHOP
8929	VILLAGE INN
8933	NEW YORK GIANT PIZZA
8936	SANTEE PET HOSPITAL
8939	BEBE NAIL & SPA
8943	HV HAIR SALON
8947	CARLTON DRYCLEAN & ALTERATION
8951	CARLTON HILLS GROOMING
	DOGGIE STATION
8954	GRANT JEANNE DC
	JEANNE GRANT
8955	TRAD AM KARATE
8959	SANTANA LIQUOR
8964	HOSS JOHN E DDS ORTHODONTICS
8967	GTM DISCOUNT GENERAL STORE
	OCCUPANT UNKNOWN
9009	STRAM INC
9016	BEN DUNN
	CAYETANO DAMASO
	DANIEL PEDRAZA
	ENRIQUE DEOCA
	ESTELA VARGAS
	JESUS ALVARADO
	JOHN TIBIATOWSKI
	JOSE PALACIOS
	JULIO GARCIAAGUILAR
	LESLI CORONADO
	LORENA VILLAGOMEZ
	MARIA SANCHEZ
	MARIA VALENZUELA
	MICHELLE STONEBURNER
	RAUL TOVAR
	TROPHY MASTER
	VIOLETA FUENTES
9025	GROSSO ERNEST J OD
	LUSTROS INC
9225	CONTINENTAL CLEANERS
	COUNTY OF SAN DIEGO
	DESERT ROSE STUDIOS
	EL RANCHITO TACO SHOP
	ESSENTIAL GROOMING
	EXPRESSIONS DANCE & MOVEMENT CENTER
	HAIR IT IS ETC
	INFINITY BRAZILIAN JIUJITSU
	JANETS CAFE & DELI
	LE HOE MD
	MANNACOM INC
	MIKE BROWN DDS

Target Street	Cross Street	Source
-	✔	Cole Information Services

CARLTON HILLS BLVD 2013 (Cont'd)

9225	PAUL DOSIK
	PREMIER MORTGAGE & REAL ESTATE
	RONN HALL
	SALVATORE TARANTINO
	SANTEE PARTY ZONE
	SANTEES PIZZA
	SCRAPPIN ATTACK
	TARANTINO SALVATORE MD
	THE CUPCAKE STORE INC
	THE FRIENDLY USED BOOKSTORE
9251	7ELEVEN
9292	BLUE IRIS FLOWERS
	DIY YOGURT
	ESTRADAS MEXICAN FOOD
	LAKES MARKET & DELI
	SANTEE ALTERATION & CLEANERS
	WEST COAST MACHINES
9302	BODYMIND CONNECTION
9307	AMERICAN MORTGAGE AUDITORS INC
	ESPENSHIP KENWAY CONSULTANTS INC
	HOWLAND BILLRE MAX HOMETOWN REALTOR
9308	BARKER DAVID K DC
9320	EVELYN INGRAM
9321	OCCUPANT UNKNOWN
9328	MARTHA DAVIDSON
9329	BRANDON WEISMAN
9335	MARK WATKINS
9336	DAVID GAJUS
9343	CHARLES RANDALL
9344	WILLIAM BRINKER
9351	JACQUELINE JORDAN
9352	EUGENE BOTTICELLI
9359	TONY BREWER
9360	ALEJANDRO DEARIE

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 2013

9200 CARLTON OAKS COUNTRY CLUB
SEVEN ELEVEN INDUSTRIES
9225 TORU MISE

Target Street	Cross Street	Source
-	✔	Cole Information Services

CARLTON HILLS BLVD 2008

8928	FARRELLS TAE KWON DO
8929	YE VILLAGE INN
8936	DR P ZEICU
	SANTEE PET HOSPITAL
8939	HOLLY & VIVIAN NAILS & SPA
8943	CAROLS
	ROYALE BEAUTY SHOP
	WEST END HAIR STUDIO
8947	CARLTON DRYCLEANERS & ALTERATION
8951	DOGGIE STATION
8954	JEANNE GRANT
	JEANNE GRANT DC
8955	AMERICAN BURKS TRAD AM KART
8959	SANTANA MART & LIQUOR
8964	GERALD E SISSON DDS
	JOHN E HOSS DDS
8967	G T M
	GTM WHOLESALE LIQUIDATORS INC
9009	BP WEST COAST PRODUCT INC
9016	AGAPE MENDOZA
	DANIEL PEDRAZA
	HUSSAIN OCHOA
	JESUS ALVARADO
	JOSE LUCIANO
	JOSE PALACIOS
	JOSE VARGAS
	JULIO GARCIAAGUILAR
	LISA TIBIATOWSKI
	LONGINA DUNN
	LUIS VALENZUELA
	MARCO LEPRO
	NORMA ACOSTA
	RUTH VEGA
	SANDRA DIMAPAN
	VIOLETA FUENTES
9025	GROSSO DR ERNEST OD
	ONE STOP LENDING & REALTY
9225	COUNTY OF SAN DIEGO
	EL RANCHITO TACO SHOP
	ESPENSHIP KENWAY CONSULTANTS
	GALINA SHACKELFORD
	HAIR IT IS
	KBS MEMPHIS BBQ
	PAUL H DOSIK DDS
	PREMIER MORTGAGE & REAL ESTATE
	RESCU ACADEMY
	RESCU DRUG & ALCOHOL TREATMENT CENTE
	SANTEE FAMILY DENTISTRY
	SCRAPPIN ATTACK
	SEVILLE CLEANERS INC

CARLTON HILLS BLVD 2008 (Cont'd)

9225	SOMERVILLE CLEANERS & ALTERATIONS
	STUDIO 52
	TABLOID COFFEE
	THE FRIENDLY USED BOOKSTORE
9251	SEVEN ELEVEN FOOD STORES
9292	BLUE IRIS FLOWERS
	ESTRADAS MEXICAN FOOD
	LAKES MARKET & DELI
	TWISTED PEAKS & OTHER TREATS
9302	BODYMIND CONNECTION
	HOLISTIC SYNERGY CENTER
	MCCANDLESS ELIZABETH HHP
9307	ATOMIC COMPUTERS
	BILL HOWLAND REMAX HOMETOWN REALTORS
	DIXON JERRY L CPA INC
	HERITAGE ESCROW CO
	JERRY DIXON
	KERBIS & DICKSON ACCOUNTING
	RESTART INC
	STEWART MARGIE PROPERTY MGMT
	WILLIAM HOWLAND & ASSOCIATES INC
9308	BARKER CHIROPRACTIC CLINICS
9312	5150 ENTERPRISES
9320	THOMAS INGRAM
9321	OCCUPANT UNKNOWN
9328	MARTHA DAVIDSON
9329	SHAWN HOWARD
9335	MARK WATKINS
9336	ERIKA ESTRADA
9343	DENISE VANONI
9344	LEONILA BRINKER
9351	JAMES CARLSON
9352	EUGENE BOTTICELLI
9359	VERNON BREWER

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 2008

9200 CASABLANCA COUNTRY CLUB INC
9225 OCCUPANT UNKNOWN

Target Street	Cross Street	Source
-	✓	Cole Information Services

CARLTON HILLS BLVD 2003

8926	BIMBO BAKERIES USA THRIFT STR
8929	OCCUPANT UNKNOWN
8933	GHAZWAM YOUSIF
	GIANT NEW YORK PIZZA
	NEW YORK GIANT PIZZA
8936	OCCUPANT UNKNOWN
	SANTEE PET HOSPITAL
8943	AUGUST SCALZITTI
	ROYALE BEAUTY SHOP
8947	CAROLS
	HAIR & NOW
	HANH HUYNH
8951	OCCUPANT UNKNOWN
8954	JEANNE GRANT DC
8955	OCCUPANT UNKNOWN
	TRAD AM KARATE
8964	JOHN E HOSS DDS ORTHODONTICS
	OCCUPANT UNKNOWN
8967	GTM WHLSLE LQDTRS
9016	AGAPE MENDOZA
	ANGELA VERGARA
	DANIEL PEDRAZA
	HUSSAIN OCHOA
	JESUS ELIAS
	JOHN DENIGRO
	MENDOZA AGAPE
	RAUL PIMENTEL
9025	DR ERNEST GROSSO OD
	GEORGIA NARROW FABRICS
	GRAYMAR ACADEMY
9225	AMBERS ARTISTIC DESIGNS
	CARLTON OAKS PLAZA SNT LBRRY
	CHRIST THE KING LUTHERAN CHRCH
	HAIR IT IS
	LIMBS & THINGS INC
	MISSION FEDERAL CREDIT UNION
	NAILS BY LISA
	POSITIVE CONNECTION
	SAN DIEGO PUBLIC LBRRY ADULT
	SANTEE FAMILY DENTISTRY
	SOJOURN DEVELOPMENT LLC
9251	OCCUPANT UNKNOWN
	SEVEN ELEVEN FOOD STORES
9302	MISSION GORGE VETERINARY
	OCCUPANT UNKNOWN
9307	BRIAN S NATHANSON CPA
	DANIEL NEISS
	DIXON JERRY L CPA
	HERITAGE ESCROW CO
	JAMES HOSACK

CARLTON HILLS BLVD 2003 (Cont'd)

9307	KERBIS & DIXON ACCOUNTING
	RE MAX HOMETOWN REALTORS
	ROBERT STEWART
	STEWART MARGIE PROPERTY MNGMNT
	WILLIAM HOWLAND ASSOCS
9308	BARKER DAVID K DC
	OCCUPANT UNKNOWN
9320	THOMAS INGRAM
9321	OCCUPANT UNKNOWN
9328	CLARENCE DAVIDSN
9329	BARBARA BISHOP
9335	MARK WATKINS
9336	SUSAN BOWERS
9344	LEONILA BRINKER
9351	WILLIAM HANCOCK
9352	EUGENE BOTTICELLI
9359	VERNON BREWER
9360	OCCUPANT UNKNOWN

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 2003

9200 CARLTON OAKS COUNTRY CLUB
CASABLANCA COUNTRY CLUB INC
GEORGE FANG

Target Street	Cross Street	Source
-	✔	Cole Information Services

CARLTON HILLS BLVD 1999

8926	FORNACA FAMILY BAKERY THRIFT STORES
8928	CRAZY 4 TOYS
8929	VILLAGE INN EARL & BARBARAS VILLAGE INN
	YE VILLAGE INN
8933	GIANT NEW YORK PIZZA 8
	NEW YORK GIANT PIZZA 8
8936	SANTEE PET HOSPITAL
	ZEICU PAVEL DVM
8939	CENTER STAGE DANCE
8943	ROYAL BEAUTY SHOP
8947	CARLTON HILLS ALTERATIONS
	CAROLS
	HAIR & NOW
8951	CARLTON HILLS GROOMING
	TEDDY'S DOG HOUSE SANTEE
8954	CARLTON HILLS CHIROPRACTIC CLINIC
	GRANT JEANNE DC
	JEANNE GRANT
	OCCUPANT UNKNOWN
8955	BURKS TRAD AM KARATE
8959	CARLTON HILLS LIQUOR
8963	SAV U FOODS
8964	HOSS JOHN E DDS ORTHODONTICS
	SISSON GERALD E DDS
8967	GTM DISCOUNT GENERAL STORE
9016	AGAPE MENDOZA
	DANIEL PEDRAZA
	FEDERICO TRANSITO
	JESUS ALVARADO
	JOSE PALACIOS
	JOSE VARGAS
	LISA TIBIATOWSKI
	LONGINA DUNN
	LUIS VALENZUELA
	MARCO LEPRO
	RUTH VEGA
	VIOLETA FUENTES
9025	BERMUDES ARCHITECTS
	CHAPPELLE MIKE & ASSOCIATES
	FARMERS INSURANCE GROUP AGENTS (CONTD)
	GROSSO ERNEST J DR OPTMTRST
	QUINONES RAY JR
9225	CARLTON OAKS PLAZA SANTEE LIBRARY
	DESAI PUSHPA MD
	DOSIK PAUL H DDSS SANTEE FAMILYDENTISTRY
	EARL & BARBARAS VILLAGE INN
	EL RANCHITO TACO SHOP
	FPA SANTEE FAMILY CARE CENTER
	GABELA JORGE MD
	HUNGRY HOWIES PIZZA & SUBS

CARLTON HILLS BLVD 1999 (Cont'd)

9225	LEHOE MD
	MARTINEZ SYLKIA MD
	PODELL ROSS MD
	POSITIVE CONNECTION
	SANTEE FAMILY DENTISTRY PAUL H DOSIK DDS
	TARANTINO SALVATORE MD
9251	SEVEN ELEVEN FOOD STORES A DIVISION OF THE SOUTHLAND C
	STORES
9292	POLAR ICE CREAM & YOGURT
9302	BRENES RODERICK DVM
	MISSION CARLTON VETERINARY HOSPITAL
9307	COBURN HEARING ASSOCIATES
	DESIGNS & STYLES 2001
	DIAMANTE
	HOMETOWN REALTORS
	HOMETOWN REALTORS PROP MANAGEMENT MARGIE STEWART
	HOMETOWN REALTORS PROPERTY MANAGEMENT MARGIE STEWART
	HOWLAND BILL HOMETOWN REALTORS
	JERRY DIXON
	KERBIS & NATHANSON CPA
	NATHANSON BRIAN S CPA
	NEISS DANIEL L REALTORS
	NGUYEN THERESA AGT
	OCCUPANT UNKNOWN
	REMAX
	REMAX HOMETOWN REALTOR JULIE WILLMAN
	STATE FARM INSURANCE COMPANIES AGENTS
	STEWART BRIAN J REALTOR
	STEWART MARGIE PROPERTY MANAGEMENT
	WHALEN GLORIA REALTOR
9308	BARKER DAVID K DC
	INLAND DOCTORS SPEAKERS BUR
9320	OCCUPANT UNKNOWN
	THOMAS INGRAM
9321	JIM HILL
9328	MARTHA DAVIDSON
9329	OCCUPANT UNKNOWN
	SHAWN HOWARD
9335	MARK WATKINS
9336	ERIKA ESTRADA
9343	DENISE VANONI
	OCCUPANT UNKNOWN
9344	LEONILA BRINKER
9351	OCCUPANT UNKNOWN
9352	EUGENE BOTTICELLI
9359	OCCUPANT UNKNOWN
	VERNON BREWER

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 1999

9200 CARLTON OAKS COUNTRY CLUB
INTERNATIONAL GOLF SCHOOL
OCCUPANT UNKNOWN
REINMUTH DEAN SCHOOL OF GOLF
9225 W GEORGE

Target Street	Cross Street	Source
-	✓	Cole Information Services

CARLTON HILLS BLVD 1995

8926	FORNACA FAMILY BAKERY
8928	CUISINE FACTORY SAN DIEGO
8929	VIDEO 99
8933	GIANT NEW YORK PIZZA 8
	NEW YORK GIANT PIZZA 8
8936	SANTEE PET HOSPITAL
8939	REBECAS ALTERATIONS
8943	ROYALE BEAUTY SHOP
8947	CAROLS
	HAIR & NOW
	SCALZITTI, AUGUST
8951	HOLLEY, BARDARA
	TEDDYS DOG HOUSE
8954	MARILYN P SMITH DC
	SMITH CHIROPRACTIC GROUP INC
	THOMAS L SMITH DC
8959	CARLTON HILLS LIQUOR
8964	BRADLEY K SILVA DDS
	GERALD E SISSON DDS
	JOHN E HOSS DDS
8967	GTM DISCOUNT GENERAL STORE
	TRUE VALUE HARDWARE
9016	BOARDMAN, STEVEN
	CHANDLER, DAWN
	DELCARMEN, JOSE J
	LOPEZ, GREGORI
9025	BERMUDES ARCHITECTS
	ERNEST J GROSSO OD
	FARMERS INSURANCE GROUP
	JONES TAYLOR MARLYS AGENCY
9205	FADDEN, EVA
9225	BEAUTY SPA & SUPPLY
	BLUE TUB LAUNDRY & CLEANERS
	CARLTON SANTEE CORP
	EARL & BARBARAS VILLAGE INN
	EL RANCHITO TACO SHOP
	INMAN, CHARLES
	KARIN PACKER
	KERBIS & NATHANSON
	LEDBETTER LIQUOR & DELI
	LEUNG, J
	MISSION FEDERAL CREDIT UNION
	SANTEE FAMILY DENTISTRY
	SANTEE PUBLIC LIBRARY
	SANTEE VFW POST 9327
	VELODYNAMICS A BICYCLE STORE
9251	7 ELEVEN FOOD STORE
9302	SANTEE CONNECTION
9307	BILL HOWLAND HOMETOWN REALTORS
	COBURN HEARING ASSOC

CARLTON HILLS BLVD 1995 (Cont'd)

9307	DESIGNS & STYLES 2001
	HOMETOWN REALTORS
	INTERIOR PROTECTOR
	STATE FARM INSURANCE
9308	BARKER CHIROPRACTIC CLINIC
9321	GRAHAM, KENNY
9328	DAVIDSON, C R
9329	OCCUPANT UNKNOWNN
9335	METCALF, JOHN R
9336	OCCUPANT UNKNOWNN
9343	FANSLER, VICTOR C
9344	BRINKER, LEONILA S
9351	OCCUPANT UNKNOWNN
9352	BOTTICELLI, EUGENE
9359	BREWER, VERNON D
9360	OCCUPANT UNKNOWNN

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 1995

9200 CARLTON OAKS COUNTRY CLUB

Target Street	Cross Street	Source
-	✔	Cole Information Services

CARLTON HILLS BLVD 1992

8926	FORNACA FAMILY BKRY
8928	J CS NATURAL BAKERY
	WILD B GUFFEY CTRNG
8929	VIDEO 99
8933	GIANT NY PIZZA 8
8936	SANTEE PET HOSPITAL
	ZEICU, PAVEL
8943	ROYAL BEAUTY SHOP
8947	CAROLS
	HAIR&NOW
8951	TEDDYS DOG HOUSE
8954	SMITH THOMAS L DC
	TUTHILL ALAN R DC
8959	CARLTON HLS LIQUOR
8963	TRUE VALUE HARDWARE
8964	SILVA BRADLEY K DDS
	SPECTRUM DNTL CRMCS
8967	G T M DSCNT GENL ST
9016	CRUZ, BENIGNO
	HINKEL, PHILLIP C
	MCGLONE, WILLARD
	SANCHEZ, ALFREDO
9025	BERMUDES ARCHITECTS
	GROSSO ERNEST J DR
	JONES MARLYS TAYLOR
	JONES, MARLYS T
	QUINONES RAY JR
	QUINONES, RAY JR
	SULLIVAN B INS AGCY
9225	BEAUTY SPA&SUPPLY
	BLUE TUB LAUNDRY
	CARLTON OAKS BIKE
	DOSIK PAUL H DDS
	DOSIK, PAUL H
	EL RANCHITO TACO SH
	GREAT HAIR DSGNRS
	LEDBETTER LQR DELI
	MISSN FED CREDIT UN
	NATHANSON BRIAN CPA
	NEWLAND CA
	PACKER KARIN
	PACKER, KARIN
	SANTANTEN JOLENE
	SCHULTZ BONNY
	SCHULTZ, BONNY
	SD CO LBRY BRANCH
	TRANSAM FNCL SERV
	VFW POST 9327
	VILLAGE INN
9302	PROFSNL CMNTY SERV

CARLTON HILLS BLVD 1992 (Cont'd)

9307	COBURN HEARING ASC
	DESIGNS&STYLES 2001
	HOMETOWN REALTORS
	HOWLAND BILL REALTR
	INTERIOR PROTECTOR
	REBECAS ALTERATIONS
	SEIDNER BERNIE
9308	BARKER CHIRPRACTIC
9328	DAVIDSON, C R
9359	BREWER, VERNON D

Target Street	Cross Street	Source
✔	-	Cole Information Services

INWOOD DR 1992

9200 CARLTON OAKS CLUB

Target Street	Cross Street	Source
-	✔	Haines Criss-Cross Directory

CARLTON HILLS BLVD 1985

8955	XXXX	00	
8959	CARLTON HILLS LIQUR	448-5579	
8960	XXXX	00	
8962	XXXX	00	
8963	FARES REXALL DRUGS	448-4545	
8964	BARNARD JAS R DDS	449-0630	
	BERNARD JAMES R DDS	449-0630	
	HOSS JOHN E DDS	449-0630	
	SANTEE ASSOC DENT	449-0631	3
	SISSON GERALD E DDS	449-0630	
8967	XXXX	00	
9009	XXXX	00	
9016	CARLTON ARMS		
9	BENEDICT E	448-7900	8
	CARPENTER JOHN	449-6652	+5
	FINCHER N L	562-1730	4
	GILLILAND WM H	449-6601	2
	HOFF WM R SR	562-7489	4
13	KEITH RON	562-6957	0
	LOAR MELISSA	449-3183	4
	MCKEE EDIE	562-7406	+5
	NUTE C C	562-3085	4
10	WADDELL JACK	448-2408	
	WATSON EDW M	449-6398	+5
9016			
9225	CARLTON OAK LIQUOR	449-5237	2
	CARLTON OAKS PLAZA	448-8514	4
	DOSIK PAUL H DDS	448-6396	0
	EARL&BARBARAS INN	449-7079	4
	FARGOS BARBEQUE	562-8060	3
	FLORAL INSPRIRATION	449-6886	+5
	KARINS HAIR STUDIO	562-6578	1
	SANTEE FMLY DNSTRY	448-6396	1
	SANTEE VFW PST 9327	448-9682	4
	VELODYNAMICS	258-1120	+5
	VILLAGE INN	449-7079	4
9251	SEVEN 11 FOOD 13661	449-5573	
9292	CARLTON OAKS TEXACO	449-6613	1
9302	CRISIS HOUSE INC	449-8382	1
	SANTEE CONNECTION	449-8382	1
9307	BRADY TIMOTHY J	440-8502	+5
	DESIGNS&STYLES2001	562-9311	3
	DIGITAL WIZARDS INC	449-1281	+5
	HOWLAND BILL REALTR	562-4300	0
	INTL REL EST NETWRK	562-4300	0
	SEIDNER BERNIE	449-6500	2
	STATE FARM INS CO	449-6500	
9308	BARKER CHIRPRACTIC	449-1601	
	BARKER CHRPRCTC CLN	449-1601	
	BARKER DAVID K DC	449-1601	
	BLAKELY DAVID C DC	449-1601	
	CROUCH ROBERT DC	449-1601	+5
	JONES DONALD W DC	449-1601	4
9320	XXXX	00	
9321	SUMRALL EILEEN K	448-1887	
9325	XXXX	00	
9328	DAVIDSON CLARENCE R	448-4762	

Target Street	Cross Street	Source
✔	-	Haines Criss-Cross Directory

INWOOD DR 1985



INWOOD DR 92071
SANTEE

9200	CARLTON OAKS LODGE	448-8500	
	LUDWIG KIRK	449-9236	2
9225	LESTER RICHARD E	448-1867	
	★ 1 BUS	2 RES	0 NEW

San Diego River Trail - Carlton Oaks Segment

9200 Inwood Avenue

Santee, CA 92071

Inquiry Number: 4779368.1

November 14, 2016

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

11/14/16

Site Name:

San Diego River Trail - Carlton
9200 Inwood Avenue
Santee, CA 92071
EDR Inquiry # 4779368.1

Client Name:

IWS Environmental
5211 Hartford Way
Westminster, CA 92683
Contact: Jim Bunck

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # A388-4E39-9362

PO # NA

Project 16-1108

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: A388-4E39-9362

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Appendix C

Regulatory Records Documentation (with EDR Database Searches)

Appendix D

DEH Records

Request # _____

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858) 505-6700 FAX (858) 505-6848
www.sdcdeh.org

PUBLIC RECORDS REQUEST FOR THE SITE ASSESSMENT AND MITIGATION (SAM) PROGRAM AND HAZARDOUS MATERIALS DIVISION (HMD)

Requestor Name: Jim Bunck **E-Mail:** jim@iwsenvironmental.com

Phone: (714) 893-614 **FAX:** (714) 893-135

Company Name: IWS Environmental

Mailing Address: 5211 Hartford Way, Westminster, CA

(You may attach a business card/overprint with business card if preferred)

Additional information may be accessed from the DEH website, www.sdcdeh.org. Fax or email your completed form to the Public Records Program at (858) 505-6848 or deh.publicrecords@sdcounty.ca.gov. The following information is required. Separate forms are needed for each address or parcel number.

9200 Inwood Drive, Santee, CA 92071 **or** _____

Exact Address (Street, City and Zip Code) Assessor Parcel Number

Optional information (establishment permit number, business name, etc.):Carlton Oaks Country Club

Please indicate the purpose of your search by checking all that apply:

☒ Contaminated Property Investigation(s) (SAM Cases) ☐ Monitoring Well Files
☒ SAM Closure Letter/Report
☒ Hazardous Materials Permit & Underground Storage Tank Files (HMD/UST)
☐ Other (specify):_____

OFFICE USE ONLY BELOW THIS LINE

Files reviewed by: _____ of _____ Date: _____

Files copied for: _____ of _____ Date: _____

Request cancelled by: _____ Date: _____

Photocopies _____ Cost _____ Picked up/mailed on _____ By _____

A search for DEH records checked above has been conducted and the following apply:

☐ SAM files for the permit number(s) listed below are available.
#_____ #_____ #_____ #_____ #_____

☐ HMD/UST files for the permit number(s) listed below are available.
#_____ #_____ #_____ #_____ #_____

☐ Original records were purged.
#_____ #_____ #_____ #_____ #_____

☐ No SAM/HMD/UST records were found for the address/APN you requested.

_____ _____
Signature - DEH Representative Date

DEH complies fully with the California Public Records Act and the Federal Freedom of Information Act. Please be advised that photocopy and/or scanned file fees may apply.

HAZARDOUS MATERIALS MANAGEMENT DIVISION
UNDERGROUND TANK REMOVAL/CLOSURE REPORT

FIRE AGENCY PRESENT? ☑ YES ☐ NO
PERMIT NO. _____
DEPT. _____
% L.E.L. _____

ESTABLISHMENT # H20821 PLAN CHECK # AT2334 T2296

SITE NAME CARLTON OAKS LODGE (COUNTRY CLUB) PHONE (619) 448-0753

SITE ADDRESS 9200 INWOOD DRIVE CITY/ ZIP CODE SANTEE 92071

CONTRACTOR ANGUS ASPHALT INC PHONE _____

NUMBER OF TANKS 1 ☑ REMOVAL ☐ CLOSURE IN PLACE

					REMARKS:
TANK EDP NUMBER	001				
U/L TAG NUMBER	#A39002	DESTROYED	1947		
CAPACITY (GALS)	1000				
MATERIAL STORED	U/L GASOLINE				
DECONTAMINATION?	YES BY USA #907 89602				
MANIFEST AVAILABLE?	TO D.K				
% LEL (CGI READING)	0%				
DRY ICE/OTHER (AMT)	15				
TANK CONDITION	STEEL TANK.	HEAVY	PITTING/	HEAVY CORROSION, ~6 HOLES	
BACKFILL SOIL TYPE	SILTY BROWN SAND.		✓	NOTED ALONG SEAMS + ON	
BACKFILL CONDITION	MODERATE ODOR/	SLIGHT-MODERATE DISC.		BOTTOM OF TANK. (~1/8-1/2 INCH	
NATIVE SOIL TYPE	FINE-MEDIUM BROWN SAND			IN DIAMETER).	
NATIVE CONDITION	MODERATE DISCOLORATION/MODERATE ODOR				
EXCAVATION ODORS?	HEAVY - SLIGHT - MODERATE				
STOCKPILE ODORS?	YES - MODERATE				
PONDED PRODUCT?	WATER: GROUNDWATER AT 6' OFF				
PIPELINE LEAK?	NOT OBSERVED				
REINSPECTION REQUIRED?	NO				

NOTICE: You are hereby notified that on 4/22/92, a Hazardous Materials Specialist conducted an inspection for the closure of ONE hazardous substance underground storage tanks. A summary of the conditions follows:

☑ A determination of this site's status is pending receipt of Laboratory Analyses Results for samples taken this date. Results must be submitted within 30 days. To avoid delays, have the Laboratory send a copy of the results directly to JOHANNA BARRY (print) of the (HMMD) see address below.

☐ Contamination of the excavation area has been noted by observations made during the tank removal this date. **BEGIN SITE ASSESSMENT PHASE**-(See reverse for details).

The Laboratory results have been reviewed by _____
(of the HMMD) on / / and indicate the following:
☐ NO FURTHER ACTION IS REQUIRED. 5/6/92 JBV
☒ **BEGIN SITE ASSESSMENT PHASE** (See attached information).
Phone Contact _____ Date Form was Mailed / /

Received By _____

Printed Name _____

Phone Number _____

(HMMD COPY)

Johanna Barry
Hazardous Materials Specialist
County of San Diego
Department of Health Services
HMMD - P. O. Box 85261
San Diego, CA 92138-5261
(619) 338-2222

DHS:HM-916 (10/89)

Type(s) of hazardous substance(s) released: GASOLINE (IF ANY)

Is hazardous material ponded? NO What is estimated amount? —

Is amount of hazardous substance release known? — Estimated amount? —

What is estimated depth to ground water below the site? 6 feet

Is site located in a beneficial use area? YES

SOIL CONDITIONS:

Is backfill discolored? YES Estimated amount ____

Is backfill saturated? NO Estimated amount ____

Is native soil stained? YES Estimated amount ____

Is native soil saturated? NO Estimated amount ____

Describe native soil type(s) FINE TO MEDIUM BROWN SAND

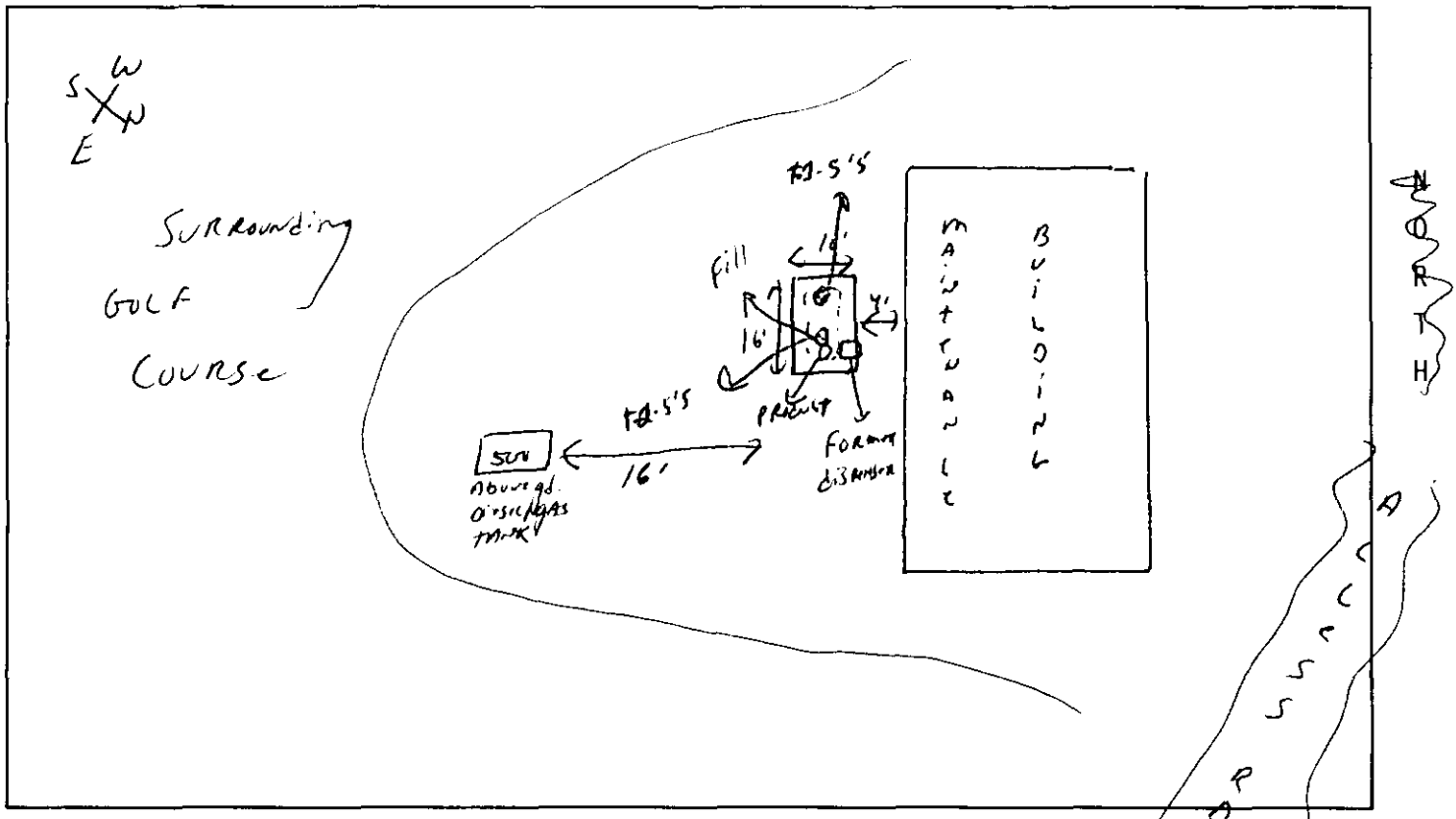
Condition of tank(s) (holes, corrosion, wrapping, seams) STEEL TANK. HEAVY CORROSION / HEAVY PITTING. ~6 HOLES LOCATED ALONG BOTTOM + AT SEAMS (~1/8-1/2 INCH IN DIAM)

Piping leak location NOT OBSERVED

Nearby water wells or surface waters? gd WATER AT ~6'0 FT

Any known underground vaults, utilities or basements nearby? NO

FURTHER COMMENTS: TANK INSTALLED 1947. IN USE UNTIL REMOVAL. SUCTION. SAMPLES TAKEN SLIGHTLY ABOVE gd WATER (AT ~5.5' FT). GROUNDWATER AT ~6.0' FT. BOTTOM OF TANK AT ~6.0' FT.



(HMMD) **PLOT PLAN** EST. # H

DHS:HM-916 (10/89)

G1 A3

FIELD NOTES

Date: _____ H _____

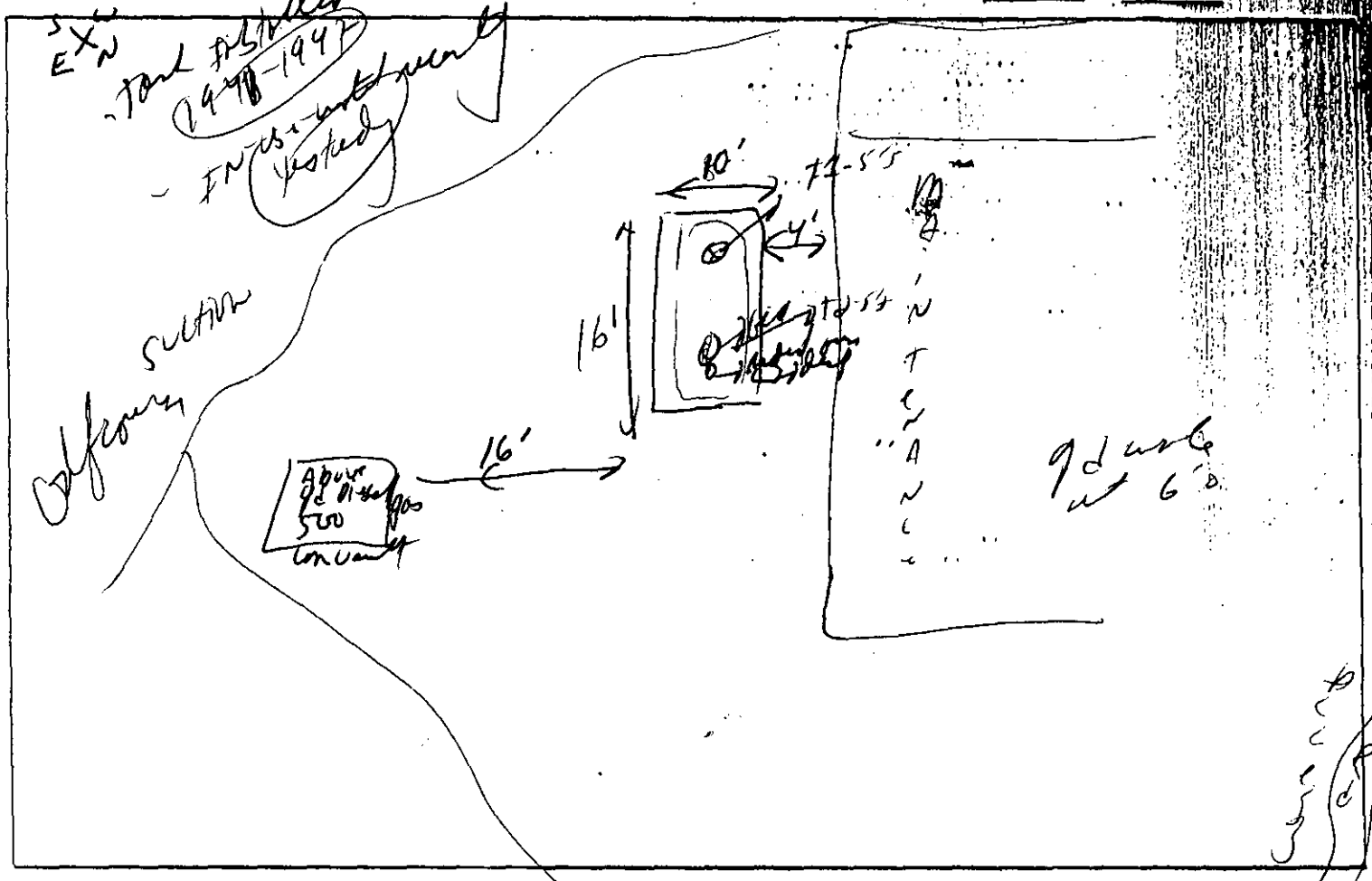
Tank(s) last used: _____ AT/NT _____

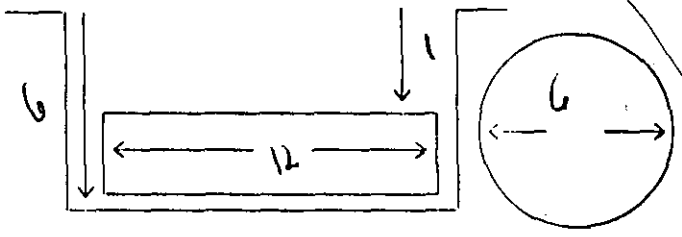
Approx. age of tank(s): _____

Tank(s) destination: _____

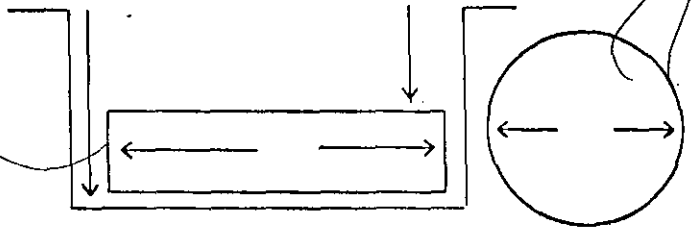
Manifest #: _____ Gallons: _____ to: _____

Decontamination by: _____ lbs. dry ice: (1) _____ (2) _____ (3) _____ (4) _____

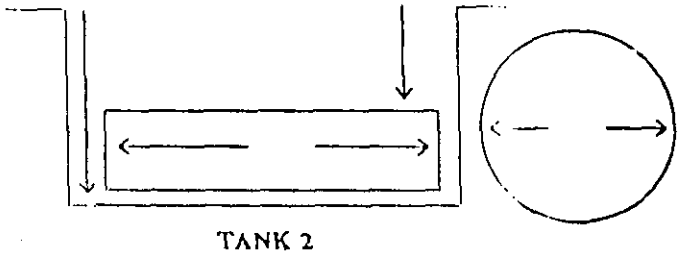




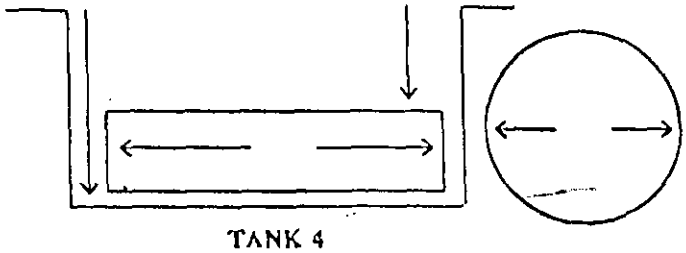
TANK 1



TANK 3



TANK 2



TANK 4



CARLTON OAKS
LODGE & COUNTRY CLUB
8525 SUNWOOD DR.
SANTEE CA 4/23/92



CARLTON OAKS
LODGE & COUNTRY CLUB
8525 SUNWOOD DR.
SANTEE CA 4/23/92



CARLTON OAKS
LODGE & COUNTRY CLUB
8525 SUNWOOD DR.
SANTEE CA 4/23/92



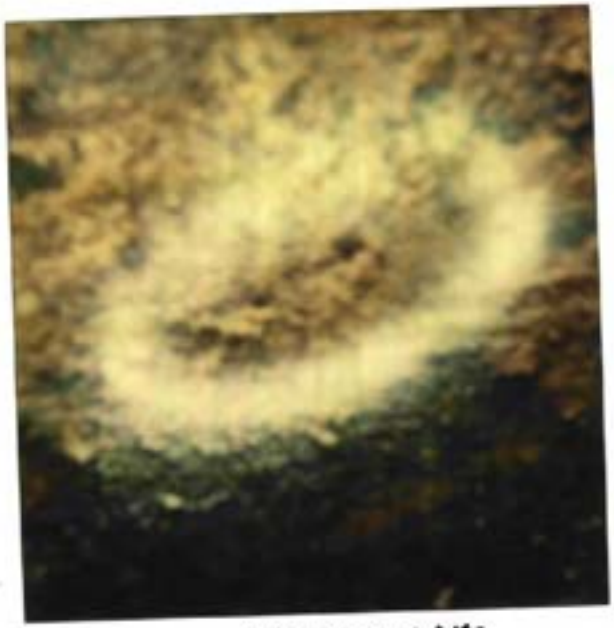
CARLTON OAKS
LODGE & COUNTRY CLUB
8525 SUNWOOD DR.
SANTEE CA 4/23/92



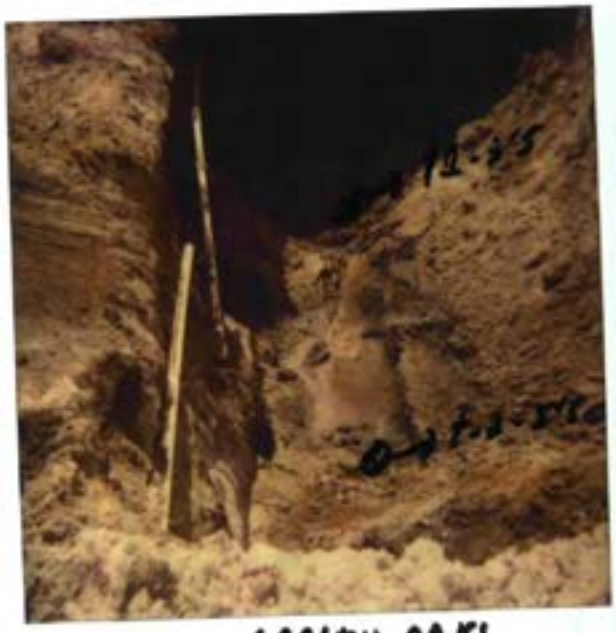
CARLTON OAKS
LODGE & COUNTRY CLUB
9205 JOHNSON DR.
SANTEE CA 4/22/93



CARLTON OAKS
LODGE & COUNTRY CLUB
9205 JOHNSON DR.
SANTEE CA 4/22/93



CARLTON OAKS
LODGE & COUNTRY CLUB
9205 JOHNSON DR.
SANTEE CA 4/22/93



CARLTON OAKS
LODGE & COUNTRY CLUB
9205 JOHNSON DR.
SANTEE CA 4/22/93

COUNTY OF SAN DIEGO

HAZARDOUS MATERIALS MANAGEMENT DIVISION

UNDERGROUND HAZARDOUS MATERIALS STORAGE TANK FACILITY

PERMIT APPLICATION

PART I

GENERAL PROJECT INFORMATION

FOR HMMD USE
EST#: H20821
PLAN CH#: AT2334
DATE RECEIVED: 7/12/91
FEE PAID: $265.00
PLAN APPROVAL: 7/15/91
HYDRO UNIT: 9.2
BENEF. USE: gw

A. SITE ADDRESS: 9200 INWOOD DR City Santee Zip 92071

B. PROPERTY OWNER:
Assessors Parcel No. 383-071-02
Company Eastern Country Clubs INC. Contact CRAIG ZELLERS
Mailing Address 9200 INWOOD DR. City Santee Zip 92071
Phone (619) 448-0453
24 Hr. Emergency Contact CRAIG ZELLERS Phone (619) 448-0453

C. TANK OPERATOR:
Company Carlton Oaks Country Club Contact CRAIG ZELLERS
Mailing Address 9200 INWOOD DR. City Santee Zip 92071
Phone (619) 448-0453
24 Hr. Emergency Contact CRAIG ZELLERS Phone (619) 448-0453

D. CONTRACTOR:
Primary Contractor ANGUS ASPHALT INC. Contact Scott Taylor
Mailing Address PO Box 711539 City Santee Zip 92072-1539
Phone (619) 562-8201
State Contractor License CALIFORNIA NO 523300
Worker's Compensation Insurance Company STATE FUND

E. APPLICATION SUBMITTAL, PLAN APPROVAL, PERMIT ISSUANCE, AND REQUIRED INSPECTIONS

Submit three (3) copies of this application package, including plan drawings, with the required fee to the Department of Health Services, Hazardous Materials Management Division, 1255 Imperial Ave., San Diego, CA or mail to P.O. Box 85261, San Diego, CA 92138-5261. Checks should be made payable to the County of San Diego.

A permit will be issued by the HMMD upon review and approval of the application and plans. The required fees must be submitted with the application package. Information in addition to that presented in the application package may be needed in order to obtain final approval. No work is to begin on the proposed project until a permit has been issued. The required inspections cannot be scheduled until a permit is issued.

Once the permit has been issued, it is the responsibility of the permittee to notify the HMMD at least two (2) working days in advance to schedule each required inspection.

Construction stages at which inspections are required are indicated in each subpart of this application form (i.e., Part II,III IV, and V).

QUALITY ASSURANCE LABORATORY
6605 NANCY RIDGE DRIVE
SAN DIEGO, CALIFORNIA 92121
(619) 552-3636

RECEIVED
APR 29 11 06 AM '92

ANGUS ASPHALT, INC.
ATTN: SCOTT TAYLOR
P.O. BOX 711539
SANTEE, CA 92072-1539

DATE OF REPORT	APRIL 28, 1992
DATE RECEIVED	APRIL 23, 1992
SAMPLING DATE	APRIL 22, 1992
DATE OF FINAL REVIEW	APRIL 27, 1992
ANALYZED BY	MC
SAMPLE TYPE	2 SOIL
PROJECT NAME	CARLTON OAKS LODGE & COUNTRY CLUB
P.O. NUMBER	9789
JOB NUMBER	42-029

ANALYSES RESULTS

LOG NUMBER	SAMPLE ID	ANALYSIS: TPH PREP/ANALYSIS 3550 METHOD: DHS + UNITS: MG/KG	DF
7237-92D	T-1-5'5	*675	1
7238-92D	T-2-5'5	**843	10

TPH - TOTAL PETROLEUM HYDROCARBONS

DHS - RECOMMENDED PROCEDURE FROM LEAKING UNDERGROUND FUEL TANK FIELD MANUAL, MAY 1988

* TOTAL PETROLEUM HYDROCARBON ANALYSIS RESULTING IN HYDROCARBONS OF THE RANGE C10-C23. SAMPLE QUANTITATED AGAINST DIESEL.

** TOTAL PETROLEUM HYDROCARBON ANALYSIS RESULTING IN HYDROCARBONS OF THE RANGE C4-C12. SAMPLE QUANTITATED AGAINST GASOLINE.

+ EXTRACTABLES

DF = DILUTION FACTOR. THE DETECTION LIMITS AND ANALYSES RESULTS WERE CORRECTED ACCORDINGLY.

PETER SHEN
LABORATORY DIRECTOR

PS/bn

QUALITY ASSURANCE LABORATORY
QUALITY CONTROL DATA REPORT

APRIL 28, 1992

ANGUS ASPHALT, INC.
LOG #7237-92D THROUGH 7238-92D

DATE EXTRACTED: APRIL 24, 1992

DATE ANALYZED: APRIL 24, 1992

ANALYSES	ANALYSIS METHOD	LCS % RECOVERY	SPIKE %RECOVERY	DUPLICATE RPD
TPH	3550/DHS EXT	103%	95%	0%

LISA MACCLELLAN
QA/QC DIRECTOR

QUALITY CONTROL TERMINOLOGY

•**LCS** - LABORATORY CONTROL SAMPLE. REPORTED AS % RECOVERY OF AN INDEPENDENT STANDARD CARRIED THROUGH ALL SAMPLE PREPARATION PROCEDURES TO VERIFY METHOD PERFORMANCE. ACCEPTABLE RANGE IS BASED ON HISTORICAL LABORATORY CONTROL DATA, BUT IS GENERALLY WITHIN A 80%-120% RECOVERY RANGE.
•**SPIKE** - ENVIRONMENTAL SAMPLE IS MATRIX SPIKED WITH METHOD COMPOUNDS AND % RECOVERY OF CONCENTRATION SPIKED INTO SAMPLE IS CALCULATED. REPORTED AS % RECOVERY. ACCEPTABLE RANGE FOR "NORMAL MATRIX SAMPLE" IS BASED ON HISTORICAL LABORATORY CONTROL DATA, BUT IS GENERALLY WITHIN A 75%-125% RECOVERY RANGE.
•**SURROGATES** - COMPOUNDS REPRESENTATIVE OF A GROUP OF COMPOUNDS. SURROGATES ARE SPIKED INTO ENVIRONMENTAL SAMPLES AND % RECOVERY OF CONCENTRATION SPIKED IS CALCULATED AND REPORTED. ACCEPTABLE RANGE VARIES DEPENDING ON SAMPLE MATRIX AND ANALYSIS METHOD.

JOB 42-029 PO#9789

County Of San Diego

Chain-of-Custody Record

DATE 4/22/93 PAGE 1 OF 1

Project Name CARLTON OAKS LODGE + COUNTRY CLUB
Reference 9205 JAMACHA BLVD SPRING VALLEY
Address TANK EXCAVATION

Samplers Signature Dick Reed

Lab To Be Used

SAMPLE NO.	DATE	TIME	LOCATION	TPH DOHS METHOD	TPH EPA 418.1	BTXE (8020/602)	HALOGENATED (8010/601)			SOLID	LIQUID	GRAB	COMPOSITE	NO. OF CONTAINERS	COMMENTS
T-1-5'S	4/22/93	2:15	SOUTH WEST END OF TANK EXCAVATION AT 5'1"	X						X		X		1	- GIVE CARBON 72378
T-2-5'S	4/22/93	2:20	NORTH WEST END OF TANK EXCAVATION AT 5'3	X						X		X		1	RANGE 7238
															- SAMPLES STORED
															BY HMMD
															INSPECTOR
															RECEIVED 22 APR 93 9:47

COPY OF LAB RESULTS MUST BE SENT TO:
County Of San Diego
Hazardous Materials
Management Division
P.O. Box 85261
San Diego, Ca 92138-5261

1 RELINQUISHED BY	Date	2 RELINQUISHED BY	Date	3 RELINQUISHED BY	Date
Signature: Rick Reando	4/22/93	Signature:		Signature:	
Printed Name: RICK REANDO	Time: 09:47	Printed Name:	Time:	Printed Name:	Time:
Company: ANGUS ASPHALT		Company:		Company:	
RECEIVED BY: April Collier	Date: 4/22/93	RECEIVED BY	Date	RECEIVED BY (LAB)	Date
Signature: APRIL COLLIER	Time: 09:47	Signature:	Time:	Signature:	Time:
Printed Name: QAL		Printed Name:		Printed Name:	
Company:		Company:		Company:	

2 TOTAL NO. OF CONTAINERS

Sample Conditions
Received On Ice (Yes/No)
Tape Seal Intact (Yes/No)

Special Shipment/Handling Or Storage Requirements:

Split Sample Location

Site Identification
H# 20821 AT# 2337
HMMD [illegible]

DHS:HM-999 (10/90) NCR

County of San Diego
Department of Health Services

MF

Environmental Business Solutions, Inc.

"Providing Economic Environmental Solutions to the Business Community"

TRANSMITTAL LETTER

TO: County of San Diego
Hazardous Materials Mgmt. Div.
P.O.Box 85261
San Diego, CA
92138-5261

DATE: 7-20-1992

JOB NO: E1021

LTR. NO.

ATTENTION: Ms. Johanna Barry

SUBJECT: Report Transmittal

ENCLOSED PLEASE FIND:

One Report Titled;

"Limited Site Assessment Report; Maintenance Facility

Carlton Oaks Country Club."

REMARKS:

SHOULD YOU HAVE ANY QUESTIONS, PLEASE FEEL FREE TO CALL ME.

RESPECTFULLY,
ENVIRONMENTAL BUSINESS SOLUTIONS, INC.

Dan Johnson
Principal

cc:

ENCLOSURES

8799 Balboa Avenue • Suite 290 • San Diego, California 92123 • Tel. (619) 571-5500 • Fax (619) 571-5357

Environmental Business Solutions, Inc.
"Providing Economic Environmental Solutions to the Business Community"

July 17, 1992
Project Number: 92E1021

Ms. Susan Reid
General Manager
Carlton Oaks Country Club
9200 Inwood Drive
Santee, CA 92071

RE: Limited Site Assessment Report - Maintenance Facility, Carlton Oaks Country Club
9200 Inwood Drive, Santee, CA 92071 (site)
H # 20821-001; T # 2296; AT # 2339

Dear Ms. Reid:

On June 19, 1992, Environmental Business Solutions, Inc. (EBS) observed soil excavation activities and collected representative soil samples for analytical testing at the referenced site. The excavations were performed to delineate the horizontal and vertical extent of hydrocarbon impacted soil in the vicinity of a recently removed gasoline underground storage tank. This letter presents a discussion of findings from this limited site assessment. The work described in this report was conducted by EBS in response to your request and authorization and in general accordance with Exhibit "1" to the Consulting Agreement fully executed on June 9, 1992.

BACKGROUND

It is our understanding that a 1,000 gallon gasoline underground storage tank (UST) was removed from the site on or about April 22, 1992. We also understand that the soil underneath the tank was sampled by a contractor, Angus Asphalt, under the direction of an inspector from the County of San Diego, Hazardous Materials Management Division (HMMD). The soil samples were submitted to a state certified hazardous waste laboratory, Quality Assurance Labs, under chain-of-custody procedures for analytical testing.

We understand from the client that two soil samples were tested for total petroleum hydrocarbons (TPH) from the gasoline tank excavation. We also understand that the TPH results for the soil samples were 675 milligrams/kilogram (mg/kg) for soil sample "T-1" collected from the excavation at 5.5' feet below grade ('bg) (T-1-5.5') and 843 mg/kg for soil sample "T-2" also collected from the excavation at approximately 5.5' bg (T-2-5.5') (Referred to on Figure 3 as T-1-5.5' and T-2-5.5'). Since these samples from the excavation have concentrations greater than the clean-up levels typically assigned to a beneficial groundwater area (such as this site), we understand that the HMMD has requested a site assessment be conducted at the site.

Site Setting

Site Identification

- Site Address: Carlton Oaks Country Club
  9200 Inwood Drive
  Santee, CA 92071

- Assessors Parcel No.: Not Available at time of report preparation
- Property Owner and Contact Person: Carlton Oaks Country Club
  c/o Ms. Susan Reid
  9200 Inwood Drive
  Santee, CA 92071
- Regulatory Action Level: Not established at this time

Topography / Geography

A review of the 1967 U.S.G.S. "La Mesa, California" 7.5' minute Quadrangle Map indicated that the site lies within the river course of the San Diego River. The intermittently flowing San Diego River slopes from east to west and then to the south near the historic site of the Mission Dam and Flume, approximately two miles east of the site. Mountainous terrain with elevations of up to approximately 800 to over 1,000 feet above mean sea level (MSL) lies to the northeast to northwest, and south to south-west of the site. The Santee Lakes Recreation Area lies to the north of the site. The approximate site elevation is 300 feet MSL. The generalized site location is illustrated on Figure 1, a color photocopy of a U.S.G.S. topographic map.

Geology/Soil

The region around the site is underlain by undifferentiated granitic rocks of the southern California batholith. This basement complex is unconformably overlain by sediments derived from tertiary and quaternary marine and non-marine sedimentary deposits. Those deposits have commonly been reworked to form alluvium and slopewash deposits.

The local geology beneath the site is interpreted to consist of an alluvium and slopewash mantle which at some undermined depth overlays a layer of weathered rock and crystalline bedrock.

The site soil is located within the sediments of the San Diego River Floodplain. As indicated on the attached trench logs T-1, T-2, T-3 and T-4, the soil directly beneath the site consists of silty sand (soil grade to 2.0' bg, silty clay (2.0' bg to 4.5' bg), silty sand (4.5' bg to 6.25' bg) and sand (6.25' bg to a depth greater than 7.0' bg). The soil types were classified by the procedures outlined in the United Soil Classification System. Refer to the attached Soil Classification Legend.

Hydrogeology

Upon review of a "Regional Hydrographic Basin Base Map" published by the San Diego County Planning Department, Cartographic Services Section (Map No. 88, August 1973), the site was interpreted to be located within the Coches Hydrographic Subarea (7.13) of the San Diego Hydrological Unit. Existing beneficial uses of groundwater for this sub area are reported to include: municipal, agriculture, and industrial service supply.

Groundwater was encountered at an approximate depth of 6' bg during the excavation activities conducted on June 19, 1992. The first encountered ground water beneath the site is interpreted

to be from an unconfined aquifer.

OBJECTIVE

The objective of the performed scope of services summarized in this report was to provide a preliminary assessment of the extent of the petroleum-hydrocarbon impacted soil in the former UST excavation.

SCOPE OF SERVICES

The scope of services included the following:

Phase I **Preparation of a Workplan and a Site and Limited Community Health and Safety Plan**

Phase II **Excavation and Sampling Activities**

Phase III **Data Evaluation, Report Preparation and Project Management**

The scope of services did not include an assessment of the possible impact to groundwater from a release of petroleum hydrocarbons at the site.

Preparation of a Workplan, and a Site and Limited Community Health and Safety Plan

EBS prepared and submitted a written workplan to Ms. Johanna Barry of the Site Assessment and Mitigation (SA/M) unit of the HMMD on June 17, 1992. The workplan described the field procedures to be utilized in the field investigation, including the type of laboratory analyses to be performed on the soil samples, and the soil sample collection method. Ms. Barry gave her verbal approval of the workplan on or about June 17, 1992, and written approval was received by EBS on June 24, 1992.

A health and safety plan for work conducted at the site and workers within the "exclusion" zone is required pursuant to the regulations found in 29 CFR Part 1910.120. As such, a health and safety plan was prepared which outlined potential chemical and physical hazards that might be encountered during the excavation operations in the former tank pit. The appropriate personal protective equipment and emergency response procedures for the site-specific chemical and physical hazards were detailed in this plan. EBS and contracted personnel involved with the proposed field work were required to review and sign this document in order to encourage proper health and safety practices.

As a part of the workplan a limited Community Health and Safety Plan (CHSP) was prepared. Pursuant to the CHSP, the perimeter of the work area was posted with a sign indicating the activities being undertaken, and the name and phone number of the worksite representatives who could answer questions regarding the site activities. Additionally, the downwind perimeter of the exclusion zone was periodically monitored using an organic vapor meter (OVM). At no time during the excavation activities were concentrations of organic vapors encountered that required control measures, as defined in the CHSP.

Field Activities

Soil Excavation and Sampling

As stated in the previously referenced workplan, Angus Asphalt, a contractor with the appropriate specialty license, was retained to excavate soil with a backhoe in the vicinity of the former 1,000 gallon UST. The purpose of the excavating activities was to collect soil samples for analysis, and to remove hydrocarbon-impacted soil from the vicinity of the former gasoline UST. Soil excavations were intended to extend to a maximum depth of approximately 7.0' to 8.0' bg, or to the field-interpreted saturated zone, whichever came first. Soil samples were collected based on field indications such as staining, odors and laboratory results.

On June 19, 1992 soil excavations began. Upon arrival at the site it was observed that the base of the excavation had caved to a depth of approximately 4.0' bg. The sloughed material was excavated to a depth of approximately 5.5' bg such that undisturbed native soil could be accessed for sampling.

In order to delineate the extent of gasoline impacted soil in the tank pit vicinity, soil samples were collected from four trenches (T-1, T-2, T-3 and T-4). Trench T-1 was excavated in the eastern tank pit area and in the approximate position of the HMMD (tank removal) soil sample T-2-5.5'. Trench T-1 was excavated to a depth of 7.0' bg such that sample 7031 could be collected vertically beneath the sample T-2-5.5'. Trench T-2 was excavated in the western tank pit area and in the approximate position of the HMMD (tank removal) soil sample T-1-5.5'. T-2 was excavated to a depth of 7.0' bg such that 7032 could be collected vertically beneath sample T-1-5.5'. Trench T-3 was excavated three feet south of the tank pit, where samples 7033 (5.0' bg) and 7034 (6.5' bg) were collected. Trench T-4 was excavated five feet west of the tank pit. Two samples were collected in this trench at 4.0' bg (7035) and 6.0' bg (7036). In all four trenches saturated soil was encountered at approximately 6.0' bg and ponded water terminated further vertical excavation.

Once these samples were analyzed by an on-site mobile laboratory, additional soil samples were collected from the tank pit to further delineate the hydrocarbon-impacted soil in the over-excavated tank pit. Sample 7037 was collected in the center of the tank pit at a depth of 5.5' bg. Sample 7038 (6.5' bg) and 7039 (5.5' bg) were collected along the over-excavated tank pit's northern edge. Sample 7040 (5.5' bg) was collected in the over-excavated tank pit's eastern edge. Sample 7041 (5.5' bg) was collected in the over excavated tank pit's western edge.

In order to attempt to confirm the type of petroleum hydrocarbons released into the former UST excavation, soil sample number 7037 was collected from the area between the two samples (T-1-5.5' and T-2-5.5') collected during the UST removal, and from a similar depth (5.5' bg). Sample number 7037 was analyzed using California Department of Health Services modified EPA Method Number 8015 using both a gasoline and a diesel standard. The laboratory results indicated that the carbon range detected was consistent with gasoline. In addition, soil sample 7037 was analyzed for benzene, toluene, ethylbenzene, and total xylenes, (BTEX) and organic lead, in general accordance with EPA Method Number 8020 and the Department of Health Services Method, respectively. The BTEX results are presented in Table 2 and the organic lead results are reported as not detected above the laboratory detection limit of 0.6 milligrams/kilogram.

Of all the soil samples collected and analyzed by Angus Asphalt during the UST removal and by

EBS personnel, during our field investigation, detectable concentrations of petroleum hydrocarbons were only reported in the original two samples (T-1-5.5' and T-2-5.5') during the UST removal and in sample number 7037. These samples were all collected from a similar depth of approximately 5.5' bg, just above the interpreted saturated zone (approximately 6.0' bg). Samples T-1-5.5' and T-2-5.5' are located approximately ten feet apart and sample number 7037 is located between them. Soil in the vicinity of these samples (as depicted on Figure 3) was excavated to an approximate depth of 7.0' bg, approximately 1.5 feet below these samples. Using sample number 7037 as a central point in the excavation, there are eight soil samples within approximately five to eight linear feet of distance that all have non-detectable concentrations of petroleum hydrocarbons. Samples 7031 and 7032 were collected from a depth of 7.0' bg, beneath the original approximate location of soil samples collected during the UST removal. Samples 7031 and 7032 both had non-detectable concentrations of petroleum hydrocarbons and these samples, in our opinion, are likely to be representative of the existing condition of the base of the UST excavation.

Laboratory test results of samples 7031, 7032, 7033, 7034, 7035, 7036, 7038, 7039, 7040, and 7041 reported TPH concentrations below the method detection limit of 10 ppm. In our judgement, these samples define the northern, southern, eastern, western and vertical extent of hydrocarbon-impacted soil. Using the above-referenced samples as "zero-lines," soil was over-excavated to these sample locations. The maintenance shed's foundation, located along the northern tank pit wall, prevented further soil removal in this area. The tank pit was over-excavated approximately two feet to the north, east and west and three feet to the south (Figure 3). In these areas, and in the former tank pit, soil was excavated to a depth of approximately 7.0' bg.

At no time during the excavation activities was ponded or free-floating petroleum product or a sheen observed on the groundwater in the excavation.

Soil Stockpile Management

Soil excavated from the former tank pit was placed in a stockpile located east of the excavation (Figure 2). Approximately 20 to 25 cubic yards of soil was stockpiled and left on site. In order to minimize fugitive emissions the stockpile was placed on and covered with visqueen.

Soil Sampling Procedures

Samples were collected from the backhoe bucket by gloved hand. Disposable gloves were used for the collection of each soil sample. Soil samples were tightly packed into laboratory-cleaned sample jars.

Soil samples were delivered to an on-site State certified mobile laboratory (Transglobal Environmental Geochemistry or TEG). Chain-of-custody procedures were utilized to document sample handling and transport and the chain-of-custody and laboratory report are presented as an attachment to this letter report. All soil samples were analyzed for TPH by modified EPA Method 8015. One sample was tested for benzene, toluene, ethlybenzene, and xylenes by EPA Method 8020. Additionally, one soil sample was analyzed for organic lead using the State Department of Health Services Method. Laboratory results are summarized in Tables 1 and 2.

Site Safety

Measures were taken to minimize the potential threat to community health and safety during the

course of this investigation. Site access was limited to individuals associated with this investigation. Although not anticipated to be a problem during the course of this investigation based on initial sample results, organic vapors were monitored periodically during the excavation activities with an OVM at the downwind perimeter of the work area. The OVM was located approximately four feet downwind of the excavation. The CHSP stipulated that if the total OVM reading exceeded 10 ppm, benzene-specific detector tubes were to be utilized. If OVM meter readings exceed 25 ppm, the excavation activities were to stopped and control measures such as covering exposed soil, altering excavation methods, or misting of the exposed soil with water would be utilized. At no time did the OVM meter reading exceed 10 ppm.

RESULTS

Soil Sample Test Results

Based on the laboratory results obtained during the UST removal at the site and field observations and laboratory results obtained from the current field investigation conducted by EBS, unsaturated soil remaining in and near the former UST excavation is not likely to contain concentrations of TPH above the laboratory detection limit.

Soil sample test results are presented on Tables 1 and 2. Laboratory reports including the chain-of-custody are attached.

CONCLUSION

Based on the data reviewed and obtained as a part of this investigation, including but not limited to laboratory results and field observations by an on-site geologist, current regulatory guidelines, and our professional experience, it is our professional judgement that:

- It is unlikely that the unsaturated soil remaining in and near the former UST excavation contains concentrations of TPH above the laboratory detection limit.

RECOMMENDATION

Based on the above data, discussion and conclusions, it is our recommendation that this report be submitted to the HMMD and RWQCB for review and comment and a meeting be scheduled with appropriate regulatory authorities to discuss the contents of this report relative to possible site closure.

We have enjoyed working with you on this important project. As always, if we may be of further assistance in any way, please do not hesitate to contact us.

Respectfully,
ENVIRONMENTAL BUSINESS SOLUTIONS, INC.

Daniel E. Johnson
Principal

Anderson M. Donan
Principal

Knoxie C. Delise (DEJ)
Knoxie C. Delise
Registered Geologist
No. 2118

cc: Ms. Johanna Barry, San Diego County HMMD
Mr. James Munch, RWQCB

TABLE 1

ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS BY
MODIFIED EPA METHOD 8015

Soil samples collected by Angus Asphalt, Inc. under HMMD direction on April 23, 1992 and analyzed by a state certified laboratory and as reported to Environmental Business Solutions, Inc. by the client:

Sample Number	Sample Location	Sample Depth	TPH Concentration
T-1-5.5'	Tank pit-West	5.5' bg	675 ppm
T-2-5.5'	Tank pit-East	5.5' bg	853 ppm

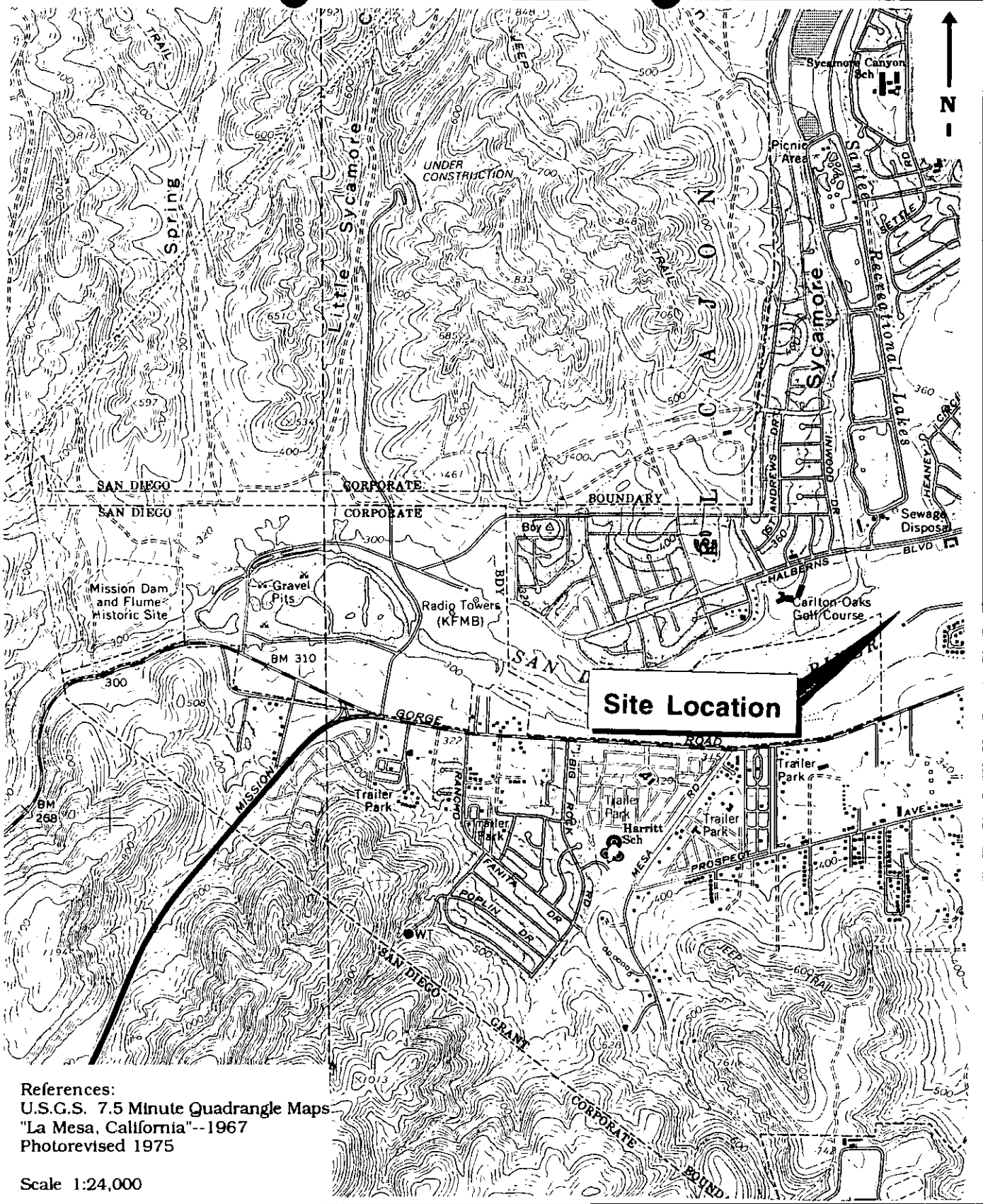
Soil samples were collected by Environmental Business Solutions, Inc. and analyzed by an on-site mobile laboratory, Transglobal Environmental Geochemistry, on June 16, 1992. The samples were analytically tested for TPH by gasoline/diesel modified EPA 8015:

Sample Number	Sample Location	Sample Depth	TPH Concentration
7031	T-1	7' bg	<10 ppm
7032	T-2	7' bg	<10 ppm
7033	T-3	5' bg	<10 ppm
7034	T-3	6.5' bg	<10 ppm
7035	T-4	4' bg	<10 ppm
7036	T-4	6 bg	<10 ppm
7037	Tank pit-Center	5.5' bg	1135 ppm
7037 (dup)	Tank pit-Center	5.5' bg	2070 ppm
7038	Tank pit-North	6.5' bg	<10 ppm
7039	Tank pit-Northwest	5.5' bg	<10 ppm
7040	Tank pit-East	5.5' bg	<10 ppm
7041	Tank pit-West	5.5' bg	<10 ppm

TABLE 2

ANALYTICAL RESULTS
BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
EPA METHOD 8020

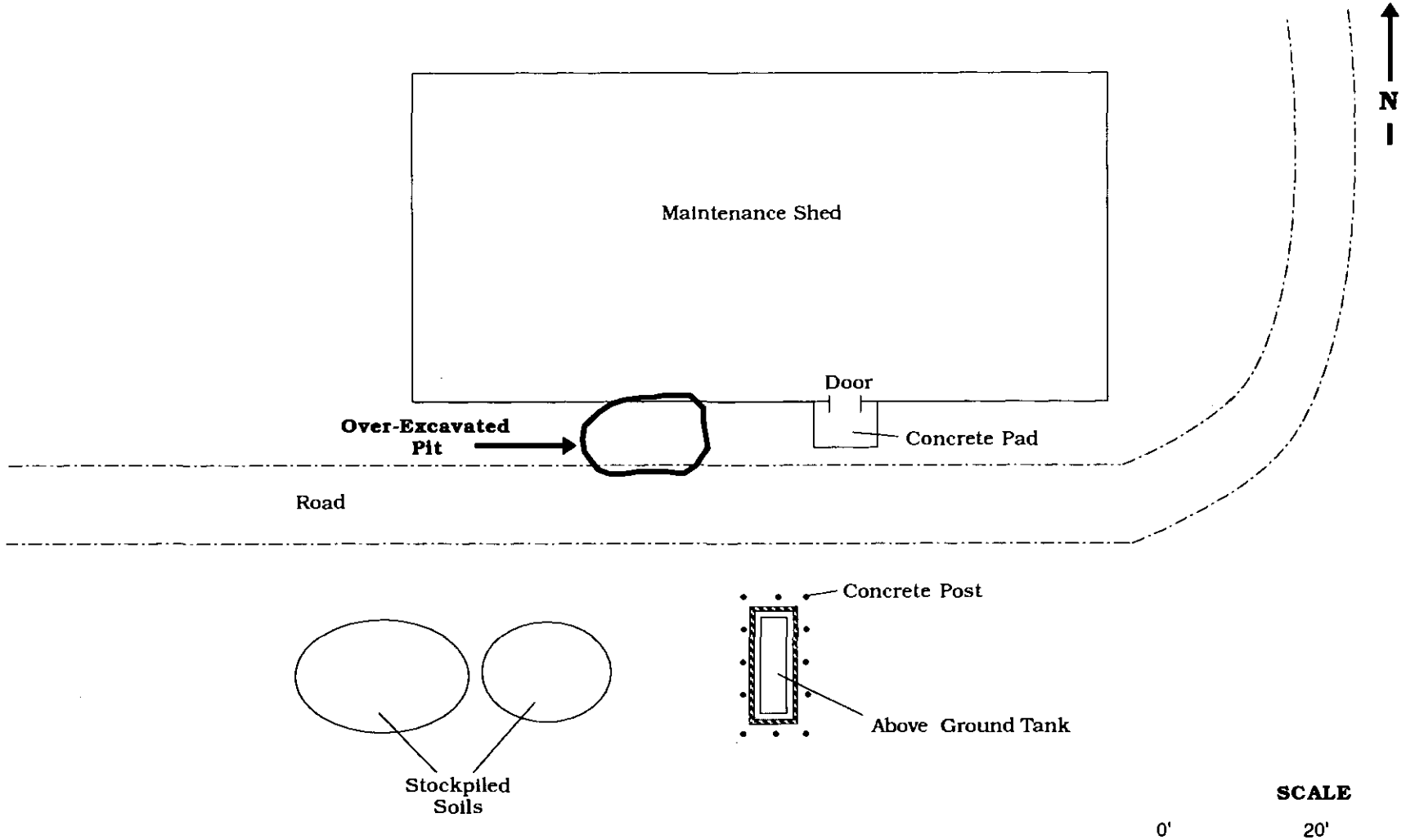
Sample No.	Location	Depth	Benzene	Toluene	Ethyl-benzene	Xylenes
7037	Tank pit-center	5.5' bg	2.23 ppm	9.68 ppm	6.03 ppm	32.99 ppm



References:
U.S.G.S. 7.5 Minute Quadrangle Maps
"La Mesa, California"--1967
Photorevised 1975

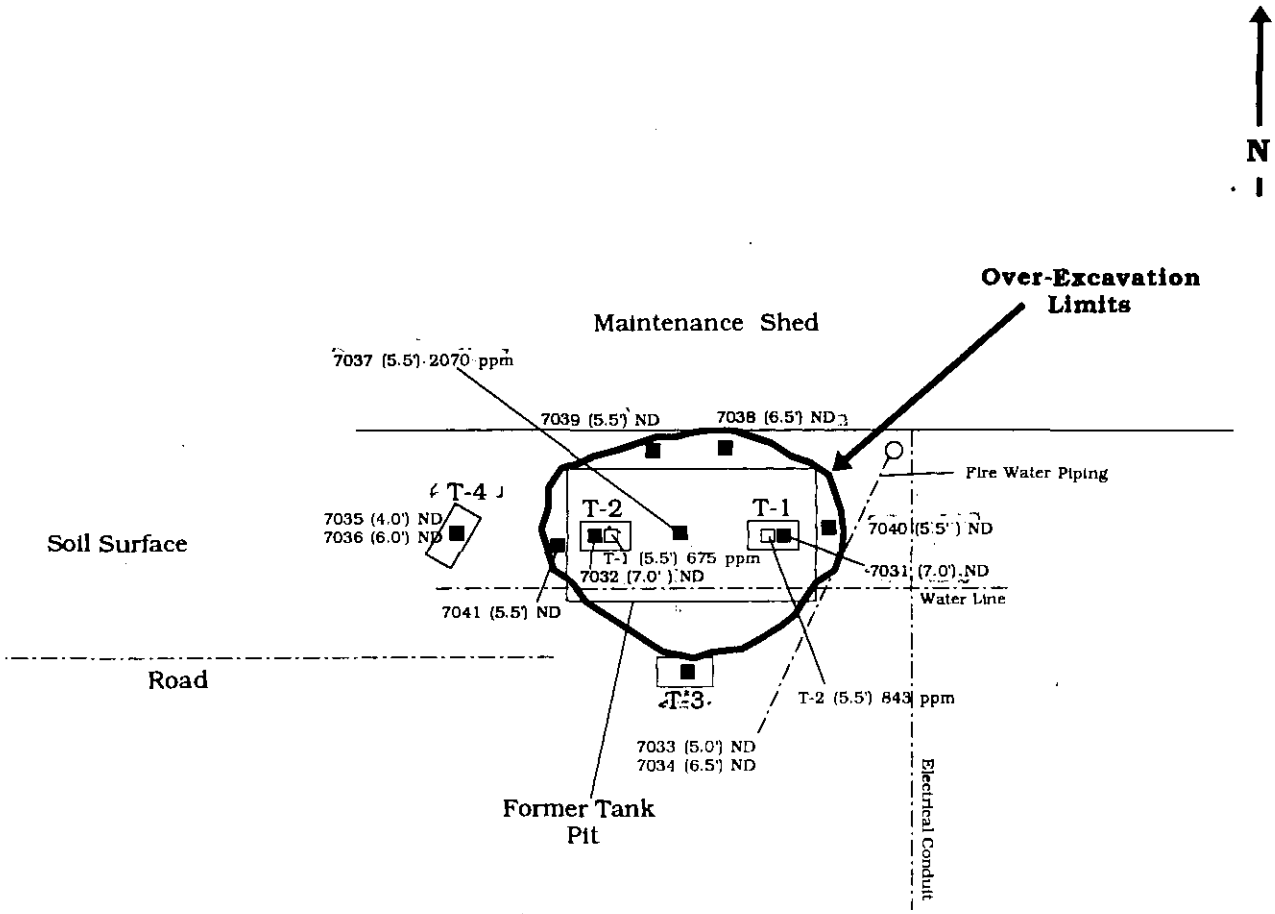
Scale 1:24,000

Environmental Business Solutions, Inc.	**Site Location Map** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 June 19, 1992	**Project No.** E1021 **Figure** 1



Disclaimer: This illustration is only an interpretation and is not intended to be an actual representation of the site's surface dimension. All locations and dimensions are approximate.

Environmental Business Solutions, Inc.	**Site Plan** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 June 19, 1992	**Project No.** **E1021**	**Figure** **2**



T-4 Trench Location

□T-1 (5.5') 675 ppm Soil Sample collected by Angus Asphalt Inc. under HMMD direction on April 23, 1992 and analyzed by certified laboratory. (Depth below grade) TPH in ppm.

■ 7031 (7.0') ND Soil Sample collected by EBS and analyzed by TEG on June 16, 1992.

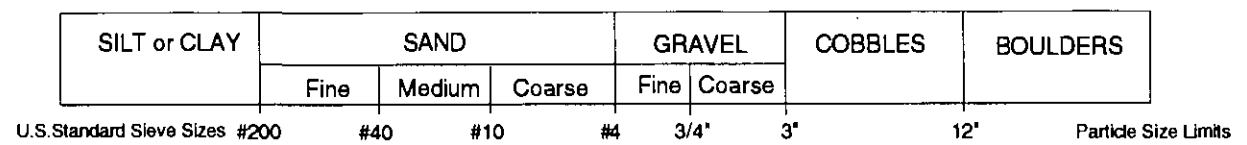
0' 10' 20'

(1 in.= 10 ft.)

Disclaimer: This illustration is only an interpretation and is not intended to be an actual representation of the site's surface dimensions. All locations and dimensions are approximate. Note: TPH concentrations are illustrared as measured by modified EPA Method 8015.

Environmental Business Solutions, Inc.	**Site Sample Plan** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 June 19, 1992	**Project No.** E1021 **Figure** 3

Major Soil Divisions			Group Symbol	Descriptions
Coarse Grained Soils (>50 % of material is larger than No. 200 sieve size.)	GRAVELS (>50 % of coarse fraction is larger than No. 4 sieve size.)	Clean Gravels (<5 % fines)	GW	Well graded (poorly sorted) gravels, gravel sand mixtures, little or no fines.
			GP	Poorly graded (well sorted) gravels or gravel-sand mixtures, little or no fines.
		Gravel With Fines (>5 % fines)	GM	Silty gravels, gravel-sand-clay mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS (>50 % of coarse fraction is smaller than No. 4 sieve size.)	Clean Sands (<5 % fines)	SW	Well graded (poorly sorted) sands or gravelly sands, little or no fines.
			SP	Poorly graded (well sorted) sands or gravelly sands, little or no fines.
		Sands With Fines (>5 % fines)	SM	Silty sands, sand-silt mixtures, plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
Fine Grained Soils (> 50 % of material is smaller than No. 200 sieve size.)	SILTS AND CLAYS (Liquid limit is <50 %)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit is >50 %)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
Highly Organic Soils			Pt	Peat and other highly organic soils.



Environmental Business Solutions, Inc.

Soil Classification Legend

(Adopted from the United Soil Classification Standard - USCS)

Environmental Business Solutions, Inc.

TRENCH LOG

Log No.: T-1

Client: Carlton Oaks Country Club	Job No.: E1021	Sheet: 1 of 1
Site: Carlton Oaks Country Club Maintenance Facility 9200 Inwood Drive, Santee, CA	Construction Company: Angus Asphalt Inc.	
EBS Rep: A.Donan, Project Manager		
Date Started: 6-19-92	Date Finished: 6-19-92	Excavation Equipment: John Deere 310C Backhoe

SAMPLE LOG			TRENCH LOG			
Sample Number	Sample Time	Lab Results (ppm)	Depth in Feet	Geologic Descripton (Soil type, color, grain, plasticity, density, moisture, odor, OVM value etc.)	USCS Symbol	Graphic Log
			0	Silty SAND, yellow brown, some plastic fines >5%.	SM	
			1			
			2			
			3	Silty CLAY, moderate dark yellowish brown, slight plasticity, moist, argillaceous, tree roots.	CL	
			4			
			5	Silty SAND, moderate yellow brown, argillaceous, > 5% fines, fine grained, moist.	SM	
			6			
7031	9:02am	ND	7	SAND, light brown, medium to coarse grained, well sorted, poorly graded, water saturated.	SP	
			8			
			9			
			10	Total trench depth at 7.0 ft. below grade. Trench terminated due to ponded water.		
			11			
			12			
			13	▼ Ponded Ground Water Depth Observed During Excavation Activities on 6/19/92.		
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			

Environmental Business Solutions, Inc.

TRENCH LOG

Log No.: T-2

Client: Carlton Oaks Country Club	Job No.: E1021	Sheet: 1 of 1
Site: Carlton Oaks Country Club Maintenance Facility 9200 Inwood Drive, Santee, CA	Construction Company: Angus Asphalt Inc.	
EBS Rep: A.Donan, Project Manager		
Date Started: 6-19-92	Date Finished: 6-19-92	Excavation Equipment: John Deere 310C Backhoe

SAMPLE LOG			TRENCH LOG			
Sample Number	Sample Time	Lab Results (ppm)	Depth in Feet	Geologic Description (Soil type, color, grain, plasticity, density, moisture, odor, OVM value etc.)	USCS Symbol	Graphic Log
			0	Silty SAND, yellow brown, some plastic fines >5%.	SM	
			1			
			2			
			3	Silty CLAY, moderate dark yellowish brown, slight plasticity, moist, argillaceous, tree roots.	CL	
			4			
			5	Silty SAND, moderate yellow brown, argillaceous, > 5% fines, fine grained, moist.	SM	
			6			
7032	9:24am	ND	7	SAND, light brown, medium to coarse grained, well sorted, poorly graded, water saturated.	SP	
			8			
			9			
			10	Total trench depth at 7.0 ft. below grade. Trench terminated due to ponded water.		
			11			
			12			
			13	▼ Ponded ground water depth observed during excavation activities on 6/19/92.		
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			

Environmental Business Solutions, Inc.

TRENCH LOG

Log No.: T-3

Client: Carlton Oaks Country Club

Job No.: E1021

Sheet: 1 of 1

Site: Carlton Oaks Country Club Maintenance Facility 9200 Inwood Drive, Santee, CA

Construction Company: Angus Asphalt Inc.

EBS Rep: A.Donan, Project Manager

Date Started: 6-19-92

Date Finished: 6-19-92

Excavation Equipment: John Deere 310C Backhoe

SAMPLE LOG			TRENCH LOG			
Sample Number	Sample Time	Lab Results (ppm)	Depth in Feet	Geologic Description (Soil type, color, grain, plasticity, density, moisture, odor, OVM value etc.)	USCS Symbol	Graphic Log
			0	Silty SAND, yellow brown, some plastic fines >5%.	SM	
			1			
			2			
			3	Silty CLAY, moderate dark yellowish brown, slight plasticity, moist, argillaceous, >5% fines, tree roots.	CL	
			4			
7033	10:25am	ND	5	Silty SAND, moderate yellow brown, argillaceous, > 5% fines, fine grained, moist.	SM	
			6			
7034	10:35am	ND	7	SAND, light brown, medium to coarse grained, well sorted, poorly graded, water saturated.	SP	
			8			
			9			
			10	Total trench depth at 7.0 ft. below grade. Trench terminated due to ponded water.		
			11			
			12			
			13	▼ Ponded ground water depth observed during excavation activities on 6/19/92.		
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			

Environmental Business Solutions, Inc.

TRENCH LOG

Log No.: T-4

Client: Carlton Oaks Country Club	Job No.: E1021	Sheet: 1 of 1
Site: Carlton Oaks Country Club Maintenance Facility 9200 Inwood Drive, Santee, CA	Construction Company: Angus Asphalt Inc.	
EBS Rep: A.Donan, Project Manager		
Date Started: 6-19-92	Date Finished: 6-19-92	Excavation Equipment: John Deere 310C Backhoe

SAMPLE LOG			TRENCH LOG			
Sample Number	Sample Time	Lab Results (ppm)	Depth in Feet	Geologic Description (Soil type, color, grain, plasticity, density, moisture, odor, OVM value etc.)	USCS Symbol	Graphic Log
			0	Silty SAND, yellow brown, some plastic fines >5%.	SM	
			1			
			2			
			3	Silty CLAY, moderate dark yellowish brown, slight plasticity, moist, argillaceous, tree roots.	CL	
7035	11:01am	ND	4			
			5	Silty SAND, moderate yellow brown, argillaceous, > 5% fines, fine grained, moist.	SM	
7036	11:17am	ND	6			
			7	SAND, light brown, medium to coarse grained, well sorted, poorly graded, water saturated.	SP	
			8			
			9			
			10	Total trench depth at 6.5 ft. below grade. Trench terminated due to ponded water.		
			11			
			12			
			13	▼ Ponded ground water depth observed During excavation activities on 6/19/92.		
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
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			26			
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			29			
			30			

teg

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

RECEIVED
JUL 1 1992
Environmental Business Solutions, Inc.

Mr. A. M. Donan
Environmental Business Solutions, Inc.
8799 Balboa Avenue
Suite 290
San Diego, CA 92123

June 30, 1992

SUBJECT: DATA REPORT - CARLTON OAKS COUNTRY CLUB - PROJECT #E1021

TEG JOB #920619T1

Mr. Donan:

Please find enclosed a data report for soil samples from the Carlton Oaks Country Club for Project #E1021. TEG conducted the following analyses:

- 11 soils for total petroleum hydrocarbons (TPH) by DOHS Modified EPA Method 8015.
- 1 soils for BTEX by EPA Method 8020.

All samples were analyzed in TEG's California DOHS certified mobile laboratory (CERT #1746). The results of the analyses are summarized in the attached table. Applicable detection limits and QA/QC data are included on the table.

Please be informed that all soil samples will be disposed of 3 weeks after the analysis date at a cost of $2 per sample. If you wish the samples retained longer or returned to you please inform us by phone or fax prior to that time.

TEG appreciates the opportunity to provide analytical services to Environmental Business Solutions for this project. If you have any questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Janis Columbo

Ms. Janis Columbo
Senior Chemist

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

ENVIRONMENTAL BUS. SOLUTIONS
CARLTON OAKS COUNTRY CLUB
9200 INWOOD DR.
SANTEE, CA.

TEG Project #920619T1

TPH (DOHS MOD. EPA 8015) & BTEX (EPA 8020) ANALYSES OF SOILS

SAMPLE NUMBER	DATE ANALYZED	TPH-GAS (mg/kg)	TPH-DIESEL (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZ (mg/kg)	XYLENES (mg/kg)
7031	06/19/92	ND	ND	--	--	--	--
7032	06/19/92	ND	ND	--	--	--	--
7033	06/19/92	ND	ND	--	--	--	--
7034	06/19/92	ND	ND	--	--	--	--
7035	06/19/92	ND	ND	--	--	--	--
7036	06/19/92	ND	ND	--	--	--	--
7037	06/29/92	1135	ND	2.23	9.68	6.03	32.99
7037 DUP	06/19/92	2070	ND	--	--	--	--
7038	06/19/92	ND	ND	--	--	--	--
7039	06/19/92	ND	ND	--	--	--	--
7040	06/19/92	ND	ND	--	--	--	--
7041	06/19/92	ND	ND	--	--	--	--
DETECTION LIMITS		10	10	0.05	0.05	0.05	0.05

ND INDICATES NOT DETECTED AT LISTED DETECTION LIMITS

QA/QC DATA - MATRIX SPIKE ANALYSIS

	6/19/92					
Spiked Conc.	200	500	1.00	1.00	1.00	3.00
Measured Conc.	199	512	0.97	1.01	0.99	3.02
% Recovery	99.5%	102.4%	97.0%	101.0%	99.0%	100.7%
Spiked Conc.	200	500	1.00	1.00	1.00	3.00
Measured Conc.	182	525	0.89	0.95	0.72	2.47
% Recovery	91.0%	105.0%	89.0%	95.0%	72.0%	82.3%
%RPD	8.9%	2.5%	8.6%	6.1%	31.6%	20.0%

ACCEPTABLE RECOVERY LIMITS: 65% TO 135%

ANALYSES PERFORMED ON-SITE IN TEG'S DOHS CERTIFIED MOBILE LAB (CERT #1746)

ANALYSES PERFORMED BY: MR. GREG SHERMAN

DATA REVIEWED BY: MS. JANIS COLUMBO Janis Columbo 6/30/92

1159 Hermes Avenue, Leucadia, CA 92024 Ph: (619) 632-0401 Fax: (619) 632-0404

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

ANALYTICAL PROCEDURES

SAMPLE PREPARATION

Waters

Separate water aliquots are extracted for TPH analysis (gasoline and diesel) by liquid-liquid extraction with freon 113 using a modified EPA Method 3510. For volatile aromatics and chlorinated hydrocarbons (EPA 601 & 602), water samples are purged of volatiles in a Tekmar LSC-2000 purge & trap following EPA Method 5030.

Soils

Soil samples are extracted with methanol for volatile chlorinated hydrocarbon compounds (EPA 8010) and with freon 113 for volatile aromatic hydrocarbon compounds (EPA 8020) and fuel compounds (DOHS approved EPA 8015m) by hand-shaking for 2 minutes and sonification for 10 minutes.

GAS CHROMATOGRAPHY

Volatile Chlorinated Hydrocarbons

Water samples and soil extracts are purged in a Tekmar LSC-2000 purge & trap, and backflushed into a Shimadzu 14A gas chromatograph equipped with megabore capillary columns and photoionization detector (PID) and Hall electrolytic detectors following EPA Methods 601/8010 and 602/8020.

Volatile Aromatic Hydrocarbons (BTEX) & Total Fuel Hydrocarbons (TPH)

An aliquot of the soil extract is injected on-column into a Shimadzu gas chromatograph equipped with megabore capillary columns, photoionization (PID) and flame ionization detectors (FID).

DATA ACQUISITION & PROCESSING

Data from the gas chromatographs are integrated and plotted by Hewlett-Packard 3393A computing integrators. Separate chromatograms are printed for each detector. The resulting chromatograms are inspected at the end of each run and the data entered into an IBM-compatible computer for on-site processing and evaluation.

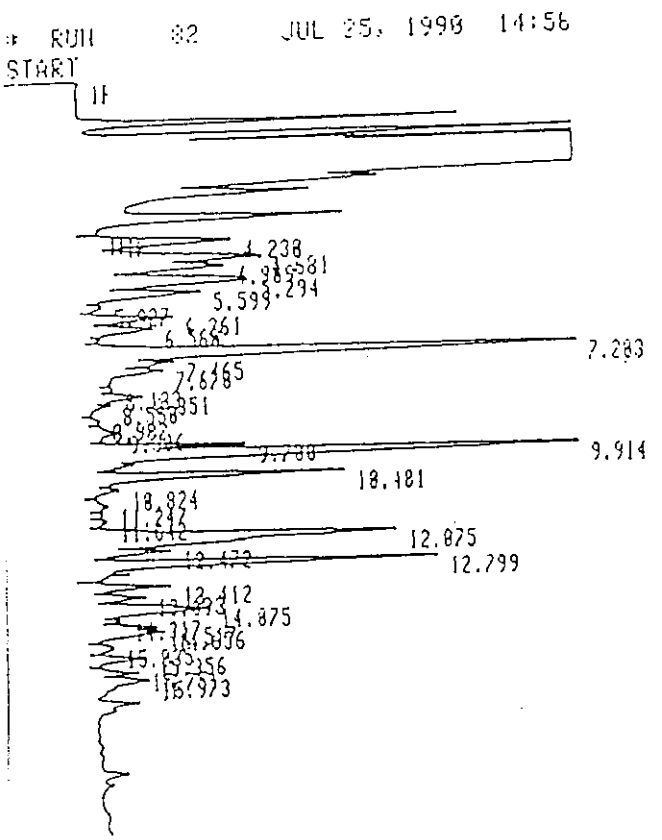
QUALITY ASSURANCE & QUALITY CONTROL

Method blanks are injected at the start of each day and interfering compounds corrected for as appropriate. Calibration standards are injected at the start and end of each day. Matrix spikes for soil matrices are performed to determine % recoveries.

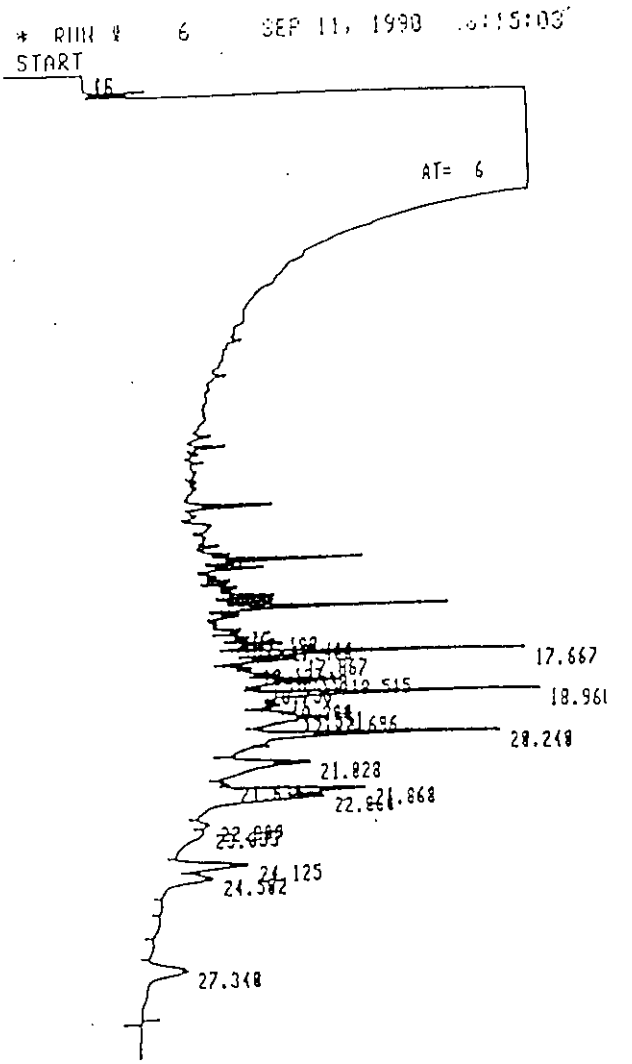
1159 Hermes Avenue, Leucadia, CA 92024/(619) 632-0401/FAX (619) 632-0404

TOTAL PETROLEUM HYDROCARBONS (EPA 8015m)

GASOLINE

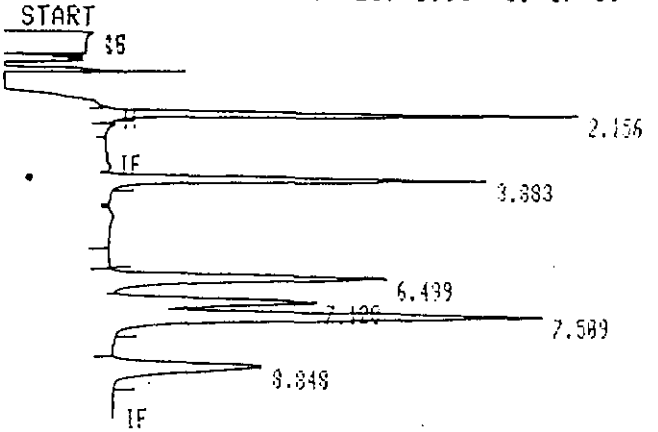


DIESEL



VOLATILE AROMATIC HYDROCARBONS (EPA 602/8020)

```
*  RUN #      4      NOV 26, 1991  09:37:59
START
```




```
TIMETABLE STOP

Closing signal file M:SIGNAL  .BNC

RUN#      4          NOV 26, 1991  09:37:59

SIGNAL FILE: M:SIGNAL.BNC

EPA8020M

ESTD
      RT TYPE        AREA  WIDTH      HEIGHT
   2.156   BB      413165   .094       73440
   3.883   PB      366094   .137       44456
   6.499   Bb      387750   .200       32291
   7.128   BB      208464   .170       19467
   7.509   Bb      545349   .200       45373
   8.848   BB      278847   .265       17522

      RT CAL# PPM SOIL     NAME
   2.156   1R       1.195  BENZENE
   3.883   2R       1.221  TOLUENE
   6.499   3R       1.201  CHLOROBENZ
   7.128   4R       1.232  ETHYLBENZ
   7.509   5R       2.342  M&P XYLENE
   8.848   6R       1.250  O XYLENE

TOTAL AREA=2199569
MUL FACTOR=1.0000E+00
```

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

CHAIN-OF-CUSTODY RECORD

CLIENT: ENVIRONMENTAL BUSINESS SOLUTIONS
ADDRESS: 8799 BALBOA AVE, SUITE 290, S.D. CA. 92123
PHONE: 571-5500 FAX: 571 5357
CLIENT PROJECT #: E1021 PROJECT MANAGER: A.M. DONAN

DATE: 6/19/92 PAGE 1 OF 1
TEG PROJECT #: 920619T1
LOCATION: 9200 INWOOD DR, SANTEE CARLTON OAKS COUNTRY CLUB
COLLECTOR: A.M. DONAN DATE OF COLLECTION 6/19/92

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (g & d)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number Of Containers	Laboratory Number
7031		0920	Soil	4oz GLASS JARS						X												
7032		0934	X	X						X												
7033		1015	X	X						X												
7034		1015	X	X						X												
7035		1125	X	X						X												
7036		1125	X	X						X												
7037		1239	X	X	X					X												
7038		1300	X	X						X												
7039		1300	X	X						X												
7040		1410	X	X						X												
7041		1410	X	X						X												

RELINQUISHED BY: (Signature) A.M. Donan DATE/TIME 6/19/92 RECEIVED BY: (Signature) Greg Rhew DATE/TIME AT TIME OF COLLECTION

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

X TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

RECEIVED
JUL 10 1992
Enviro... ...ness
Solutions, Inc.

QUALITY ASSURANCE LABORATORY
6605 NANCY RIDGE DRIVE
SAN DIEGO, CALIFORNIA 92121
(619) 552-3636

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.
ATTN: BLANE HARTMANN
1159 HERMES AVE.
LEUCADIA, CA 92024

DATE OF REPORT	JULY 7, 1992
DATE RECEIVED	JUNE 30, 1992
SAMPLING DATE	JUNE 19, 1992
DATE OF FINAL REVIEW	JULY 7, 1992
ANALYZED BY	MV JM
SAMPLE TYPE	1 SOIL
PROJECT NUMBER	E1021
	TEG #920619T1

ANALYSES RESULTS

LOG NUMBER	SAMPLE ID	ANALYSIS: PREP/ANALYSIS METHOD: UNITS:	ORG. LEAD DHS MG/KG	DF
11278-92F	7037		0.6	2

DHS - RECOMMENDED PROCEDURE FROM LEAKING UNDERGROUND FUEL TANK FIELD MANUAL, MAY 1988

DF = DILUTION FACTOR. THE DETECTION LIMITS AND ANALYSES RESULTS WERE CORRECTED ACCORDINGLY.

PETER SHEN
LABORATORY DIRECTOR

PS/jb

QUALITY ASSURANCE LABORATORY
QUALITY CONTROL DATA REPORT

JULY 7, 1992

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.
LOG #11278-92F

DATE EXTRACTED: JULY 1, 1992 - ORGANIC LEAD

DATE ANALYZED: JULY 6, 1992 - ORGANIC LEAD

ANALYSES	PREP/ANALYSIS METHOD	LCS % RECOVERY	SPIKE %RECOVERY	DUPLICATE RPD
ORGANIC LEAD	DHS	106%	106%	2%

LISA MACCLELLAN
QA/QC DIRECTOR

QUALITY CONTROL TERMINOLOGY

•**LCS** - LABORATORY CONTROL SAMPLE. REPORTED AS % RECOVERY OF AN INDEPENDENT STANDARD CARRIED THROUGH ALL SAMPLE PREPARATION PROCEDURES TO VERIFY METHOD PERFORMANCE. ACCEPTABLE RANGE IS BASED ON HISTORICAL LABORATORY CONTROL DATA, BUT IS GENERALLY WITHIN A 80%-120% RECOVERY RANGE.
•**SPIKE** - ENVIRONMENTAL SAMPLE IS MATRIX SPIKED WITH METHOD COMPOUNDS AND % RECOVERY OF CONCENTRATION SPIKED INTO SAMPLE IS CALCULATED. REPORTED AS % RECOVERY. ACCEPTABLE RANGE FOR "NORMAL MATRIX SAMPLE" IS BASED ON HISTORICAL LABORATORY CONTROL DATA, BUT IS GENERALLY WITHIN A 75%-125% RECOVERY RANGE.
•**SURROGATES** - COMPOUNDS REPRESENTATIVE OF A GROUP OF COMPOUNDS. SURROGATES ARE SPIKED INTO ENVIRONMENTAL SAMPLES AND % RECOVERY OF CONCENTRATION SPIKED IS CALCULATED AND REPORTED. ACCEPTABLE RANGE VARIES DEPENDING ON SAMPLE MATRIX AND ANALYSIS METHOD.

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

teg

CHAIN-OF-CUSTODY RECORD

9099

CLIENT: Environmental Business Solutions
ADDRESS: 8799 Balboa Ave, Ste 290 S.D. 92123
PHONE: 571-5500 FAX: 571-5357
CLIENT PROJECT #: E1021 PROJECT MANAGER: A.M. Doran

DATE: 6/30 PAGE 1 OF 1
TEG PROJECT #: 9206197 I
LOCATION: 9200 Inwood Dr, Santee
COLLECTOR: DATE OF COLLECTION:

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
7037			Soil	4oz Jar										X					11278-92F		

RECEIVED
JUL 3 1992

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
Ann Malich - TEG	30 JUNE 92 1045	Mayer	6/30/92 10:54
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS	1
CHAIN OF CUSTODY SEALS Y/N/(NA)	
SEALS INTACT? Y/N/(NA)	
RECEIVED GOOD COND./(COLD)	
NOTES:	

LABORATORY NOTES:
1 glass jar
6/19/92
date sampled

Environmental Business Solutions, Inc.
"Providing Economic Environmental Solutions to the Business Community"

June 17, 1992
Project Number: E1021

Ms. Johanna Barry, REHS
County of San Diego
Department of Health Services
Environmental Health Services
Hazardous Materials Management Division
Site Assessment and Mitigation Unit
Post Office Box 85261
San Diego, California 92186-5261

Via Facsimile, Hard Copy to Follow by Regular Mail.

RE: Workplan - Carlton Oaks Country Club
9200 Inwood Drive, Santee, California, 92071
HMMD T# 2296; H# 20821-001

Dear Ms. Barry:

Environmental Business Solutions, Inc. (EBS) has prepared a workplan for your consideration relative to a limited site assessment of the subsurface soil conditions at the above-referenced site.

BACKGROUND

It is our understanding that a 1,000 gallon gasoline underground storage tank (UST) was removed from the site on or about April 22, 1992. We also understand that the soil underneath the tank was sampled by a contractor, under the direction of an inspector from the County of San Diego, Hazardous Materials Management Division (HMMD). The soil samples were submitted to a certified hazardous waste laboratory, Quality Assurance Labs, under chain-of-custody procedures for analytical testing.

Two soil samples were tested for total petroleum hydrocarbons (TPH) from the gasoline tank excavation. The TPH results for the soil samples ranged from 675 milligrams/kilogram (mg/kg) for soil sample T-1 collected from the excavation at 5.5 feet below grade ('bg) to 843 mg/kg for soil sample T-2' also collected from the excavation at approximately 5.5 'bg. Since these samples from the excavation have concentrations greater than the clean-up levels typically assigned to a beneficial groundwater area (such as this site), we understand that the HMMD has requested a site assessment be conducted at the site

Pursuant to Article 11 of Title 23 of the California Code of Regulations and the Site Assessment, and Mitigation Unit (SA/M) Manual, the following workplan by EBS summarizes the objective, scope of work, and methodologies to be used for the limited site assessment.

OBJECTIVE

The objective of this proposed scope of services is to provide a preliminary assessment of the extent of the petroleum-hydrocarbon impacted soil in the former UST excavation.

SCOPE OF SERVICES

The scope of services that will be used to meet the objective includes the following phases:

Phase I Preparation of this Workplan, and a Site Health and Safety Plan

EBS has prepared this written workplan which is intended to satisfy the HMMD requirements. This workplan is intended to describe the field procedures to be utilized in the field investigation, including the type of laboratory analyses to be performed on the soil samples, and soil sample collection method.

A health and safety plan for work conducted at the site and workers within the "exclusion" zone is required pursuant to the regulations found in 29 CFR Part 1910.120. As such, a health and safety plan will be prepared which will outline the potential chemical and physical hazards that may be encountered during the excavation operations in the former tank pit. The appropriate personal protective equipment and emergency response procedures for the site-specific chemical and physical hazards will be detailed in this plan. EBS and contracted personnel involved with the proposed field work will be required to sign this document in order to encourage proper health and safety practices.

Although initial sample results indicated that original vapors would not be a problem during the course of this investigation, organic vapors will be monitored periodically during the excavation activities with an organic vapor meter at the downwind perimeter of the work area. If the total organic vapor meter reading exceeds 10 parts per million (ppm), benzene-specific detector tubes will be utilized. If organic vapor meter readings exceed 25 ppm, the excavation activities will be stopped and control measures such as covering exposed soil, altering excavation methods, or misting of the exposed soil with water will be utilized. If the benzene concentration, as measured by the detector tubes, exceeds approximately 1 ppm, work will be stopped and vapor control measures will be undertaken. Monitoring will continue until the measured benzene concentration is less than 1 ppm.

Soil excavated from the former tank pit will be transported to an area near the excavation and stockpiled on and covered with plastic sheeting. The soil will be stockpiled adjacent to the maintenance facility building, well within the golf course, in an area that is not accessible to the general public. Upon completion of the excavation activities the excavation will be secured with caution tape and/or barricades or plastic fencing.

The work area will be posted with a sign indicating the activities being undertaken, and the names and phone numbers of those who can answer questions regarding the site activities.

Phase II Excavation and Sampling Activities

EBS will work with Western Pump, a licensed contracting company with a valid hazardous waste specialty license, to excavate soil with a backhoe in the vicinity of the former 1,000 gallon UST for sample collection. Up to 10 samples will be collected from locations within or near the former excavation. Soil samples will be collected to a maximum depth of approximately 7 to 8 feet 'bg or to the field-interpreted saturated zone, whichever comes first. The rationale for the collection and analysis of soil samples will be based on field indications such as staining, odors, and/or organic vapor readings of the headspace of selected soil samples and laboratory results from the on-site mobile laboratory. The samples will be collected from the bucket of the backhoe.

Samples will be collected from the backhoe bucket by gloved hand or a stainless steel trowel. Disposable gloves will be used for the collection of each soil sample. Hand tools used in the collection of soil samples will be cleaned with a soapy-water wash, two tap water rinses, and a final de-ionized water rinse between sampling events. Soil samples collected from the backhoe bucket will be tightly packed into laboratory-cleaned sample jars. A separate sample jar with unique sample label and sample number will be used for each soil sample.

Soil samples will be stored in an ice-filled cooler or in the on-site mobile laboratories refrigerator until analysis. Chain-of-custody procedures will be utilized to document sample handling and transport. A state-certified mobile laboratory will be on-site to analyze the collected samples for subsurface soil characterization and for guidance of the over-excavation assessment activities.

Up to ten samples will be analyzed for TPH by modified EPA Method 8015 (Department of Health Services Method). The sample with the highest TPH concentration will also be analyzed for benzene, toluene, ethylbenzene and xylenes (BTEX) in general accordance with EPA Method 8020. and for organic lead. A written analytical report will be provided by the laboratory upon the completion of the sample testing.

We anticipate being on-site for approximately eight hours of field investigation time. Should the impacted soil appear to be larger than can be assessed with a backhoe, the field investigation will be postponed. If this appears to be the case, the client will be consulted and presented with potential options regarding the advisability of additional excavation versus soil borings and/or other investigative techniques.

Phase III Report Preparation

Based on the findings of the field investigation and laboratory results from the above scope of services and the historical findings provided by the Client, a limited assessment report (Report) will be written in general accordance with the SA/M manual. The Report will include laboratory reports, chain-of-custodies, permits, illustrations reflecting the sampled subsurface, tabulated analytical results, and appropriate support documentation. The Report will be peer reviewed and signed by the appropriate licensed professionals.

If we may assist you in any way, please do not hesitate to call our office at (619) 571-5500. We look forward to working with you on this project.

Respectfully,
ENVIRONMENTAL BUSINESS SOLUTIONS, INC.

Daniel E. Johnson
Principal

Anderson M. Donan
Principal

✓ cc: Susan Reid, General Manager, Carlton Oaks Country Club

UNDERGROUND STORAGE TANK UNAUTHORIZED RELEASE (LEAK) / CONTAMINATION SITE REPORT

EMERGENCY ☐ YES ☒ NO

HAS STATE OFFICE OF EMERGENCY SERVICES REPORT BEEN FILED? ☐ YES ☒ NO

FOR LOCAL AGENCY USE ONLY
I HEREBY CERTIFY THAT I HAVE DISTRIBUTED THIS INFORMATION ACCORDING TO THE DISTRIBUTION SHOWN ON THE INSTRUCTION SHEET ON THE BACK PAGE OF THIS FORM.
SIGNED _____ DATE _____

REPORT DATE: M 5 M 1 D 1 D 9 Y 2 Y

CASE #: 420821

REPORTED BY

NAME OF INDIVIDUAL FILING REPORT: SUSAN REID

PHONE: (619) 448-4242

SIGNATURE: [signature]

REPRESENTING: ☒ OWNER/OPERATOR ☐ REGIONAL BOARD ☐ LOCAL AGENCY ☐ OTHER _____

COMPANY OR AGENCY NAME: CARLTON OAKS COUNTRY CLUB

ADDRESS: 9200 STREET INWOOD DRIVE CITY SANTEE STATE CA. ZIP 92071

RESPONSIBLE PARTY

NAME: EASTERN COUNTRY CLUB ☐ UNKNOWN

CONTACT PERSON: JIM TIMKE

PHONE: (619 448-2080

ADDRESS: 9200 STREET INWOOD DRIVE CITY SANTEE STATE CA. ZIP 92071

SITE LOCATION

FACILITY NAME (IF APPLICABLE): CARLTON OAKS COUNTRY CLUB

OPERATOR:

PHONE: 619) 448-4242

ADDRESS: 9200 INWOOD DR. STREET CITY SANTEE COUNTY SAN DIEGO ZIP 92071

CROSS STREET: CARLTON OAKS DRIVE

IMPLEMENTING AGENCIES

LOCAL AGENCY: H.M.M.D. AGENCY NAME

CONTACT PERSON: JOHANNA BARRY

PHONE: (619 338-2222

REGIONAL BOARD: SAN DIEGO REGION

PHONE: ( )

SUBSTANCES INVOLVED

(1) NAME: GASOLINE QUANTITY LOST (GALLONS): _____ ☒ UNKNOWN

(2) NAME: _____ QUANTITY LOST (GALLONS): _____ ☐ UNKNOWN

DISCOVERY/ABATEMENT

DATE DISCOVERED: M 5 M 1 D 1 D 9 Y 2 Y

HOW DISCOVERED: ☐ TANK TEST ☐ INVENTORY CONTROL ☒ TANK REMOVAL ☐ SUBSURFACE MONITORING ☐ OTHER _____ ☐ NUISANCE CONDITIONS

DATE DISCHARGE BEGAN: M M D D Y Y ☒ UNKNOWN

HAS DISCHARGE BEEN STOPPED? ☒ YES ☐ NO IF YES, DATE M M D D Y Y

METHOD USED TO STOP DISCHARGE (CHECK ALL THAT APPLY)
☐ REMOVE CONTENTS ☒ CLOSE TANK & REMOVE ☐ REPAIR PIPING
☐ REPAIR TANK ☐ CLOSE TANK & FILL IN PLACE ☐ CHANGE PROCEDURE
☐ REPLACE TANK ☐ OTHER _____

SOURCE/CAUSE

SOURCE OF DISCHARGE: ☐ TANK LEAK ☒ UNKNOWN ☐ PIPING LEAK ☐ OTHER

CAUSE(S): ☐ OVERFILL ☐ RUPTURE/FAILURE ☐ SPILL ☐ CORROSION ☒ UNKNOWN ☐ OTHER _____

CASE TYPE

CHECK ONE ONLY
☒ UNDETERMINED ☐ SOIL ONLY ☐ GROUNDWATER ☐ DRINKING WATER - (CHECK ONLY IF WATER WELLS HAVE ACTUALLY BEEN AFFECTED)

CURRENT STATUS

CHECK ONE ONLY
☐ NO ACTION TAKEN ☒ PRELIMINARY SITE ASSESSMENT WORKPLAN SUBMITTED ☐ POLLUTION CHARACTERIZATION
☐ LEAK BEING CONFIRMED ☒ PRELIMINARY SITE ASSESSMENT UNDERWAY ☐ POST CLEANUP MONITORING IN PROGRESS
☐ REMEDIATION PLAN ☐ CASE CLOSED (CLEANUP COMPLETED OR UNNECESSARY) ☐ CLEANUP UNDERWAY

REMEDIAL ACTION

CHECK APPROPRIATE ACTION(S) (SEE BACK FOR DETAILS)
☐ CAP SITE (CD) ☐ CONTAINMENT BARRIER (CB) ☐ VACUUM EXTRACT (VE)
☐ EXCAVATE & DISPOSE (ED) ☐ EXCAVATE & TREAT (ET) ☐ NO ACTION REQUIRED (NA) ☐ OTHER (OT) Pending Preliminary Site Assessment
☐ REMOVE FREE PRODUCT (FP) ☐ PUMP & TREAT GROUNDWATER (GT) ☐ TREATMENT AT HOOKUP (HU)
☐ ENHANCED BIO DEGRADATION (IT) ☐ REPLACE SUPPLY (RS) ☐ VENT SOIL (VS)

COMMENTS

HSC 05 (8/90)

MEETING/PHONE/PEER REVIEW

RECORD

H 20821-001	
DATE: 12/1/92	
TIME: :	
PAGE 1 OF 1	
SPEC: J. BARRY	

(Check One)

☐ Meeting Minutes — Meeting Location: _____
(Attach Sign-up Sheet HM-9048)

☒ Telephone Conversation — Phone: (619) 448-4242
Name: _____

☐ Peer Review — Name: SUSAN REID

TOPIC: CALLAN OAKS COUNTRY CLUB

SUMMARY: - SITE WORKPLAN SHOULD BE SUBMITTED TO MR ANTHIN WITHIN A FEW DAYS.

(12/1) left message for susan.
what - status of workplan
- should have been received Jan 1993.
- original notice: dtd Sept 28, 1993

X (2/18/93)
- no additional workplan will be sent to admin by 2/26/93.
C.O.C. ran into personal trouble, no one available now

X left message: Susan Reid 3/2/93

MEETING/PHONE/PEER REVIEW

RECORD

H 20821-0011
DATE: 10/8/93
TIME: :
PAGE ___ OF ___
SPEC: J. Bond

(Check One)

☐ Meeting Minutes — Meeting Location: _____
(Attach Sign-up Sheet HM-9048)

☑ Telephone Conversation — Phone: (____) ____-_____
Name: _____

☐ Peer Review — Name: ONV. BUSINESS SOLN'S, INC

TOPIC: DAN JOHNSON / BARRY PUCKER

SUMMARY: DISCUSSED NECESSITY OF ACCESSING GROUNDWATER CONDITIONS AT THE SITE. DISCUSSED THE POSSIBILITY OF LOW-FLOW (DUE TO THE PROXIMITY TO THE SAN DIEGO RIVER)

- THEY WILL SUBMIT A WORKPLAN & IT WILL BE REVIEWED BY RWQCB & COUNTY STAFF

Rm: 346

MEETING SIGN-IN SHEET

DATE: 10-8-92 SUBJECT: Carlton Oaks Lodge + Country Club

NAME	AGENCY REPRESENTING	PHONE NUMBER
[illegible]	HMMB	338-2492
[illegible]	Environmental Business Sols	571-5500
MIKE ERNETTI	HMMB	338-2242
[illegible] Dan Johns	EBS	571-5500

DHS:HM-9048 (1/90)

MEETING/PHONE/PEER REVIEW

RECORD

H 20821-021
DATE: 10/7/91
TIME: :
PAGE ___ OF ___
SPEC: J. GADD

(Check One)

[] Meeting Minutes — Meeting Location: _____
(Attach Sign-up Sheet HM-9048)

[] Telephone Conversation — Phone: (____) ____ - ____
Name: RWQCB

[X] Peer Review — Name: Gary Wade

TOPIC: CARLTON OAKS LODGE & COUNTRY CLUB

SUMMARY:

- Install at least 1 g.w monitor well if known ground water gradient (to access ground water conditions)

± - minimum of 3 g.w monitoring wells if unknown gradient

- Collect verification soil samples beneath water table

± Hydropunch could possibly be used. Screening tool to detect contamination, then install g.w. monitor wells. Collect conf. soil samples thereafter if needed

questions to ask Dan Johnson:

① Discussion of Stockpile, stockpile analysis

② Verify samples #7032/7031 collected beneath water table at 7.0

Susan ③ ever any other tank there prior to one removed on 4/22/92
Sample +1-5.5 overlaying aquifer?

County of San Diego

J. WILLIAM COX, M.D., Ph.D
DIRECTOR

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

RECEIVED
SEP 16 12 16 PM '92
ENVIRONMENTAL
HEALTH SERVICES

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

September 9, 1992

Craig Zellers
Carlton Oaks Country Club
9200 Inwood Dr.
Santee, CA 92071-2310

TO WHOM IT MAY CONCERN:

CRAIG ZELLERS IS NO LONGER EMPLOYED AT CARLTON OAKS COUNTRY CLUB; MAIL SHOULD BE ADDRESSED TO JAMES C. TIMKE, COURSE SUPERINTENDENT AND/OR SUSAN REID, GENERAL MANAGER.

THANK YOU FOR YOUR ATTENTION TO THIS MATTER

Dear Mr. Zellers:

BUSINESS PLAN ACCEPTANCE FOR ESTABLISHMENT NUMBER H20821

Thank you for submitting your Business Plan to the Hazardous Materials Management Division (HMMD). It has been reviewed and evaluated by this office in accordance with Chapter 6.95, California Health and Safety Code, Division 20, and the Federal reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Title III.

Your Business Plan/Business Plan Update has been accepted on April 30, 1992 as submitted.

A copy of your Business Plan has been added to your HMMD file and another forwarded to your local fire agency. A complete copy of your Business Plan must be kept at your business site and will be requested to be seen during the inspection of your site by the HMMD. Also, maintain a copy of this letter at your business site to confirm that your Business Plan has been accepted.

You are required to submit updated Business Plan information to this office within 30 days of any one of the following events:

* Change of business name,
* Change of business ownership,
* Change of business address,
* Any handling of a previously undisclosed material meeting disclosure requirements,
* 100% or more increase in any disclosed material.

If you have any questions please contact our Business Plan Check staff at (619) 338-2222.

wj

MEETING/PHONE/PEER REVIEW

RECORD

H20821-001	
DATE:	9/9/92
TIME:	:
PAGE ___ OF ___	
SPEC:	J. BARR

(Check One)

☐ Meeting Minutes — Meeting Location: _____
(Attach Sign-up Sheet HM-9048) 4290

☒ Telephone Conversation — Phone: (619) 448-2085
Name: _____

☐ Peer Review — Name: SUSAN NIO / LIZ (SECRETARY)

TOPIC: 4290 INWOOD DR, SANTEE

SUMMARY: - SPOKE TO SUSAN NIO ABOUT SETTING UP A MEETING REGARDING "ASSESSING GROUNDWATER CONDITIONS AT" THE SITE. SAID WE COULD SCHEDULE AN APPT. OUT AT THE SITE HOWEVER SHE NEEDS TO BE ADVISED THAT WE CHARGE LOP TIME ($80.00 PER HOUR). DRIVING TIME THERE WOULD BE AN ADDITIONAL $80-100.00.

- SHE WILL GET BACK TO ME REGARDING THE MEETING

FILE COPY

J. WILLIAM COX, M.D., Ph.D
DIRECTOR
[redacted]

County of San Diego

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

August 13, 1992

Carlton Oaks Country Club
Attn: Mr. Craig Zellers
9200 Inwood Drive
Santee, CA 92071

Dear Mr. Zellers:

RE: UNAUTHORIZED RELEASE #T2296/H20821-001
CARLTON OAKS LODGE AND COUNTRY CLUB
9200 IRONWOOD DRIVE
SANTEE, CA 92071

A review of a "Limited Site Assessment Report: Maintenance Facility Carlton Oaks Country Club", prepared by Environmental Business Solutions, Inc., and dated July 20, 1992, has been reviewed by the San Diego County Hazardous Materials Management Division (HMMD) and discussed with staff of the Regional Water Quality Control Board (RWQCB).

It was determined that further information/work is required to assess the groundwater conditions at the site. Submit a workplan detailing the environmental assessment activities which will be undertaken to assess the groundwater conditions at the site. Submit the workplan for HMMD approval by September 28, 1992.

Please provide an additional copy of the work plan required above to Mr. James Munch of the RWQCB. If you have any questions, please contact me at (619) 338-2492.

Sincerely,

Johanna Barry

JOHANNA BARRY, Hazardous Materials Specialist
Hazardous Materials Management Division

JB:cl

cc: James Munch-RWQCB
Dan Johnson-Environmental Business Solutions, Inc.

WP\CARLSBAD

SITE ASSESSMENT REPORT CHECK LIST

Address each of the following topics in a site assessment report. In the event a topic is not applicable to the situation, provide an explanation. The report does not have a to follow the order of this check list. This check list should not to be used as a "fill in the blanks" report. Reports must be "stand alone" documents written in narrative form.

1. **SUMMARY/CONCLUSIONS/RECOMMENDATIONS**

   a) Horizontal and vertical extent of soil and groundwater contamination defined.
   b) Additional assessment recommendations.
   c) Potential remediation (cleanup) alternatives.

2. **SITE IDENTIFICATION**

   a) Site address: Street Name and Number, City, State, Zip Code.
   b) Name of Business at site.
   c) Assessor's Parcel Number (APN).
   d) HMMD Case Number: (e.g., H21042-001)
   e) Property owner: Name and mailing address.
   f) Tank owner: Name and mailing address.
   g) Tank operator: Name and mailing address.
   h) Contact Person: Name, mailing address and phone number.
   i) Responsible party: Name and mailing address.
   j) Location map.

3. **SITE HISTORY/DEVELOPMENT/USAGE**

   a) Historical site use (including potential sources of contamination and dates).
   b) Current site use (including potential sources of contamination and dates).
   c) Future site use and development plans (type of use, new construction, below-grade structures, proposed excavation work, elevator shafts, vaults, utility trenches).
   d) Adjacent site uses.

4. **DESCRIPTION OF RELEASE**

   a) Substance(s) released.
   b) Quantity of substance(s) released (estimate).
   c) How and when release occurred.
   d) Location of release on site.

5. **SITE PLOT PLAN**

   a) Drawn to scale. (Indicate scale used)
   b) North direction arrow.
   c) Streets, structures, and utilities.

5. SITE PLOT PLAN (Continued)

d) Excavation and stockpile locations.
e) Tank and piping locations (past, existing, proposed).
f) Well, boring, and sample locations.
g) Legend for symbols and abbreviations.

6. GEOLOGY**

a) Local geology description.
b) Site geology description.
c) Topography.

7. HYDROLOGY**

a) Surface drainage and surface-water bodies in vicinity.
b) RWQCB basin plan hydrographic unit and subunit identification.
c) Groundwater elevation measurements and depth to groundwater.
d) Groundwater gradient and direction of groundwater flow.
e) Known or probable contaminant migration patterns (consider hydrogeology, groundwater gradient, utility trenches, etc.).
f) Source of information.

8. DELINEATION OF CONTAMINATION**

a) Summary table of analytical data with sample identification, depth, location, analysis method(s) and results.
b) Map(s) showing horizontal extent of soil contamination, probable contamination sources, contaminant migration pathways, well and boring locations, sample locations, and sample results.
c) Cross sections showing vertical extent of soil contamination, contamination source(s), lithology, water table, sample locations and sample results.
d) Map(s) showing horizontal extent of groundwater contamination, well locations, sample results, product thickness in wells, groundwater elevation in wells, groundwater elevation contours, and groundwater flow direction.
e) Discussion of environmental parameters or man-made features which may affect the spread of contamination.
f) Estimated volume of contaminated soil and/or water.
g) Estimated mass of contaminant in soil and/or water.

9. EXPOSURE CONCERNS**

a) Contaminant migration pathways description.
   i. Man-made pathways (conduits, utilities, vaults, piping, storm drains, etc.).
   ii. Natural pathways (air, soil, surface water, bedrock fractures, groundwater, etc.).

9. **EXPOSURE CONCERNS** (Continued)**

b) Impact on biological receptors (people, plants, animals).
c) Potential nuisance complaints (odors, eyesore).
d) Risk assessment concepts and calculations.
e) Identify all production and potable water supply wells within 1000 feet of the site by means of area site visit and/or California Department of Water Resources (DWR) records.

10. **SAMPLING****

a) Protocol description (basis for sampling).
b) Methods.
c) Preservation and transport.
d) Analyses performed.
e) Chain-of-custody forms.
f) Sample matrix description (e.g., clay, sand, water).
g) Laboratory analytical reports.
h) Quality Assurance/Quality Control data.

11. **STOCKPILED SOIL MANAGEMENT**

a) Volume.
b) Location.
c) Methods used to prevent aeration, run-off and public access.
d) Disposal methods.
e) Copies of Manifests.

12. **SITE SAFETY**

a) Site safety/security description.
b) Community health and safety issues addressed.
c) Monitoring equipment.
d) Protective equipment.
e) Public agency notifications.
f) Utility notifications.

13. **SIGNATURE/REGISTRATION ****

a) Signature(s) of report preparer(s).
b) Signature(s) and registration number(s) of the registered professional(s) who supervised and is responsible for designated portions of the report.
c) Authorized signature for the company preparing the report.
d) Original signatures required. (No draft or unsigned reports)

14. **APPENDIX**

a) Well/boring logs.
b) Hazardous-Waste Manifests.

14. **APPENDIX (Continued)**

c) Disposal receipts.
d) Permits (APCD, Fire Department, Wells, etc.).
e) Laboratory Data Sheets.
f) Chain-of-Custody forms.

* * **NOTE:** All work and reports which require geologic or engineering evaluations and/or judgements must be performed under the direction of an appropriately registered or certified professional (Sections 6735, 7835, and 7835.1 of the Business and Professions Code). All reports containing such information shall be signed by a registered professional (e.g., RG, RCE, CEG). Borehole and monitoring well installation and logging, and subsurface contamination assessments do require such a professional.

J.B.

County of San Diego

J. WILLIAM COX, M.D., Ph.D
DIRECTOR

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P.O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

OFFICIAL NOTICE

July 27, 1992

Jim Timke
Eastern Country Club
9200 Inwood Drive
Santee, CA 92071

Dear Mr. Timke:

RE: UNAUTHORIZED RELEASE #T2296/H20821-001
9200 INWOOD DRIVE, SANTEE, CA

The initial Unauthorized Release Report submitted by Susan Reid dated May 11, 1992, for the site referenced above conforms to the initial written reporting requirements, as prescribed in the California Health and Safety Code, Chapter 6.7 and the California Code of Regulations, Title 23. For the duration of the site mitigation process, you are required to provide periodic, brief, written update reports to this office and the Regional Water Quality Control Board (RWQCB). These reports must be submitted every 30 days and should include a brief summary of the completed and projected site assessment and mitigation activities. The update report is due by August 21, 1992.

The extent of contamination must be determined as soon as possible and a comprehensive site assessment report submitted to this office and the RWQCB within 120 days. The comprehensive report must address the items on the enclosed "Site Assessment Report Check List" and is due by November 21, 1992.

If during the site mitigation process any significant situation is encountered that was not known nor anticipated, please immediately notify me and provide a written statement describing the situation to amend the Unauthorized Release Report. As a reminder, a copy of each manifest for hauling any hazardous waste generated as a result of the site assessment and mitigation procedure must be included with the written supplemental reports.

If you have any questions on this matter please contact me at (619) 338-2492

Sincerely,

Johanna Barry

JOHANNA BARRY, Hazardous Materials Specialist
Hazardous Materials Management Division

JB:cl

Enclosure

cc: James Munch-RWQCB

WP\T2296

SITE ASSESSMENT REPORT CHECK LIST

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j) Location map.

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b) Map(s) showing horizontal extent of soil contamination, probable contamination sources, contaminant migration pathways, well and boring locations, sample locations, and sample results.
c) Cross sections showing vertical extent of soil contamination, contamination source(s), lithology, water table, sample locations and sample results.
d) Map(s) showing horizontal extent of groundwater contamination, well locations, sample results, product thickness in wells, groundwater elevation in wells, groundwater elevation contours, and groundwater flow direction.
e) Discussion of environmental parameters or man-made features which may affect the spread of contamination.
f) Estimated volume of contaminated soil and/or water.
g) Estimated mass of contaminant in soil and/or water.

9. EXPOSURE CONCERNS**

a) Contaminant migration pathways description.
   i. Man-made pathways (conduits, utilities, vaults, piping, storm drains, etc.).
   ii. Natural pathways (air, soil, surface water, bedrock fractures, groundwater, etc.).

9. **EXPOSURE CONCERNS** (Continued)**

b) Impact on biological receptors (people, plants, animals).
c) Potential nuisance complaints (odors, eyesore).
d) Risk assessment concepts and calculations.
e) Identify all production and potable water supply wells within 1000 feet of the site by means of area site visit and/or California Department of Water Resources (DWR) records.

10. **SAMPLING****

a) Protocol description (basis for sampling).
b) Methods.
c) Preservation and transport.
d) Analyses performed.
e) Chain-of-custody forms.
f) Sample matrix description (e.g., clay, sand, water).
g) Laboratory analytical reports.
h) Quality Assurance/Quality Control data.

11. **STOCKPILED SOIL MANAGEMENT**

a) Volume.
b) Location.
c) Methods used to prevent aeration, run-off and public access.
d) Disposal methods.
e) Copies of Manifests.

12. **SITE SAFETY**

a) Site safety/security description.
b) Community health and safety issues addressed.
c) Monitoring equipment.
d) Protective equipment.
e) Public agency notifications.
f) Utility notifications.

13. **SIGNATURE/REGISTRATION ****

a) Signature(s) of report preparer(s).
b) Signature(s) and registration number(s) of the registered professional(s) who supervised and is responsible for designated portions of the report.
c) Authorized signature for the company preparing the report.
d) Original signatures required. (No draft or unsigned reports)

14. **APPENDIX**

a) Well/boring logs.
b) Hazardous-Waste Manifests.

14. **APPENDIX (Continued)**

c) Disposal receipts.
d) Permits (APCD, Fire Department, Wells, etc.).
e) Laboratory Data Sheets.
f) Chain-of-Custody forms.

* * **NOTE:** All work and reports which require geologic or engineering evaluations and/or judgements must be performed under the direction of an appropriately registered or certified professional (Sections 6735, 7835, and 7835.1 of the Business and Professions Code). All reports containing such information shall be signed by a registered professional (e.g., RG, RCE, CEG). Borehole and monitoring well installation and logging, and subsurface contamination assessments do require such a professional.

SAN DIEGO REGIONAL BOARD BASIN INFORMATION

Regional Board Staff: JM/LC

HMMD Staff : Johanna Barry

H number: 20821-001 Date: 7/9/92

T number: 2296

Site Address: 9200 Inwood Drive
Santee 92071

Beneficial Use: Yes: ✓ No: ___ Basin No.: 7.12

Beneficial Uses

Municipal : ✓

Agricultural: ✓

Industrial : ✓

Industrial Process Sply: ✓

Groundwater Recharge : ✓

MEETING/PHONE/PEER REVIEW RECORD

H20821-001	
DATE: 6/18/92	
TIME: :	
PAGE 1 OF 1	
SPEC: J. BARRY	

(Check One)

☐ Meeting Minutes — Meeting Location: _____
(Attach Sign-up Sheet HM-9048)

☒ Telephone Conversation — Phone: (619) 571-5500
Name: DAN JOHNSON

☐ Peer Review — Name: _____

TOPIC: CARLTON OAKS LODGE & COUNTRY CLUB

SUMMARY:

- GAVE VERBAL APPROVAL ON WORK PLAN. CONFIRMATION LETTER WILL FOLLOW.

- INDICATED THAT GROUNDWATER MAY BE ~ 6 FT.

County of San Diego

J. WILLIAM COX, M.D., Ph.D
DIRECTOR
STEVEN A. ESCOBOZA
ASSISTANT DIRECTOR

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P.O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P.O. BOX 85261
SAN DIEGO, CA 92186
(619) 338-2222

June 17, 1992

Carlton Oaks Country Club
Mr. Craig Zellers
9200 Inwood Drive
Santee, Ca 92071

Dear Mr. Zellers:

RE: UNAUTHORIZED RELEASE #T2296/H20821-001
CARLTON OAKS LODGE AND COUNTRY CLUB
9200 IRONWOOD DRIVE, SANTEE, CA 92071

The San Diego County Hazardous Materials Management Division (HMMD), has reviewed the Work Activity Plan for Carlton Oaks Lodge and Country Club, dated June 17, 1992, and submitted by Environmental Business Solutions, Inc. The scope of the environmental investigation, as proposed in the workplan, is acceptable to HMMD and is consistent with HMMD policies and procedures as outlined in the County's Site Assessment and Mitigation Manual (SA/M).

Please notify me as to the expected field activity date.

Please inform me of any situation encountered at the release site which requires you to significantly deviate from the proposed site investigation strategy.

Should you have any questions, please do not hesitate to contact me at (619) 338-2492.

Sincerely,

Johanna Barry

JOHANNA BARRY, Hazardous Materials Specialist
Hazardous Materials Management Division

JB:jw

cc: James Munch, RWQCB
Dan Johnson, Environmental Business Solutions, Inc.

WP/CARLSBAD

MEETING/PHONE/PEER REVIEW RECORD

H20821-002	
DATE:	6/17/92
TIME:	:
PAGE	1 OF 1
SPEC:	JBarry

(Check One)

[] Meeting Minutes — Meeting Location: _____ (Attach Sign-up Sheet HM-9048)

[x] Telephone Conversation — Phone: (619) 571-5520 — Name: DAN JOHNSON

[] Peer Review — Name: ENV. BUSINESS SOLUTIONS INC

TOPIC: CARLTON OAKS LODGE & COUNTRY CLUB

SUMMARY:

DAN SAID HE WAS SUBMITTING A WORK PLAN FOR RE ABOUT SITE

I TOLD HIM WE HADN'T RECEIVED THE 5-DAY UNAUTHORIZED RELEASE REPORT. HE SAID, HE WOULD HELP R.P. FILL IT OUT & SEND TO MY ATTENTION

J. WILLIAM COX, M.D., Ph.D
DIRECTOR
STEVEN A. ESCOBOZA
ASSISTANT DIRECTOR

County of San Diego

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P.O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

NOTICE OF CORRECTIVE ACTION AND REIMBURSEMENT RESPONSIBILITY

May 12, 1992

Craig Zellers
Eastern Country Clubs, Inc.
9200 Inwood Drive
Santee, CA 92071

Dear Mr. Zellers:

RE: UNAUTHORIZED RELEASE #T2296/H20821-001
CARLTON OAKS LODGE AND COUNTRY CLUB
9200 INWOOD DRIVE, SANTEE, CA 92071

The County of San Diego Hazardous Materials Management Division (HMMD) has been notified of an Unauthorized Release of hazardous substances from the underground storage tank(s) (UST) at the location referenced above. HMMD has identified the following party(ies) as being responsible for the implementation of the environmental investigation and cleanup of this Unauthorized Release:

Craig Zellers
Carlton Oaks Country Club
9200 Inwood Drive
Santee, CA 92071

Craig Zellers
Eastern Country Clubs, Inc.
9200 Inwood Drive
Santee, CA 92071

Please be advised that Article 4, Chapter 6.75 of the California Health & Safety Code (CH&SC) requires the tank owner, tank operator, or other responsible parties to take corrective action in response to an Unauthorized Release. Article 4 authorizes HMMD to issue corrective action orders to the responsible parties, as necessary, to ensure the timely investigation and cleanup of release sites. Section 25299.76 of the CH&SC provides that any person who violates any requirement of Article 4 is liable for a civil penalty of not more than $10,000 for each underground storage tank for each day of violation.

Federal and state law require the responsible party(ies) to reimburse the State Water Resources Control Board for local agency costs associated with the oversight of corrective action at the site of an Unauthorized Release. The responsible party is liable for not more than 150% of the total amount of the agency oversight costs. Please take note of the following:

> *"Whereas the federal Petroleum Leaking Underground Storage Tank Trust Fund provides funding to pay the local agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks; and Whereas the Legislature has authorized funds to pay the local and state agency administrative and oversight costs associated with the cleanup of releases from underground storage tanks; and Whereas the direct*

and indirect costs of overseeing removal or remedial action at the above site are funded, in whole or in part, from the federal Trust Fund; and Whereas the above individual(s) or entity(ies) have been identified as the party or parties responsible for investigation and cleanup of the above site; YOU ARE HEREBY NOTIFIED that pursuant to Title 42 of the United States Code, Section 6991b(h)(6) and Sections 25297.1 and 25360 of the Health and Safety Code, the above Responsible Party or Parties shall reimburse the State Water Resources Control Board not more than 150 percent of the total amount of site specific oversight costs actually incurred while overseeing the cleanup of the above underground storage tank site, and the above Responsible Party or Parties shall make full payment of such costs within 30 days of receipt of a detailed invoice from the State Water Resources Control Board."

Title 23 of the California Code of Regulations requires the responsible party(ies) to implement initial corrective action measures upon the discovery of an Unauthorized Release from a UST system. Enclosed for your information is a listing of initial corrective action measures and applicable notification requirements. Please note that the responsible party(ies) must complete and submit the enclosed UST Unauthorized Release Report (Form No. HSC-05) to HMMD within five (5) working days.

Subsequent corrective action and reporting requirements will be determined upon HMMD evaluation of the UST Unauthorized Release Report and consultation with the Regional Water Quality Control Board and other appropriate regulatory agencies. The responsible party(ies) will be notified of their additional corrective action requirements in writing by HMMD. The satisfactory completion of corrective action at the Unauthorized Release site can only be acknowledged through HMMD/RWQCB issuance of an official Closure Letter to the responsible party(ies).

The Underground Storage Tank (UST) Cleanup Fund, created by the passage of SB 2004 (Keene) on September 26, 1991, provides funding to eligible responsible parties for corrective action and third party liability costs resulting from the Unauthorized Release of petroleum hydrocarbons. For more information on the UST Cleanup Fund, please contact the State Water Resources Control Board at (916) 739-2475.

If you have any questions concerning this Notice, please contact the undersigned at (619) 338-2492, or the Division of Clean Water Programs, State Water Resources Control Board, P.O. Box 944212, Sacramento, CA 94224-2120.

Sincerely,

Johanna Barry

JOHANNA BARRY, Hazardous Materials Specialist
Hazardous Materials Management Division

JB:cl

Enclosures

cc: Sandra L. Malos, State Water Resources Control Board
James Munch, San Diego Regional Water Quality Control Board

WP\T2296

CORRECTIVE ACTION MEASURES

TANK OWNER/OPERATOR RESPONSIBILITIES

The San Diego County Hazardous Materials Management Division (HMMD) has been notified that an Unauthorized Release has occurred at the underground storage tank site upon which you have been identified as a responsible party. The responsible parties are hereby required to initiate corrective action measures in accordance with the provisions stated below.

Initial Corrective Action Measures

- Maintain the Unauthorized Release site in a manner that does not create public health, safety and environmental hazards.
- Remove as much of the hazardous substance from the underground tank system as is necessary to prevent further release to the environment.
- Investigate the Unauthorized Release and prevent further migration of the released substance into the environment.
- Remedy hazards posed by contaminated soils that are exposed or excavated as a result of release confirmation, site investigation, or abatement activities.
- Submit all available information relevant to the underground tank site and the Unauthorized Release, including:

  1. The nature and estimated quantity of release.
  2. Current or potential offsite impacts on land uses, water wells/resources, subsurface utilities, etc.

- Follow the corrective action procedures, guidelines, and engineering controls described in the HMMD Site Assessment & Mitigation Manual.

Notification and Reporting Responsibilities

- Notify the local Fire Department and HMMD immediately whenever a fire hazard or explosion hazard is present.
- Submit an Underground Storage Tank Unauthorized Release Report (Form No. HSC-05) to HMMD within five (5) working days.
- Comply with subsequent HMMD orders for written reporting and corrective action at the Unauthorized Release site.

County of San Diego

J. WILLIAM COX, M.D., Ph.D
DIRECTOR
(619) 338-2237

STEVEN A. ESCOBOZA
ASSISTANT DIRECTOR
(619) 338-7633

DEPARTMENT OF HEALTH SERVICES
1700 PACIFIC HIGHWAY, SAN DIEGO, CALIFORNIA 92101-2417

ENVIRONMENTAL HEALTH SERVICES
HAZARDOUS MATERIALS MANAGEMENT DIVISION
P.O. BOX 85261
SAN DIEGO, CA 92138-5261
(619) 338-2222

DATE: 5/4/93

MEMORANDUM FOR: California Regional Water Quality Control Board, San Diego Region

FROM: Hazardous Materials Management Division (HMMD)

SUBJECT: UNAUTHORIZED RELEASE OF HAZARDOUS MATERIAL FROM AN UNDERGROUND STORAGE TANK T# 2296 H20821-001

Evidence of an unauthorized release of a hazardous material has been noted by HMMD staff at the site described below:

Site Address: 9200 INWOOD DR (Street) SANTEE (City) 92071 (Zip Code)

Property Owner: EASTAN COUNTRY CLUBS INC ATTN: CRAIG TITMAS (Name)
9200 INWOOD DR (Street) SANTEE (City) 92071 (Zip Code)
Telephone (619)448-0453

Tank Operator: CARLTON OAKS COUNTRY CLUB (Name) ATTN: CRAIG TITMAS (619)448-0453 (Telephone)

The following information is provided for your consideration and action in accordance with the authority and responsibilities of the Regional Board.

Suspected Source(s) GASOLINE

Amount Released UNKNOWN (Gallons) _____ (Time Period)

Release Detected By:

- ____ Routine Tank Testing
- ____ Test of Piping
- ____ Inventory Audit
- ____ Monitoring Device/Well
- X Evidence of Soil Contamination Detected During Tank Removal
- ____ Evidence of Leaky Tank Detected During Tank Removal
- ____ Other

Description of underground tank systems on property (number, type, age, capacity, material stored, evidence of leakage). STEEL TANK. HEAVY PITTING / HEAVY CORROSION ON VALVES NOTED ALONG SEAMS & ON BOTTOM OF TANK. (~1/8 - 1/4 IN DEPTH)

Date Release Reported to or Detected by HMMD 5/4/93

Contact With Other Agencies _____

Additional Comments:

Please call the HMMD at 338-2222 (3455) if you have questions or comments regarding the above.

HMMD Staff JOHANNA R APPLEY

MF

Environmental Business Solutions, Inc.
"Providing Economic Environmental Solutions to the Business Community"

RECEIVED
AUG 19 12 04 PM '93
Copy No. ____
ENVIRONMENTAL HEALTH SERVICES

August 10, 1993
Project Number: 92E1021.2

Ms. Susan Reid
General Manager
Carlton Oaks Country Club
9200 Inwood Drive
Santee, California 92071

RE: Additional Environmental Site Assessment
Maintenance Area, Carlton Oaks Country Club, Santee, California

Dear Ms. Reid:

This report summarizes the results of our additional site assessment that was conducted to assess the environmental conditions at the site. This work was conducted by Environmental Business Solutions, Inc. (EBS) in response to your request and authorization and in general accordance with Exhibit "2" to the *Consulting Agreement (contract)*.

BACKGROUND

It is our understanding that one 1,000 gallon gasoline underground storage tank (UST) was removed from the site on or about April 22, 1992. We also understand that the soil underneath the tank was sampled by a contractor, Angus Asphalt, under the direction of an inspector from the County of San Diego, Hazardous Materials Management Division (HMMD). The soil samples were submitted to a state certified hazardous waste laboratory, Quality Assurance Labs, under chain-of-custody procedures for analytical testing.

We understand that two soil samples were tested for total petroleum hydrocarbons (TPH) from the gasoline tank excavation. We also understand that the TPH results for the soil samples were 675 milligrams/kilogram (mg/kg) for soil sample "T-1" collected from the excavation at 5.5' feet below grade (T-1-5.5) and 843 mg/kg for soil sample "T-2" also collected from the excavation at approximately 5.5' below grade (T-2-5.5'). Since these samples from the excavation have concentrations greater than the clean-up levels typically assigned to a beneficial groundwater area (such as this site), we understand that the HMMD requested a site assessment be conducted at the site.

On June 19, 1992, representatives of EBS collected soil samples and excavated soil in and around the vicinity of the former UST. A report was issued on July 17, 1992 which presented the results of the soil sampling. As presented in that report soil samples collected below a depth of six feet below grade generally had no detectable TPH concentrations. In order to remove soil with detectable TPH concentrations, excavations extended to a depth of approximately seven feet below grade.

On August 13, 1992 the HMMD issued a letter stating that additional work needed to be performed prior to the HMMD closing the site. On October 8, 1992 a meeting was held between representatives of EBS and Ms. Johanna Barry and Mr. Mike Vernetti of the HMMD to discuss the additional work requested. Mr Vernetti stated that he needed more information regarding the quality of groundwater beneath the site and

that the soil stockpiled during the tank excavation and subsequent excavation needed to be characterized. It was decided at that meeting to install one groundwater monitoring well immediately to the west and down-gradient of the tank excavation to provide more information on groundwater conditions and to sample the existing stockpiles.

Site Identification

Site Address: Carlton Oaks Country Club, 9200 Inwood Drive, Santee, CA 92071

Contact Person: Ms. Susan Reid

Assessor's Parcel No.: 383-071-02

HMMD Case No.: H20821-001/T2296

Site Location/Description

The Carlton Oaks Country Club is located in Santee, California. The site is located within the floodplain of the San Diego River (Figure 1). The Santee Recreational Lakes and sewage treatment plant is located approximately one mile north of the site.

The Carlton Oaks Country Club is composed of an 18 hole golf course and associated structures. The former UST was located in the maintenance area of the site.

OBJECTIVE

The objective of this additional assessment was to assess the likelihood that shallow groundwater near the former UST excavation has been impacted by petroleum hydrocarbons and to assess the soil stockpiles for disposal purposes.

SCOPE OF SERVICES

The scope of services that was used to meet the objective included the following tasks:

- **Preparation Workplan, Well Permit, and Health and Safety Plan**
- **Installation and Monitoring of One Groundwater Monitoring Well**
- **Laboratory Analysis**
- **Data Evaluation, Figure Preparation, and Assessment Report**

Preparation of Workplan, Well Permit, and Health and Safety Plan

On March 8, 1993, a Site Assessment Workplan was submitted to Ms. Johanna Barry of the HMMD. The workplan presented a discussion of the proposed site assessment to be performed including location of the proposed monitoring well and soil sample analysis. On March 19, 1993, Ms. Barry requested a copy of the health and safety plan for the proposed fieldwork. A copy of the health and safety plan was sent via

facsimile to Ms. Barry on April 6, 1993. On April 7, 1993, Ms. Barry issued a letter stating that the workplan had been approved with the condition that additional soil sampling analyses be performed. A copy of the letter is attached (Appendix I).

On March 25, 1993, a groundwater monitoring well permit was submitted to the HMMD for approval. On April 1, 1993 the permit was approved. A copy of the permit is attached (Appendix I).

Prior to drilling, a Health and Safety Plan for the site was prepared to reflect the work scope in accordance with the health and safety regulations cited in 29 CFR Part 1910.120. The plan outlined the potential chemical and physical hazards that were anticipated to be encountered during drilling and sampling activities. The plan also included the appropriate personal protective equipment and emergency response procedures for the site-specific chemical and physical hazards.

Field Activities

Installation of One Groundwater Monitoring Well

On April 9, 1993 one groundwater monitoring well (well) was drilled, logged, sampled and installed adjacent to the down gradient side of the former UST excavation. Based on review of previous work performed by James Montgomery, it was assumed that groundwater flows to the west in the vicinity of the former UST (Figure 2). Figure 3 shows the approximate location of the well.

Prior to performing the field activities, Underground Service Alert (USA) was notified. USA issued ticket number 517497 for the notification. In addition to the USA notification, a private utility locating service was used to survey the location of the proposed well for underground utilities.

The soil boring in which the well was installed was drilled by Tri-County Drilling using a truck-mounted, Simco 3000, hollow-stem auger drill rig. Prior to coming on the site the drill augers were steam cleaned. Upon completion of the soil boring a two inch diameter well was installed. Well construction specifics are presented on the attached Well Log (Appendix II). The boring was logged by a California state-registered geologist in general accordance with the Unified Soil Classification System (USCS). Soil cuttings generated during the drilling operations were placed in stockpile B.

During drilling a standard penetration test split tube sampler (SPT) was used to collect samples of the subsurface soil for laboratory analysis. Soil samples were collected at five foot intervals during the drilling of the soil boring. After collecting the soil samples, the soil samples were transferred to laboratory supplied glass jars with Teflon lined caps, sealed, labeled and double sealed in "zip-lock" type plastic bags. All the samples were placed on ice in an ice chest until delivery to the laboratory. Chain-of-custody documentation was used to track the soil samples. The sampling equipment utilized to collect the soil samples was precleaned prior to use and cleaned between sampling events using a trisodium phosphate wash, two tap water rinses, and a distilled water rinse.

Stockpile Soil Sampling

During the initial backhoe assessment, approximately 25 cubic yards of soil were placed in two stockpiles. In order to characterize the soil for assessment of disposal options, four soil samples were collected. The samples were collected from randomly selected locations. Soil sample locations are shown on Figure 3.

Soil samples were packed into laboratory supplied glass jars, sealed, labeled and double sealed in "zip-lock" type plastic bags. All the samples were placed on ice in an ice chest until delivery to the laboratory.

Chain-of-custody documentation was used to track the soil samples. The sampling equipment utilized to collect the soil samples was precleaned prior to use and cleaned between sampling events using a trisodium phosphate wash, two tap water rinses and a distilled water rinse.

Soil Sample Analyses

Soil samples were handled under chain-of-custody procedures and delivered to Transglobal Environmental Geochemistry, Inc. (TEG), and Analytical Technologies, Inc. (ATI) state-certified hazardous waste analytical laboratories. Laboratory reports and chain-of-custody documents are attached (Appendix III).

[redacted] results of the tests are presented in Tables 1 and 2.

Groundwater Monitoring and Sampling

On April 13, 1993, well MW-1 was monitored with an electronic interface probe capable of detecting a thickness of 0.01 feet of phase separated hydrocarbons (PSH). The interface probe was cleaned using a TSP solution, two tap water rinses and a final distilled water rinse. Groundwater was encountered at a depth of approximately five feet below grade. PSH was not observed.

The well was purged using a hand operated pump. Approximately three borehole volumes of water were removed from the well. Approximately 20 gallons of water was purged from the well, placed into a 55 gallon drum, labeled and left on site pending disposal.

After the well recharged to at least 80 percent of static conditions, groundwater samples were collected using a disposable bailer. Samples were decanted into glass 40 ml VOA vials, capped, sealed, labeled, placed in plastic bags and placed in a ice filled chest prior to delivery to the laboratory. Chain-of-Custody documentation accompanied the samples.

Groundwater Sample Analyses

Groundwater samples were handled under chain-of-custody procedures and delivered to Transglobal Environmental Geochemistry, Inc. (TEG), and Analytical Technologies, Inc. (ATI) state-certified hazardous waste analytical laboratories. Laboratory reports and chain-of-custody documents are attached (Appendix III).

The groundwater sample collected from well MW-1, was tested for TPH in general accordance with Modified EPA Method 8015, benzene, ethylbenzene, toluene, and xylenes (BTEX) in general accordance with EPA Method 602 and organic lead and total lead in general accordance with EPA Method 7421. The results of the tests are presented in Table 3.

FINDINGS

Geology/Hydrogeology

The region around the site is underlain by undifferentiated granitic rocks of the Southern California Batholith. This basement complex is unconformably overlain by sediments derived from tertiary and quaternary marine and non-marine sedimentary deposits. Those deposits have commonly been reworked to form alluvium and slopewash deposits.

The local geology beneath the site is interpreted to consist of an alluvium and slopewash mantle which at some undetermined depth overlays a layer of weathered rock and crystalline bedrock.

Upon review of a "Regional Hydrographic Basin Base Map" published by the San Diego County Planning Department, Cartographic Services Section (Map No. 88, August 1973), the site was interpreted to be located within the Coches Hydrographic Subarea (7.13) of the San Diego Hydrological Unit. Existing beneficial uses of groundwater for this subarea are reported to include: municipal, agriculture and industrial service supply.

Groundwater was encountered at an approximate depth of 4 feet below grade during drilling on April 9, 1993 and at a depth of approximately 5 feet below grade on April 13, 1993. The first encountered ground water beneath the site is interpreted to be from an unconfined aquifer.

Soil Sample Test Results

Soil Samples Collected From Monitoring Well MW-1

One soil sample (sample 2042) collected during the drilling of well MW-1 was selected for laboratory analysis. Soil sample 2042 was collected at a depth of approximately five feet below grade, near the top of the field interpreted water table. As shown on Tables 1 and 2, this sample had no detectable concentrations of TPH, benzene, toluene, ethylbenzene, xylenes or organic lead.

Soil Samples Collected From Soil Stockpiles A and B

All four soil samples collected from Stockpiles A and B were selected for laboratory testing. As shown on Table 1, all four samples had no detectable TPH concentrations.

Groundwater Sample Test Results

The sample collected from well MW-1 was selected for laboratory analysis. As shown on Table 3 this sample had no detectable concentrations of TPH, benzene, toluene, ethylbenzene, xylenes, organic lead, and a total lead concentration of 0.015 mg/l.

CONCLUSIONS

Based on the data reviewed and obtained as part of this assessment, current regulatory guidelines, and our experience, in our professional judgment we have made the following conclusions:

- There is a very low likelihood that groundwater beneath the site in the vicinity of the former UST has been impacted by a release of petroleum hydrocarbons from the former UST.

- There is a very low likelihood that soil in the existing stockpiles contain detectable concentrations of TPH.

RECOMMENDATIONS

This report should be sent to the HMMD for review regarding the following issues:

- Results from this and previous site assessments indicate that the soil and groundwater in the vicinity of the former UST is not impacted with fuel hydrocarbons. It is recommended that the HMMD consider closing this case.

- Because it appears that the existing soil stockpiles do not contain detectable concentrations of TPH, it is recommended that the HMMD grant approval for the on-site disposal of this soil.

- Provided that the HMMD grants site closure, it is recommended that the HMMD approves the destruction of monitoring well MW-1 and the backfilling of the former UST excavation.

We have enjoyed working with you on this important project. If we may be of further assistance, please do not hesitate to contact our office at (619) 571-5500.

Respectfully,
ENVIRONMENTAL BUSINESS SOLUTIONS, INC.

Barry S. Pulver, CEG 1364
Principal

SRT1/92E1012.rp2

REGISTERED GEOLOGIST
BARRY S. PULVER
No. 1364
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

Daniel E. Johnson
Principal

TABLES

TABLE 1

SOIL SAMPLE TEST RESULTS

TOTAL PETROLEUM HYDROCARBONS

Sample No.	Sample Location	TPH (mg/kg)
2042	MW-1 at five feet	<10
2046	Stockpile A	<10
2047	Stockpile B	<10
2048	Stockpile B	<10
2049	Stockpile B	<10

Notes:

1. Samples collected by EBS on April 9, 1993.

2. Samples analyzed by TEG on April 17, 1993 in general accordance with modified EPA Method 8015.

TABLE 2

SOIL SAMPLE TEST RESULTS

BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND ORGANIC LEAD

Sample No.	Benzene	Toluene	Ethylbenzene	Xylenes	Organic Lead
2042	<0.5 mg/kg	<0.5 mg/kg	<0.5 mg/kg	<0.5 mg/kg	<0.3 mg/kg

Notes:

1. Sample collected by EBS on April 9, 1993.

2. Sample tested for benzene, toluene, ethylbenzene, and xylenes by TEG on April 17, 1993 in general accordance with EPA Method 8020.

3. Sample tested for organic lead by ATI on April 21, 1993 in general accordance with EPA Method 6010.

TABLE 3

GROUNDWATER SAMPLE (MW-1) TEST RESULTS

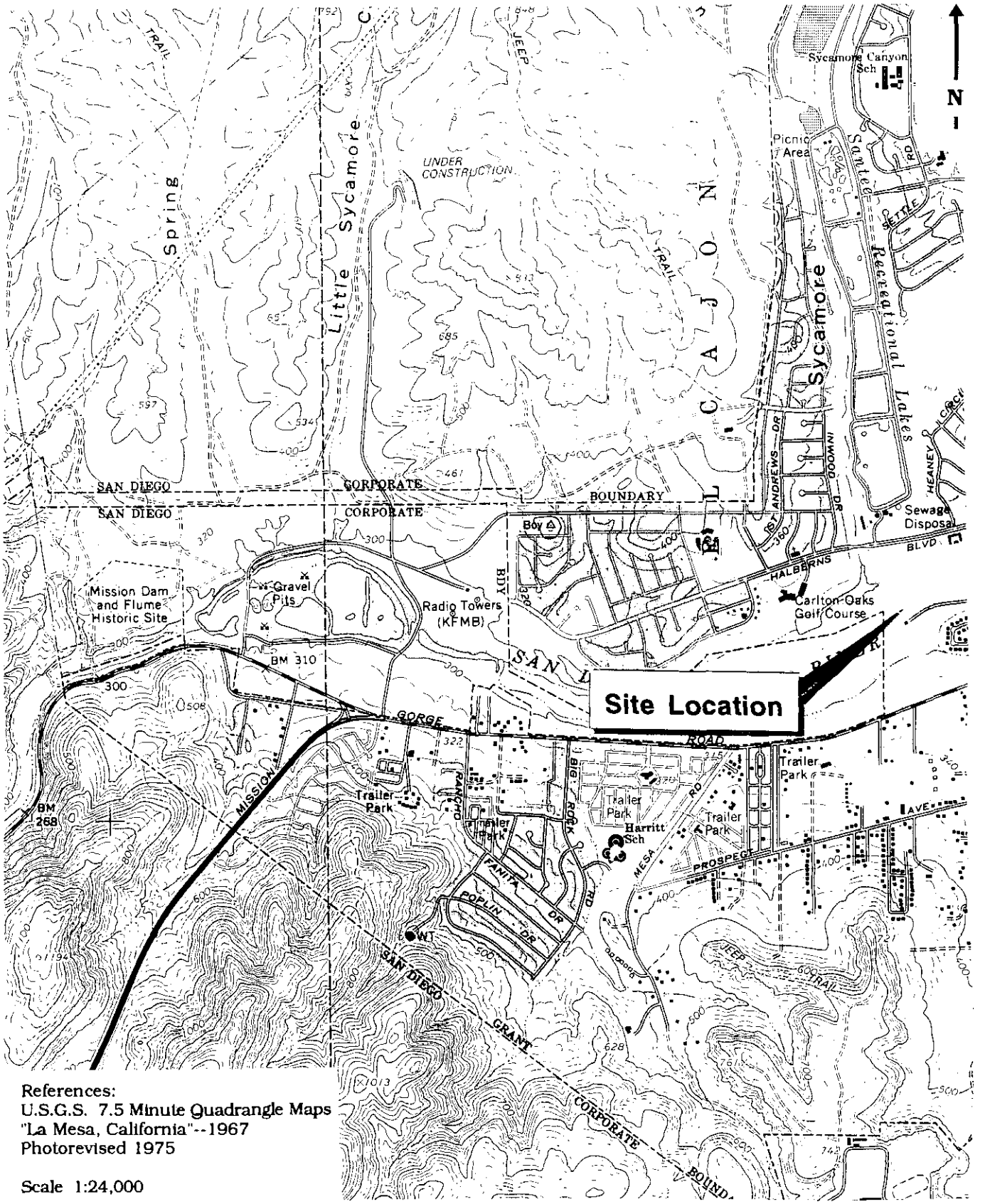
TOTAL PETROLEUM HYDROCARBONS, BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, ORGANIC LEAD, AND TOTAL LEAD

Analyte	Concentration
Total Petroleum Hydrocarbons	<500 µg/l
Benzene	<0.5 µg/l
Toluene	<0.5 µg/l
Ethylbenzene	<0.5 µg/l
Xylenes	<0.5 µg/l
Organic Lead	<0.03 mg/l
Total Lead	0.015 mg/l

Notes:

1. Sample collected from monitoring well MW-1 on April 13, 1993 by EBS.
2. Sample tested for total petroleum hydrocarbons by TEG on April 17, 1993 in general accordance with modified EPA Method 8015.
3. Sample tested for benzene, toluene, ethylbenzene, and xylenes by TEG on April 17, 1993 in general accordance with EPA Method 8020.
4. Sample tested for organic and total lead by ATI on April 23, 1993 in general accordance with EPA Method 7421.

FIGURES



References:
U.S.G.S. 7.5 Minute Quadrangle Maps
"La Mesa, California"--1967
Photorevised 1975

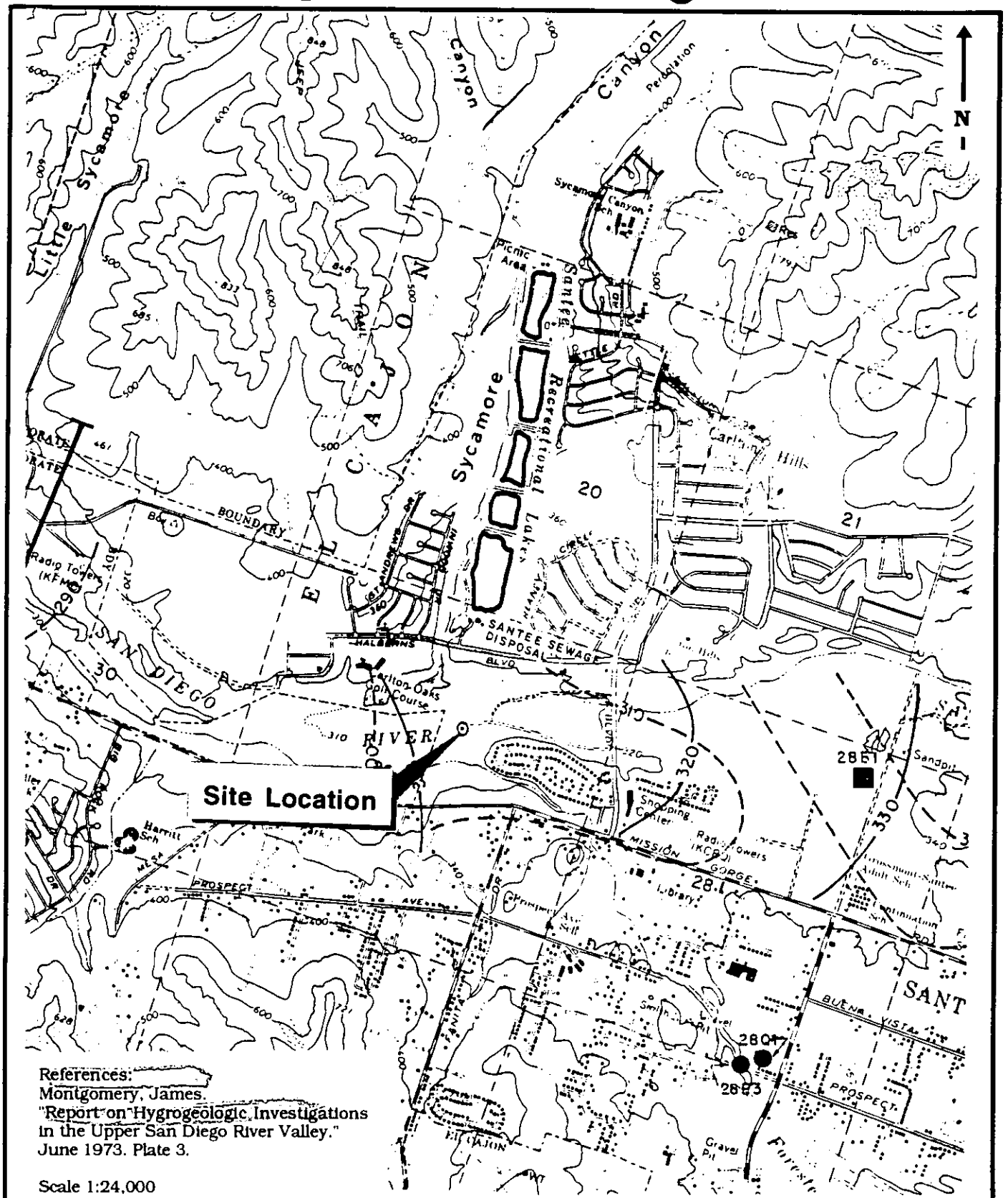
Scale 1:24,000

Environmental Business Solutions, Inc.

Site Location Map
Carlton Oaks Country Club
9200 Inwood Drive
Santee, CA 92071
March 12, 1993

Project No.
92E1021.1

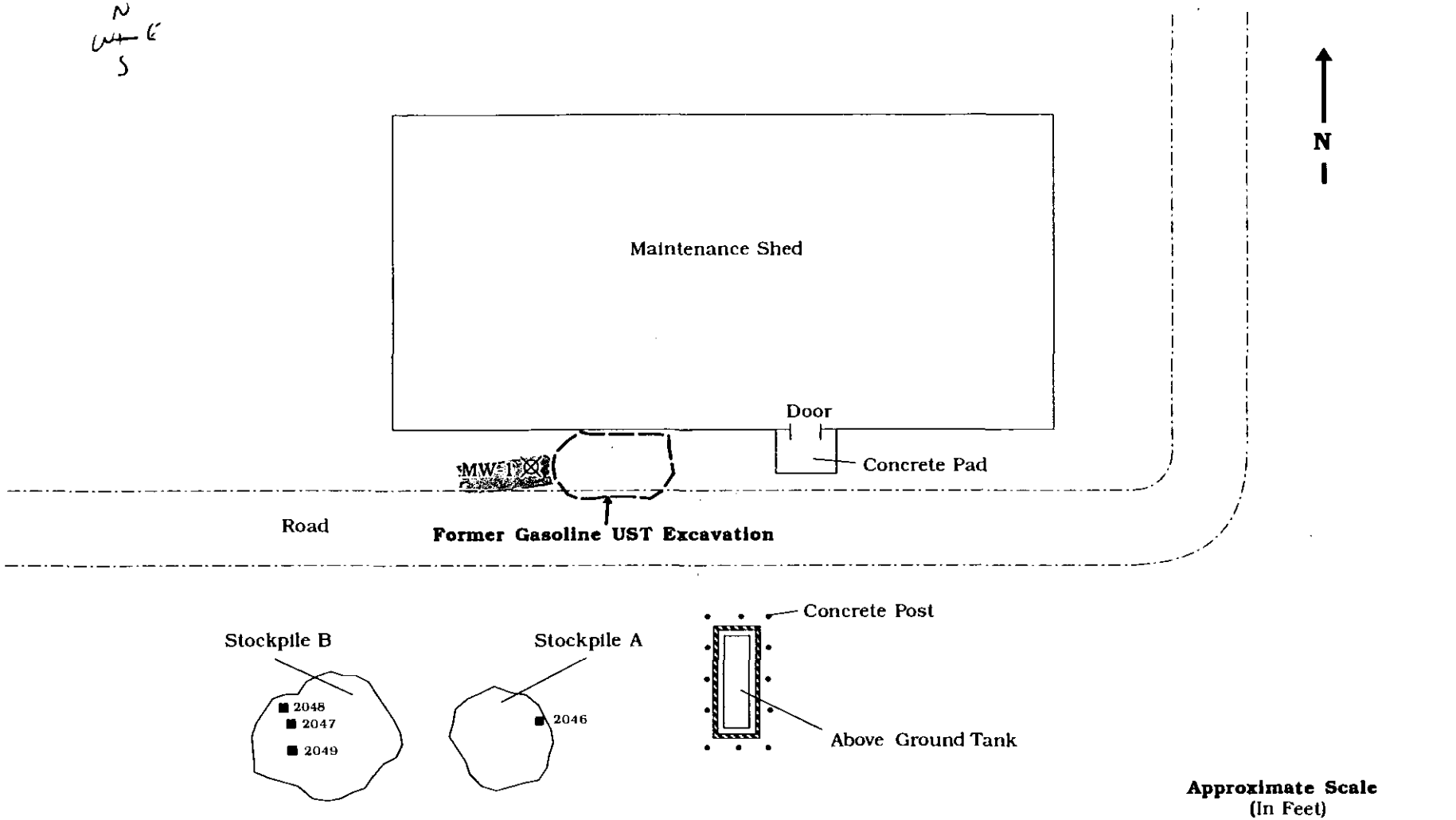
Figure 1



References:
Montgomery, James.
"Report on Hygrogeologic Investigations in the Upper San Diego River Valley."
June 1973. Plate 3.

Scale 1:24,000

Environmental Business Solutions, Inc.	**Groundwater Elevations - Upper San Diego River Valley** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 March 12, 1993	**Project No.** 92E1021.1 **Figure 2**



Disclaimer: This illustration is an interpretation and is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

Environmental Business Solutions, Inc.	**Stockpile Sample & Monitoring Well Location Map** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071	**Project No.** 92E1021.1	**Figure** 3

APPENDIX I

J. WILLIAM COX, M.D., Ph.D
DIRECTOR
[redacted]

County of San Diego

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

SITE ASSESSMENT AND MITIGATION
P.O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

RECEIVED
APR 8 1993
Environmental Business Solutions, Inc

April 7, 1993

OFFICIAL NOTICE

Mr. James Timke
Carlton Oaks Country Club
9200 Inwood Drive
Santee, CA 92071-2310

Dear Mr. Timke:

RE: UNAUTHORIZED RELEASE T2296/H20821-001 AT:
CARLTON OAKS LODGE AND COUNTRY CLUB
9200 INWOOD DRIVE
SANTEE, CA 9207-2310

This notice has been prepared in accordance with the requirements set forth in Title 23 (State Underground Storage Tank Regulations), Division 3, Amendment to Chapter 16, Article 11, Section 2722. The purpose of this letter is to notify the Responsible Party of the status of the Work Plan received by San Diego County Site Assessment and Mitigation (SA/M) on March 15, 1993.

The Work Plan, dated March 8, 1993, and prepared by Environmental Business Solutions, Inc., covers one of the following phases of corrective action:

Interim Remedial Action	( )
Preliminary Site Assessment	(X)
Soil and Water Investigation	( )
Corrective Action Plan Implementation	( )
Verification Monitoring	( )

The Work Plan has been:

(X) approved.
( ) disapproved-call the undersigned for further instructions.
( ) approved with the following changes or conditions:

Keep this letter for your records as it may be required for corrective action cost reimbursement under Senate Bill 2004 (California Health and Safety Code, Division 20, Chapter 6.75, Article 6).

Please call me at (619) 338-2492 if you have any questions.

Sincerely,

Johanna Barry

JOHANNA BARRY, Hazardous Materials Specialist
Site Assessment and Mitigation

JFB:

cc: Rosalind Dimenstein, RWQCB
Dan Johnson, Environmental Business Solutions, Inc.

WP\TIMKE.1

RECEIVED

APR 5 1993

Environmental Business Solutions, Inc.

PERMIT # W93401

A.P.N. # 383-071-02

EST # H20821

W93401
APN. 383-07102

COUNTY OF SAN DIEGO
DEPARTMENT OF HEALTH SERVICES

HAZARDOUS MATERIALS MANAGEMENT DIVISION

COUNTY OF SAN DIEGO
DEPARTMENT OF
HEALTH SERVICES

03 29-93 01101
09:52 CHECK 92114

CHECK#15011.00

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION]

SITE NAME: CARLTON OAKS COUNTY CLUB

SITE ADDRESS: 9200 INWOOD DR, SANTEE, CA 92071

PERMIT FOR: 1 GROUNDWATER MONITORING WELL

PERMIT APPROVAL DATE: 04/01/93

PERMIT EXPIRES ON: 07/29/93

PERMIT CONDITIONS:

1. All borings must be destroyed in accordance with Department of Water Resources Bulletin 74-81 and 74-90.

2. All wash water must be contained and disposed of properly.

3. Submit complete laboratory data for both soil and groundwater with the well logs.

4. Submit all the information specified in the SA/M Manual in:

   Section 1, C., 4., c).

5. All water and soil that is placed in drums must be labeled and stored as specified in the SA/M Manual in:

   Section 1, C., 5.

6. This office must be given 48 hour notice of any drilling activity on this site. Please contact Edward Sanko at (619)338-2339.

7. This office must be given advanced notification of drilling cancellation. Please contact Edward Sanko at (619)338-2339.

NOTE: This permit does not constitute approval of a workplan as defined in Section 2722 of Article 11 of C.C.R. Title 23. Workplans are required for all unauthorized release investigations in San Diego County.

APPROVED BY: K. M. HA **DATE:** 4/1/93

Notified: EBA 4/2/93 Left msg

PERMIT APPLICATION FOR GROUN. /ATER AND VADOSE MONITO .G WELLS

ASSESSORS PARCEL NO.	PROPOSED DRILLING DATE	NO. OF WELLS TO BE CONSTRUCTED
3 1 8 1 3 1 — 0 1 7 1 1 — 0 1 2	4-2-93	1 well

SITE NAME: Carlton Oaks Country Club

SITE ADDRESS STREET	CITY	ZIP
9200 Inwood Drive	Santee	92071

PROPERTY OWNER (NAME)	PHONE NO.
Eastern County Club Inc.	(619) 448-4242

MAILING ADDRESS STREET	CITY	ZIP
9200 Inwood Drive	Santee	92071

DRILLER(NAME)	LICENSE NO.	PHONE NO.
Tri County Drilling	547737	(619) 484-9775

MAILING ADDRESS STREET	CITY	ZIP
9921 Carmel Mountain Road, Suite 215	San Diego	92129

REGISTERED GEOLOGIST/ENGINEERING GEOLOGIST/CIVIL ENGINEER (RG/CEG/RCE)	REG #	PHONE NO.
Ronald D. Hallum	CEG 1484	(619) 571-5500

MAILING ADDRESS STREET	CITY	ZIP
Environmental Business Solutions 8799 Balboa Ave. Suite 290	San Diego	92123

BOND POSTED
- [X] YES [ ] NO
- By Driller

TYPE OF WELL
- [X] GROUND WATER [ ] BORING
- [ ] VADOSE [ ] OTHER

DRILLING METHOD
- [X] AUGER [ ] AIR ROTARY [ ] MUD ROTARY
- [ ] PERCUSSION [ ] OTHER

MATERIALS TO BE USED

CASING
- TYPE: PVC
- GAUGE: Sched 40
- DIAMETER: 2"
- WELL SCREEN SIZE: 0.020
- FILTER PACK Specify: #3 sand

SEAL
- [ ] NEAT CEMENT
- [X] CEMENT & BENTONITE
- [ ] OTHER

PROPOSED CONSTRUCTION

Estimated ground water depth: 6' ft

CEMENT SEAL	0	TO	2
BENTONITE SEAL	2	TO	5
FILTER PACK	5	TO	15
PERFORATION	5	TO	15

dry to below GW.

NOTE: For wells with multiple completion attach a well construction diagram

I hereby agree to comply with all regulations of Department of Health Services and with all ordinances and laws of the County of San Diego and the State of California pertaining to well construction and destruction.

Frank Peterson — DRILLER SIGNATURE — 3/25/93 DATE

Within 30 days of well completion, I will furnish the Department of Health Services with a complete and accurate well log. I will certify the design and construction of the well in accordance with the permit application

Ronald D. Hallum — RG/CEG/RCE SIGNATURE — 3/25/93 DATE

DISPOSITION OF APPLICATION [X] APPROVED [ ] DENIED

CONDITIONS: Refer to attached conditions

K. M. H. — HEALTH OFFICER — 4/1/93 DATE

OFFICE USE ONLY

JF6

NUMBER OF WELLS TO BE CONSTRUCTED: 1 X $150.00 = $ 150.00 AMOUNT DUE

ESTABLISHMENT # H20821

CHECK NO. 2348 - 3/25/93 DATE 3/26/93 PROCESSED BY EDH

PERMIT # W93401

COUNTY OF SAN DIEGO
DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES
DHS:HM-9060 (11/91)

HAZARDOUS MATERIALS MANAGEMENT DIVISION
P.O. BOX 85261
SAN DIEGO, CA. 92186-5261 (619) 338-2222

PERMIT APPLICATION SUPPLEMENT

GROUND WATER AND VADOSE MONITORING WELLS

1. Well design, logging and construction must be supervised by a geologist, Engineering Geologist or Civil Engineer who is registered or certified by the State of California.

2. Provide verification of a well Drilling C-57 license

3. Provide a plot plan giving location of existing improvements such as structures, underground tanks, underground utilities, underground piping, and the proposed monitoring and/or observation wells.

4. What is the proposed purpose of the well? To assess if groundwater is impacted by gasoline

5. What procedures will be used to prevent the well from providing an avenue to contamination during construction?
Hollow-stem augers will be used.

6. What field procedures will be utilized to determine if contamination exists?
Cuttings and samples will be screened with a PID.

7. What procedures will be used to determine whether samples will be sent for laboratory testing or archiving?
The soil sample collected near the field-interpreted saturated zone will be analyzed.

8. What constituents will be monitored and tested?
TPH (mod. EPA method 8015) and BTEX (EPA method 8020)

9. How will samples be transported and preserved? Samples will be placed in ice-filled chest and transported to lab.

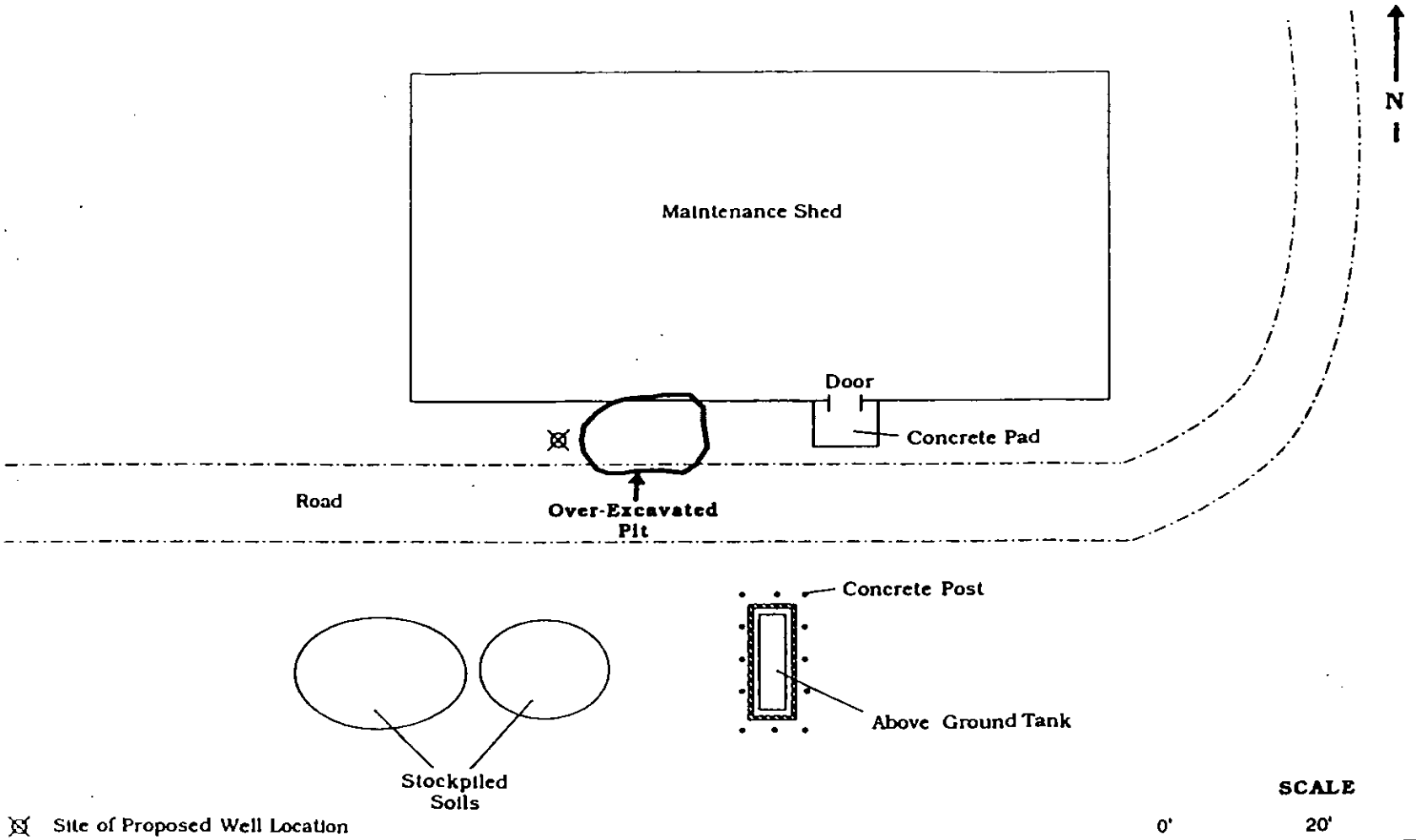
10. What sampling methods will be used?
Split Spoon sampler

11. Are you proposing a variation from the methods and/or procedures presented in the Requirements for the construction of vadose and Ground Water Monitoring Wells (dated January 1992) If yes, specify these variations?
No

12. What procedures will be used to insure no contamination will be introduced by the drilling equipment?
Drill rig will be inspected for leaks and fixed if necessary. Augers will be steam cleaned prior to drilling.

13. What methods will be used to clean sampling equipment? 3-bucket wash

14. What cleaning method will be used to clean casing and screen prior to installation?
Casing and screen are pre-cleaned.

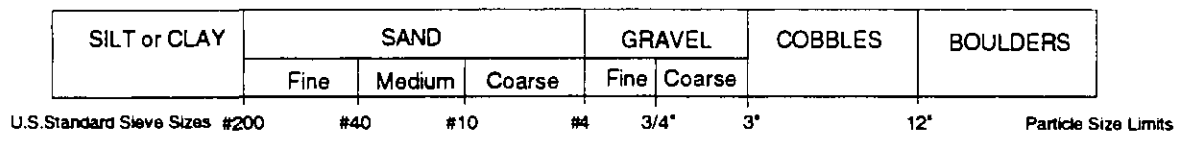


Disclaimer: This illustration is only an interpretation and is not intended to be an actual representation of the site's surface dimension. All locations and dimensions are approximate.

Environmental Business Solutions, Inc.	**Site Plan** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 March 12, 1993	**Project No.** 92E1021.1	**Figure** 3

APPENDIX II

Major Soil Divisions			Group Symbol	Descriptions
Coarse Grained Soils (>50 % of material is larger than No. 200 sieve size.)	GRAVELS (>50 % of coarse fraction is larger than No. 4 sieve size.)	Clean Gravels (<5 % fines)	GW	Well graded (poorly sorted) gravels, gravel sand mixtures, little or no fines.
			GP	Poorly graded (well sorted) gravels or gravel-sand mixtures, little or no fines.
		Gravel With Fines (>5 % fines)	GM	Silty gravels, gravel-sand-clay mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS (>50 % of coarse fraction is smaller than No. 4 sieve size.)	Clean Sands (<5 % fines)	SW	Well graded (poorly sorted) sands or gravelly sands, little or no fines.
			SP	Poorly graded (well sorted) sands or gravelly sands, little or no fines.
		Sands With Fines (>5 % fines)	SM	Silty sands, sand-silt mixtures, plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
Fine Grained Soils (> 50 % of material is smaller than No. 200 sieve size.)	SILTS AND CLAYS (Liquid limit is <50 %)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit is >50 %)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
Highly Organic Soils			Pt	Peat and other highly organic soils.



Environmental Business Solutions, Inc.

Soil Classification Legend

(Adopted from the Unified Soil Classification Standard - USCS)

Environmental Business Solutions, Inc.

BOREHOLE/WELL LOG

Number: MW -1

Client: Carlton Oaks Country Club

Job No: 92E1021.1

Sheet: 1 of 1

EBS Reps: Ron Hallum, CEG #1484

Location: 9200 Inwood Drive, Santee, California

Drilling Company/Driller: Tricounty Drilling / James

Date Drilled:	Date Drafted:	Drill Rig/Sampling Method:	Borehole Dia.:	Casing Dia.:	Surface Elevation:
4/9/93	4/15/93	SIMCO /SPT, Split Spoon Sampler	8"	2"	--

SAMPLE LOG		BOREHOLE LOG					WELL LOG
Sample Number	Lab Results TPH Gas/Diesel (ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Descripton (Formation, soil type, color, grain, minor soil component, moisture, density, odor, etc.)	
2042	ND	7	0-5	SP		ALLUVIUM: Sand, dark yellow brown to dusky yellow brown (10YR 4/2 - 2/2), very moist to saturated, loose, trace to slightly silty, very friable, very micaceous.	
2043	Not Tested	8	10-11			Sand, dark gray (N3), coarse grain, interbedded with slightly silty fine to medium grain, saturated, loose, very friable.	
2044	Not Tested	9	15-16				
2045	Not Tested	--	19-20			@20' Borehole terminated. Well set to 18.5'	

Registered Professional:_____ License#:_____ Date:_____

Support Professional:_____ License#:_____ Date:_____

APPENDIX III

teg

WSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

April 20, 1993

RECEIVED
APR 26 1993
Environmental Business Solutions, Inc.

Mr. Dan Johnson
Environmental Business Solutions, Inc.
8799 Balboa Avenue
Suite 290
San Diego, CA 92123

SUBJECT: DATA REPORT - CARLTON OAKS, SANTEE - ENVIRONMENTAL BUSINESS SOLUTIONS PROJECT #92E1021

TEG Project #930409-7

Mr. Johnson:

Please find enclosed a data report for soil and water samples from Carlton Oaks in Santee for Environmental Business Solutions. All samples were analyzed in TEG's California DOHS certified mobile laboratory (CERT #1839). TEG personnel conducted the following analyses:

- 5 soils and 1 water for total petroleum hydrocarbons (TPH) by DOHS Modified EPA Method 8015.
- 1 soil and 1 water for volatile aromatic hydrocarbons (BTEX) by EPA Method 8020/602.

The results of the analyses are summarized in the attached tables. Applicable detection limits and QA/QC data are included on the tables.

TEG appreciates the opportunity to provide analytical services to Environmental Business Solutions for this project. If you have any questions relating to these data or report, please do not hesitate to contact us.

Sincerely,

Sheri Hartman

Ms. Sheri Hartman
President

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

ENVIRONMENTAL BUSINESS SOLUTIONS
Carlton Oaks
Santee, CA

TEG Project #930409-07

TPH (DOHS Mod. EPA Method 8015) & BTEX (EPA Method 8020) ANALYSES OF SOILS

SAMPLE NUMBER	DATE ANALYZED	TPH-GAS (mg/kg)	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYLBENZ (mg/kg)	XYLENES (mg/kg)
METHOD BLANK	04/17/93	ND	ND	ND	ND	ND
2042	04/17/93	ND	ND	ND	ND	ND
2046	04/17/93	ND	--	--	--	--
2047	04/17/93	ND	--	--	--	--
2048	04/17/93	ND	--	--	--	--
2049	04/17/93	ND	--	--	--	--
2049 DUP	04/17/93	ND	--	--	--	--
DETECTION LIMITS		10	0.050	0.050	0.050	0.050

ND INDICATES NOT DETECTED AT LISTED DETECTION LIMITS

QA/QC DATA - MATRIX SPIKE ANALYSIS

Spiked Conc.	04/17/93	200	1.000	1.000	1.000	3.000
Measured Conc.		196	1.008	0.926	0.953	2.771
% Recovery		98.0%	100.8%	92.6%	95.3%	92.4%
Spiked Conc.	04/17/93	200	1.000	1.000	1.000	3.000
Measured Conc.		215	0.962	0.930	0.907	2.616
% Recovery		107.5%	96.2%	93.0%	90.7%	87.2%
RPD		9.2%	4.7%	0.4%	4.9%	5.8%

ACCEPTABLE RECOVERY LIMITS: 65% TO 135%

ANALYSES PERFORMED IN TEG'S DOHS CERTIFIED MOBILE LABORATORY (CERT #1839)

ANALYSES PERFORMED BY: MR. GREG SHERMAN

DATA REVIEWED BY: MS. SHERI HARTMAN Sheri Hartman 4/22/93

432 N. Cedros Ave., Solana Beach, CA 92075 Ph: (619) 793-0401 Fax: (619) 793-0404

TRANSGLOBAL
ENVIRONMENTAL
GEOCHEMISTRY, INC.

ENVIRONMENTAL BUSINESS SOLUTIONS
Carlton Oaks
Santee, CA

TEG Project #930409-07

TPH (DOHS Mod. EPA Method 8015) & BTEX (EPA Method 602) ANALYSES OF WATERS

SAMPLE NUMBER	DATE ANALYZED	TPH-GAS (ug/l)	BENZENE (ug/l)	TOLUENE (ug/l)	ETHYLBENZ (ug/l)	XYLENES (ug/l)
METHOD BLANK	04/17/93	ND	ND	ND	ND	ND
2050	04/17/93	ND	ND	ND	ND	ND
DETECTION LIMITS (ug/l)		500	0.5	0.5	0.5	0.5

ND INDICATES NOT DETECTED AT LISTED DETECTION LIMITS

QA/QC DATA - MATRIX SPIKE ANALYSIS - WATERS (ug/l)

Spiked Conc.	02/04/93	2000	100.0	100.0	100.0	300.0
Measured Conc.		2175	78.3	84.2	86.8	256.1
% Recovery		108.8%	78.3%	84.2%	86.8%	85.4%
Spiked Conc.	02/04/93	2000	100.0	100.0	100.0	300.0
Measured Conc.		2041	85.3	92.8	92.6	279.2
% Recovery		102.1%	85.3%	92.8%	92.6%	93.1%
RPD		6.4%	8.6%	9.8%	6.5%	8.6%

ACCEPTABLE RECOVERY LIMITS: 65% TO 135%

ANALYSES PERFORMED IN TEG'S DOHS CERTIFIED MOBILE LABORATORY (CERT #1839)

ANALYSES PEFORMED BY: MR. GREG SHERMAN

DATA REVIEWED BY: MS. SHERI HARTMAN Sheri Hartman 4/22/93

432 N. Cedros Ave., Solana Beach, CA 92075 Ph: (619) 793-0401 Fax: (619) 793-0404

teg

ANALYTICAL PROCEDURES

SAMPLE PREPARATION

Waters

Separate water aliquots are extracted for TPH analysis (gasoline and diesel) by liquid-liquid extraction with freon 113 using a modified EPA Method 3510. For volatile aromatics and chlorinated hydrocarbons (EPA 601 & 602), water samples are purged of volatiles in a Tekmar LSC-2000 purge & trap following EPA Method 5030.

Soils

Soil samples are extracted with methanol for volatile chlorinated hydrocarbon compounds (EPA 8010) and with freon 113 for volatile aromatic hydrocarbon compounds (EPA 8020) and fuel compounds (DOHS approved EPA 8015m) by hand-shaking for 2 minutes and sonification for 10 minutes.

GAS CHROMATOGRAPHY

Volatile Chlorinated Hydrocarbons

Water samples and soil extracts are purged in a Tekmar LSC-2000 purge & trap, and backflushed into a Shimadzu 14A gas chromatograph equipped with megabore capillary columns and photoionization detector (PID) and Hall electrolytic detectors following EPA Methods 601/8010 and 602/8020.

Volatile Aromatic Hydrocarbons (BTEX) & Total Fuel Hydrocarbons (TPH)

An aliquot of the soil extract is injected on-column into a Shimadzu gas chromatograph equipped with megabore capillary columns, photoionization (PID) and flame ionization detectors (FID).

TOTAL RECOVERABLE HYDROCARBONS

Extracts are scrubbed with silica gel and measured on a BUCK 404 Infrared Analyzer following EPA 418.1 protocols.

DATA ACQUISITION & PROCESSING

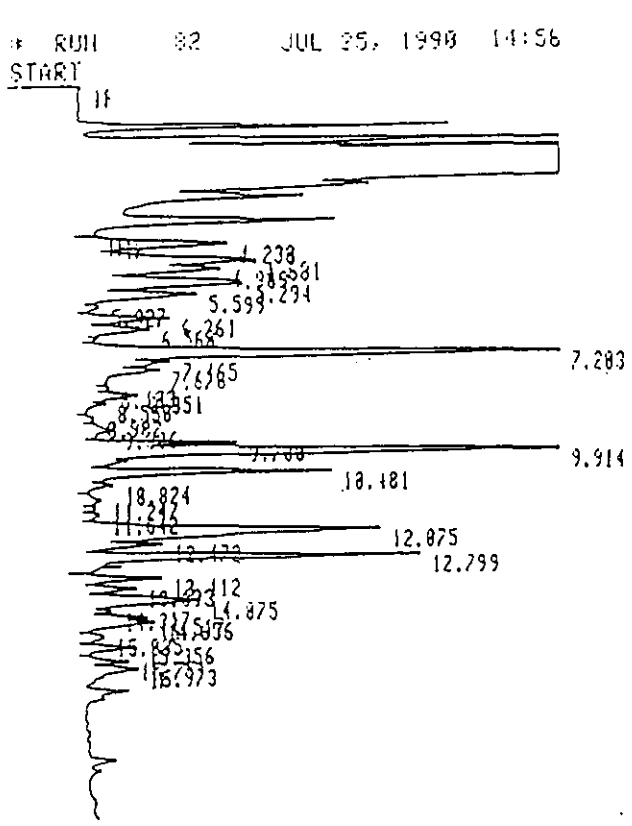
Data from the gas chromatographs are integrated and plotted by Hewlett-Packard 3393A computing integrators. Separate chromatograms are printed for each detector. The resulting chromatograms are inspected at the end of each run and the data entered into an IBM-compatible computer for on-site processing and evaluation.

432 N. Cedros Ave., Solana Beach CA 92075 Ph: (619) 793-0401 Fax: (619) 793-0404

Transglobal Environmental Geochemistry

TOTAL PETROLEUM HYDROCARBONS (EPA 8015m)

GASOLINE



STOP

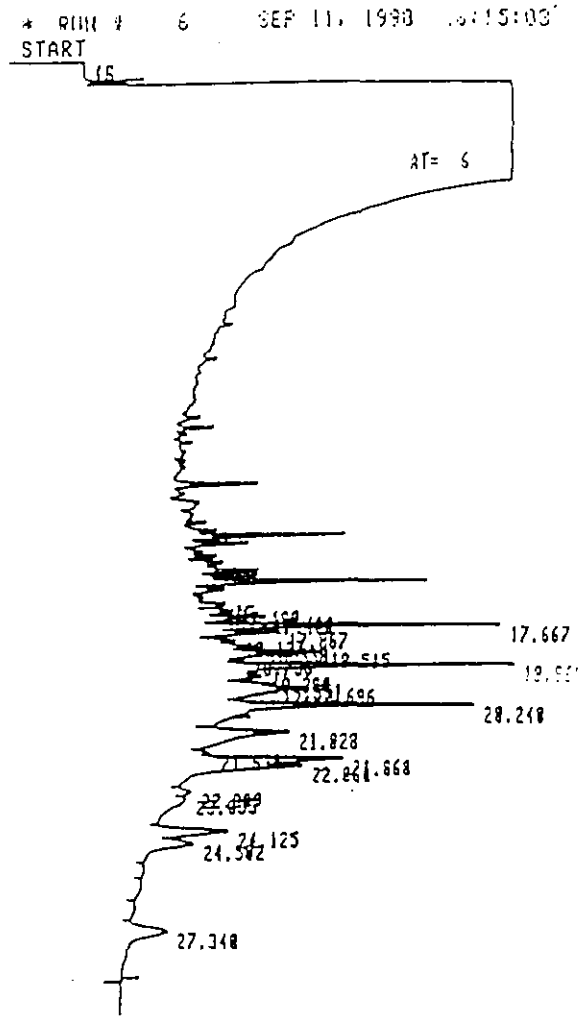
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EPA METHOD 8015

DIESEL



TIMETABLE STOP

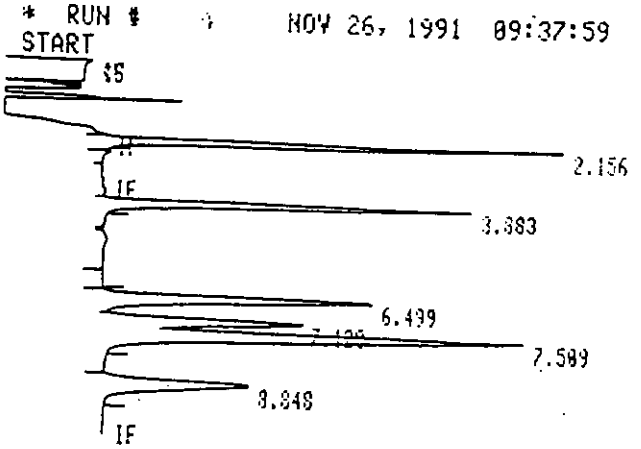
Closing signal file M:SIGNAL .BHC

RUN# 6 SEP 11, 1990 18:15:03

432 N. Cedros Ave., Solana Beach CA 92075 Ph: (619) 793-0401 Fax: (619) 793-0404

Transglobal Environmental Geochemistry

VOLATILE AROMATIC HYDROCARBONS (EPA 602/8020)



TIMETABLE STOP

Closing signal file M:SIGNAL .BNC

RUN# 4 NOV 26, 1991 09:37:59

SIGNAL FILE: M:SIGNAL.BNC

EPA8020M

ESTD

RT	TYPE	AREA	WIDTH	HEIGHT
2.156	BB	413165	.894	73440
3.883	PB	366094	.137	44456
6.499	BB	387750	.200	32291
7.128	BB	208464	.178	19467
7.589	BB	545349	.200	45373
8.848	BB	278847	.265	17522

RT	CAL#	PPM SOIL	NAME
2.156	1R	1.195	BENZENE
3.883	2R	1.221	TOLUENE
6.499	3R	1.201	CHLOROBENZ
7.128	4R	1.232	ETHYLBENZ
7.589	5R	2.342	M&P XYLENE
8.848	6R	1.250	O XYLENE

TOTAL AREA=2199569
MUL FACTOR=1.0000E+00

432 N. Cedros Ave., Solana Beach CA 92075 Ph: (619) 793-0401 Fax: (619) 793-0404

Transglobal Environmental Geochemistry

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

CHAIN-OF-CUSTODY RECORD

Fridge #6

CLIENT: Environmental Business Solutions
ADDRESS: 8799 Balboa Ave Suite 290 San Diego CA 92123
PHONE: 571-5500 FAX: 571-5357
CLIENT PROJECT #: 92E1021 PROJECT MANAGER: Dan Johnson

DATE: 4-9-93 PAGE 1 OF 1
TEG PROJECT #: 930409-7
LOCATION: Carlton Oaks / Santee
COLLECTOR: Ron Hallum DATE OF COLLECTION: 4-9-93

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES	FIELD NOTES	Total Number Of Containers	Laboratory Number
~~2046~~	~~2'~~							
2046	-2"	12:15	Soil	Glass Jar	VOA 601/8010, VOA 602/8020, VOA 624/8240, Semi Vol 625/8270, TPH 418.1	FUEL ODOR HIGHEST		
2047	-0.5'	12:25	"	"	"			
2048	-1.5'	12:30	"	"	"			
2049	-1.0'	12:35	"	"	"			
2042	4'	9:10	Soil	Glass Jar				
2043	10'	9:20	"	"		Hold		
2044	15'	9:35	"	"		"		
2045	20'	9:50	"	"		"		

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
Ronald Hallum	4-9-93 3:00		4/9/93
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☒ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Analytical Technologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego CA 92121 (619) 458-9141

ATI I.D.: 304245

April 23, 1993

RECEIVED
APR 26 1993
Environmental Business Solutions, Inc

ENVIRONMENTAL BUSINESS SOLUTIONS
8799 BALBOA AVENUE, SUITE 290
SAN DIEGO, CA 92123

Project Name: (NONE)
Project # : 92E1021

Attention: DAN JOHNSON

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
April 19, 1993	1	SOIL

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

The results of these analyses and the quality control data are enclosed.

ROBERT L MANRIQUEZ
PROJECT MANAGER

M. E. Shigley
LABORATORY MANAGER

cc: CHRIS MALECKI
TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.
432 N. CEDROS
SOLONA BEACH, CA 92075

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021
Project Name: (NONE)

Report Date: April 23, 1993
ATI I.D. : 304245

ATI #	Client Description	Matrix	Date Collected
1	2042	SOIL	09-APR-93

---TOTALS---

Matrix	# Samples
SOIL	1

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D.: 304245
Project Name: (NONE)

Analysis	Technique/Description
EPA 6010 (LEAD, ORGANIC)	INDUCTIVELY COUPLED ARGON PLASMA

Analytical Technologies, Inc.

METALS RESULTS

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D.: 304245
Project Name: (NONE)

Sample #	Client ID	Matrix	Date Sampled	Date Received
1	2042	SOIL	09-APR-93	19-APR-93

Parameter	Units	1
ORGANIC LEAD	MG/KG	<0.3

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

DUP/MS

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D. : 304245
Project Name: (NONE)

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
ORGANIC LEAD	304245-01	MG/KG	<0.3	<0.3	0	4.3	5.2	83

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result

Analytical Technologies, Inc.

METALS - QUALITY CONTROL

BLANK SPIKE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D. : 304245
Project Name: (NONE)

Parameters	Blank Spike ID#	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
ORGANIC LEAD	35036	MG/KG	<0.3	4.9	5.3	92

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result

DATE LISTING FOR INORGANICS FOR PROJECT ID ENVBUS1001 23-APR-93 PAGE 1
FOR ACCESSIONS RECEIVED WITHIN THE LAST 90 DAYS
ACCESSION # 304245

Project Id: ENVBUS1001 Proj Name : (NONE)
Proj Num : 92E1021 Accession : 304245

Test: EPA 6010 (LEAD, ORGANIC)

ATI #	Matrix	Client ID	Sampled	Received	Analyzed	Prep Date
1	SOIL	2042	09-APR-93	19-APR-93	21-APR-93	20-APR-93

ACCESSION #: 304245 INITIALS: KT

SAMPLE CONDITION UPON RECEIPT CHECKLIST
(FOR RE-ACCESSIONS, COMPLETE #7 THRU #9)

1	Does this project require special handling according to NEESA Levels C, D, AFOEHL or CLP protocols? If yes, complete a) thru c) a) Cooler temperature _____ b) pH sample aliquoted: yes / no / n/a c) LOT #'s: _____	YES	(NO)
2	Are custody seals present on cooler?	YES	(NO)
	If yes, are seals intact?	YES	NO
3	Are custody seals present on sample containers?	YES	(NO)
	If yes, are seals intact?	YES	NO
4	Is there a Chain-Of-Custody (COC)*?	(YES)	NO
5	Is the COC* complete? Relinquished: (yes/no) Requested analysis: (yes/no)	(YES)	NO
6	Is the COC* in agreement with the samples received? # Samples: (yes/no) Sample ID's: (yes/no) Matrix: (yes/no) # containers: (yes/no)	(YES)	NO
7	Are the samples preserved correctly?	(YES)	NO
8	Is there enough sample for all the requested analyses?	(YES)	NO
9	Are all samples within holding times for the requested analyses?	(YES)	NO
10	Were the samples received cold?	(YES)	NO
11	Were all sample containers received intact (ie. not broken, leaking, etc.)?	(YES)	NO
12	Are samples requiring no headspace, headspace free? N/A	(YES)	NO
13	Are there special comments on the Chain of Custody which require client contact?	YES	(N/A)
14	If yes, was ATI Project Manager notified?	YES	NO

Describe "no" items: _____

_____

_____

_____

Was client contacted? yes / no

If yes, Date: _____ Name of Person contacted: _____

Describe actions taken or client instructions: _____

_____

_____

_____

*Or other representative documents, letters, and/or shipping memos

teg

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, INC.

ATI# 304245

CHAIN-OF-CUSTODY RECORD

CLIENT: ENVIRONMENTAL BUSINESS SOLUTIONS
ADDRESS: 8799 BALBOA AV #290 SD CA 92123
PHONE: 571-5500 FAX: 571 5357
CLIENT PROJECT #: 92E1021 PROJECT MANAGER: DAN JOHNSON

DATE: 19 APRIL 1993 PAGE 1 OF 1
TEG PROJECT #: 930409-7
LOCATION: CARLTON OAKS / SANTEE
COLLECTOR: RON HALLUM DATE OF COLLECTION: 9APR93

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (g & d)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
2042	4'	9:10	SOIL	JAR											X							

RELINQUISHED BY: (Signature) M-MYERS DATE/TIME 4/19/93 1635
RECEIVED BY: (Signature) Ruth Prange DATE/TIME 4/19/93 1635
RELINQUISHED BY: (Signature) DATE/TIME
RECEIVED BY: (Signature) DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	1
CHAIN OF CUSTODY SEALS Y/N/NA	N
SEALS INTACT? Y/N/NA	NA
RECEIVED GOOD COND./COLD	Y/Y
NOTES:	

LABORATORY NOTES:

Analytical Technologies, Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 304204

June 09, 1993

RECEIVED
JUN 10 1993
Environmental Business Solutions, Inc

ENVIRONMENTAL BUSINESS SOLUTIONS
8799 BALBOA AVENUE, SUITE 290
SAN DIEGO, CA 92123

Project Name: (NONE)
Project # : 92E1021

Attention: BARRY PULVER

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
April 15, 1993	1	WATER

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

The results of these analyses and the quality control data are enclosed.

ROBERT L MANRIQUEZ
PROJECT MANAGER

M. E. Shigley
M. E. Shigley
LABORATORY MANAGER

SAMPLE CROSS REFERENCE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021
Project Name: (NONE)

Report Date: June 09, 1993
ATI I.D. : 304204

ATI #	Client Description	Matrix	Date Collected
1	2050	WATER	13-APR-93

---TOTALS---

Matrix	# Samples
WATER	1

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

ANALYTICAL SCHEDULE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D.: 304204
Project Name: (NONE)

Analysis	Technique/Description
EPA 7421 (LEAD)	ATOMIC ABSORPTION/GRAPHITE FURNACE
EPA 7421 (LEAD, ORGANIC)	ATOMIC ABSORPTION/GRAPHITE FURNACE

METALS RESULTS

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D.: 304204
Project Name: (NONE)

Sample #	Client ID	Matrix	Date Sampled	Date Received
1	2050	WATER	13-APR-93	15-APR-93

Parameter	Units	1
ORGANIC LEAD	MG/L	<0.03
LEAD	MG/L	0.015

METALS - QUALITY CONTROL

DUP/MS

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D. : 304204
Project Name: (NONE)

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
LEAD	304201-02	MG/L	<0.002	<0.002	0	2.09	2.00	105
ORGANIC LEAD	304159-02	MG/L	<0.03	<0.03	0	0.06	0.05	120

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result

METALS - QUALITY CONTROL

BLANK SPIKE

Client : ENVIRONMENTAL BUSINESS SOLUTIONS
Project # : 92E1021 ATI I.D. : 304204
Project Name: (NONE)

Parameters	Blank Spike ID#	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
LEAD	35133	MG/L	<0.002	2.06	2.00	103
ORGANIC LEAD	35134	MG/L	<0.03	0.05	0.05	100

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result

Environmental Business Solutions, Inc.
"Providing Economic Environmental Solutions to the Business Community"

FAX TRANSMITTAL COVER LETTER

Date: 4-6-98
Fax # 338-2176
Number of Pages: 4 (including this cover page)

Please deliver the following pages to:
Name: Johanna Barez
Company: HMMD
Telephone # 338-2492

Transmittal from:
Name: Dan Johnson

Comments: Carlton Oaks Country Club
Health and Safety Plan

Hard copy to follow in the mail: [X] Yes [ ] No

For receipt confirmation, ... the specified number ... 5330

Environmental Business Solutions, Inc.
"Providing Economic Environmental Solutions to the Business Community"

SITE HEALTH AND SAFETY PLAN

Project: Carlton Oaks Country Club — Job No. 92E107
Site Location: 9200 Inwood Drive, Santee, California

Project Description: Install one groundwater monitoring well to a maximum depth of 20 feet below grade.

Chemicals of Concern: Previous soil sampling and testing indicated Total Petroleum Hydrocarbon concentrations (by modified EPA Method 8015) ranging from less than 10 parts per million to 675 parts per million. According to information provided by our client the only substance stored in the underground tank at this site was gasoline.

GENERAL HEALTH AND SAFETY CONSIDERATIONS

ALL WORKERS WITHIN THE EXCLUSION ZONE MUST HAVE COMPLETED A 40 HR.

CHEMICAL HAZARDS: *Workers may be exposed to gasoline vapors*

ACTION LEVEL: According to Cal/OSHA, when work is performed in areas where VOC's exceed 50 ppm of gasoline as measured by PID, respiratory protection shall be worn. However, an action level of 25 ppm gasoline as measured by PID in the breathing zone for respiratory protection shall be established for this project.

RESPIRATORY PROTECTIVE EQUIPMENT: All workers within the exclusion zone must have, at a minimum, half face respirators with an organic cartridge present at the worksite.

PROTECTIVE CLOTHING AND EQUIPMENT: Level D Personal Protective Equipment (PPE) is the minimum PPE required at this site. Level D PPE includes hard hat, steel-toed shoes, long pants, safety glasses with side shields, hearing protection, and safety vests.

PHYSICAL HAZARDS: Underground/overhead utility lines; flying objects; pinch points, exertion strain; tripping; slipping falling; moving equipment; vehicular traffic.

SITE SPECIFIC INSTRUCTIONS: No eating or smoking is allowed at the worksite. Air monitoring will be performed by EBS personnel. If PID readings exceed 25 ppm, as measured in the breathing zone, benzene specific detector tubes will be used to monitor the air. If PID readings exceed 25 ppm and benzene concentrations are less than 1 ppm work may continue but respirators will be required. If benzene concentrations exceed 1 ppm work will stop until vapors decrease. **All site workers are encouraged to wear appropriate respirators at anytime which vapors are a problem or a nuisance.**

NEAREST HOSPITAL: Grossmont Hospital

DIRECTIONS TO HOSPITAL: SEE ATTACHED MAP. East on Carlton Oaks Drive, South on Carlton Oaks Boulevard, West on Mission Gorge Road, South on Fanita Road, East on Navajo Road, South on [illegible] East on Grossmont Center Drive to hospital.

IN CASE OF EMERGENCY DIAL 911

Carlton Oaks Country Club
Project Number 9201021
Date: April 6, 1993

ACKNOWLEDGEMENT SHEET

Your signature indicates that you have read and understood the information presented on the preceding page.

NAME	SIGNATURE	COMPANY	DATE

RH/mt-92e1021.hsp


SAN DIEGO
EL CAJON
LA MESA

Environmental Business Solutions, Inc.
"Providing Economic Environmentol Solutions to the Business Community"

RECEIVED
MAR 15 1 56 PM '93
ENVIRONMENTAL
HEALTH SERVICES

March 8, 1993

Ms. Johanna Barry, REHS
County of San Diego
Department of Health Services
Environmental Health Services
Hazardous Materials Management Division
Site Assessment and Mitigation Program
P.O. Box 85261
San Diego, CA 92186-5261

RE: **Workplan - Carlton Oaks Country Club**
9200 Inwood Drive, Santee, California, 92071
HMMD T# 2296: H# 20821-001

Dear Ms. Barry:

Environmental Business Solutions, Inc. has prepared a workplan for the installation of one groundwater monitoring well to be installed at the above-referenced site.

BACKGROUND

It is our understanding that a 1,000 gallon gasoline underground storage tank (UST) was removed from the site on or about April 22, 1992. We also understand that the soil underneath the tank was sampled by a contractor, under the direction of an inspector from the County of San Diego, Hazardous Materials Management Division (HMMD). The soil samples were submitted to a certified hazardous waste laboratory, Quality Assurance Labs, under chain-of-custody procedures for analytical testing.

Two soil samples were tested for total petroleum hydrocarbons (TPH) from the gasoline tank excavation. The TPH results were reported to be 675 parts per million (ppm) for soil sample T-1 collected from the excavation at approximately 5.5 feet below grade and 843 ppm for soil sample T-2 also collected from the excavation at a depth of 5.5 feet below grade. Since these samples from the excavation had concentrations greater than the clean-up levels typically assigned to a beneficial groundwater area (such as this site), the HMMD requested a site assessment be conducted at the site.

On June 19, 1992 EBS collected soil samples and excavated soil in and around the vicinity of the former UST. A report was issued on July 17, 1992 which presented the results of the soil sampling activity. As presented in the report, soil samples collected below a depth of 6 feet below grade generally had no detectable TPH concentrations. In order to remove soil with detectable TPH, soil excavations extended to a total depth of approximately seven feet below grade.

On August 13, 1992 the HMMD issued a letter stating that additional work needed to be performed prior to the HMMD closing the site. On October 8, 1992 a meeting was held between representatives of EBS and Ms. Johanna Barry and Mr. Mike Vernetti of the HMMD to discuss

additional work which was requested. It was decided, and agreed to by the HMMD representatives, to install one groundwater well at the site to assess groundwater quality in the immediate vicinity of the excavation. This decision was based upon considerable data indicating the direction of groundwater flow in the site vicinity.

A June 1973 study conducted by the then Santee County Water District shows a groundwater gradient generally from the east to the west (Figure 2) (James M. Montgomery, Consulting Engineers, Inc., "Report On the Hydrogeologic Investigation in the Upper San Diego River Valley", June 1973.) Therefore, it is our opinion that a groundwater sample representative of groundwater quality down gradient from the former UST excavation (potential source) can be obtained by placing a groundwater monitoring well immediately to the west of the former excavation (Figure 3).

OBJECTIVE

The objective of this proposed scope of services is to assess the likelihood that the shallow groundwater near the former UST excavation has been impacted by petroleum hydrocarbons.

SCOPE OF SERVICES

The scope of services that will be used to meet the objective includes the following Phases:

Phase I ***Preparation of this Workplan and Amendments to the Existing Site Health and Safety Plan, and Preparation of a Well Permit***

EBS has prepared this written workplan which is intended to satisfy the HMMD requirements. The workplan describes the field procedures to be utilized in the field investigation, including the type of laboratory analyses to be performed on the soil samples, and the soil sample collection method.

The existing health and safety plan will be amended to reflect the current work scope. A health and safety plan for work conducted at the site and workers within the "exclusion" zone is required pursuant to the regulations found in 29 CFR Part 1910.120. As such, a health and safety plan will be prepared which will outline the potential chemical and physical hazards that may be encountered during drilling and sampling activities. The appropriate personal protective equipment and emergency response procedures for the site-specific chemical and physical hazards will be detailed in this plan. EBS and contracted personnel involved with the proposed field work will be required to sign this document in order to encourage proper health and safety practices.

Prior to installing the monitoring well, a permit will be completed and submitted to the HMMD for approval. The permit will be signed by the appropriately licensed professional and submitted with the required fee to the HMMD.

Phase II **Installation and Sampling of One Groundwater Monitoring Well**

As discussed with the HMMD, one groundwater monitoring well (well) will be installed adjacent, to the west of the existing excavation. The well will be placed in the interpreted down-gradient direction from the excavation.

The well will be drilled to a maximum depth of 20 feet below grade. The well will be constructed using two-inch diameter PVC casing and screen. The surface completion will consist of a flush mounted traffic rated road box. Soil cuttings generated from drilling of the well will be placed in the existing soil stockpile.

Soil samples will be collected at five foot depth intervals, or when significant lithological changes occur, during drilling of the well. The soil samples will be collected and stored in tightly closed containers for handling and transportation activities. The sample containers will be packed in ice-filled coolers. Chain-of-Custody procedures will be implemented for sample tracking. A written analytical report will be provided by the laboratory upon the completion of the sample testing. The soil sample collected near the field-interpreted saturated zone will be analyzed for TPH by modified EPA Method 8015, and for benzene, toulene, ethylbenzene and xylenes (BTEX) in general accordance with EPA Method 8020.

During well installation the well will be developed in general accordance with HMMD guidelines. Within approximately 48 hours of well development the well will be purged and sampled generally following HMMD guidelines. Development and purging water will be placed in an appropriate drum and stored on site. One water sample will be collected and will be analyzed for TPH by modified EPA Method 8015, and for benzene, toulene, ethylbenzene, and xylenes (BTEX) in general accordance with EPA Method 8020.

The soil stockpile present at the site from tank removal and overexcavation activities will be tested in general conformance to HMMD guidelines. A maximum of four soil samples will be collected from randomly selected locations within the stockpile and will be analyzed for TPH by modified EPA Method 8015, and for benzene, toulene, ethylbenzene, and xylenes (BTEX) in general accordance with EPA Method 8020.

Phase III Report Preparation

Based on the findings of the field investigation and laboratory results from the above scope of services and the historical findings provide by the Client, an assessment report (Report) will be written for HMMD compliance. The Report will include laboratory reports, chain-of-custodies, permits, illustrations reflecting the sampled subsurface, a log of the soil boring and a construction "as built" of the well, tabulated analytical results and appropriate support documentation.

The Report will be peer reviewed and signed by a Certified Engineering Geologist. In addition to the above described report, in order to comply with the requirements of the well permit, a "thirty day" report will be prepared and submitted to the HMMD.

If we may assist you in any way, please do not hesitate to call our office at (619) 571-5500. We look forward to working with you on this project.

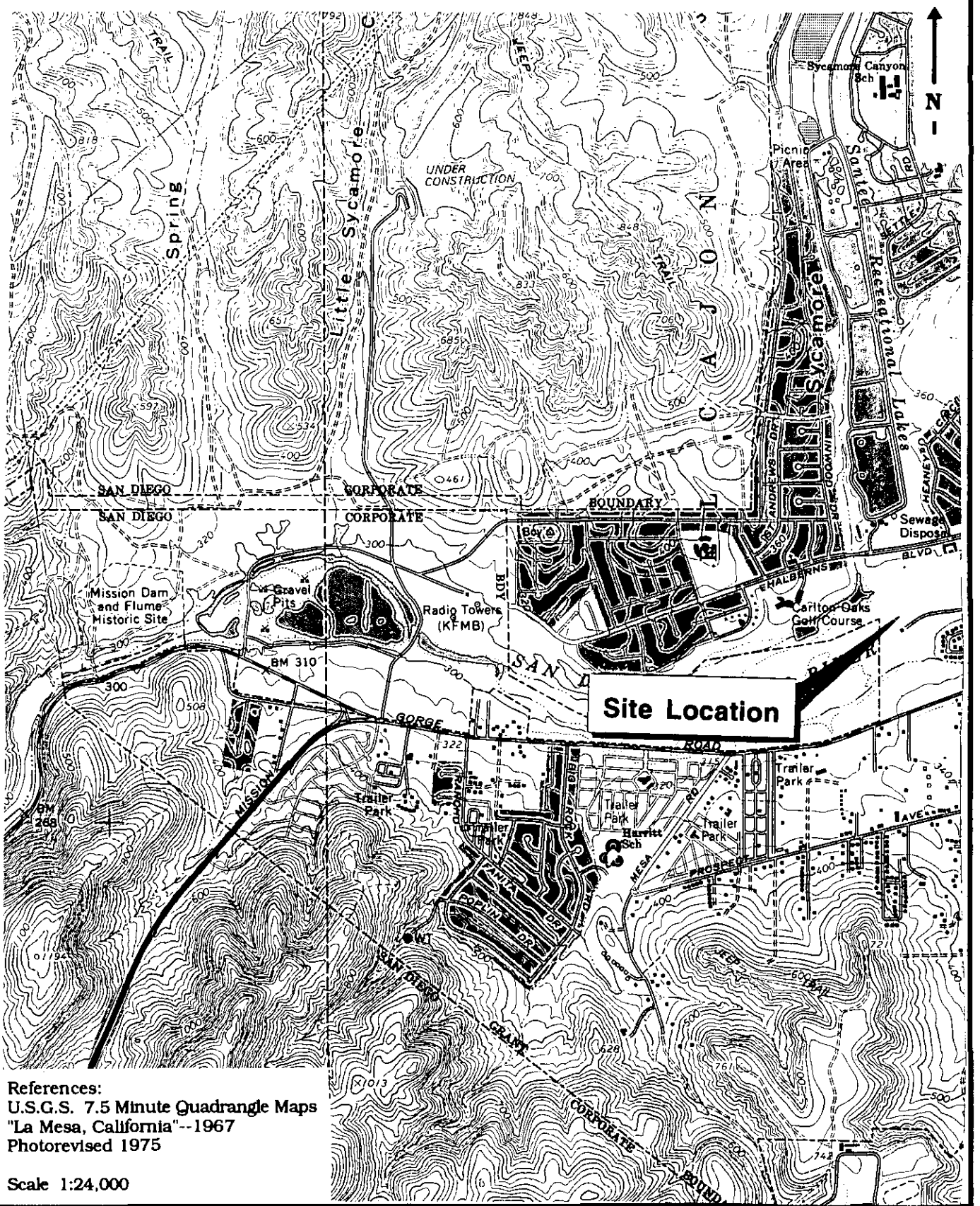
Respectfully,
ENVIRONMENTAL BUSINESS SOLUTIONS, INC.

Daniel E. Johnson
Principal

Barry S. Pulver, CEG 1364
Principal

Michelle Grantham
Assistant Staff Geologist

cc: Susan Reid, General Manager, Carlton Oaks Country Club



References:
U.S.G.S. 7.5 Minute Quadrangle Maps
"La Mesa, California"--1967
Photorevised 1975

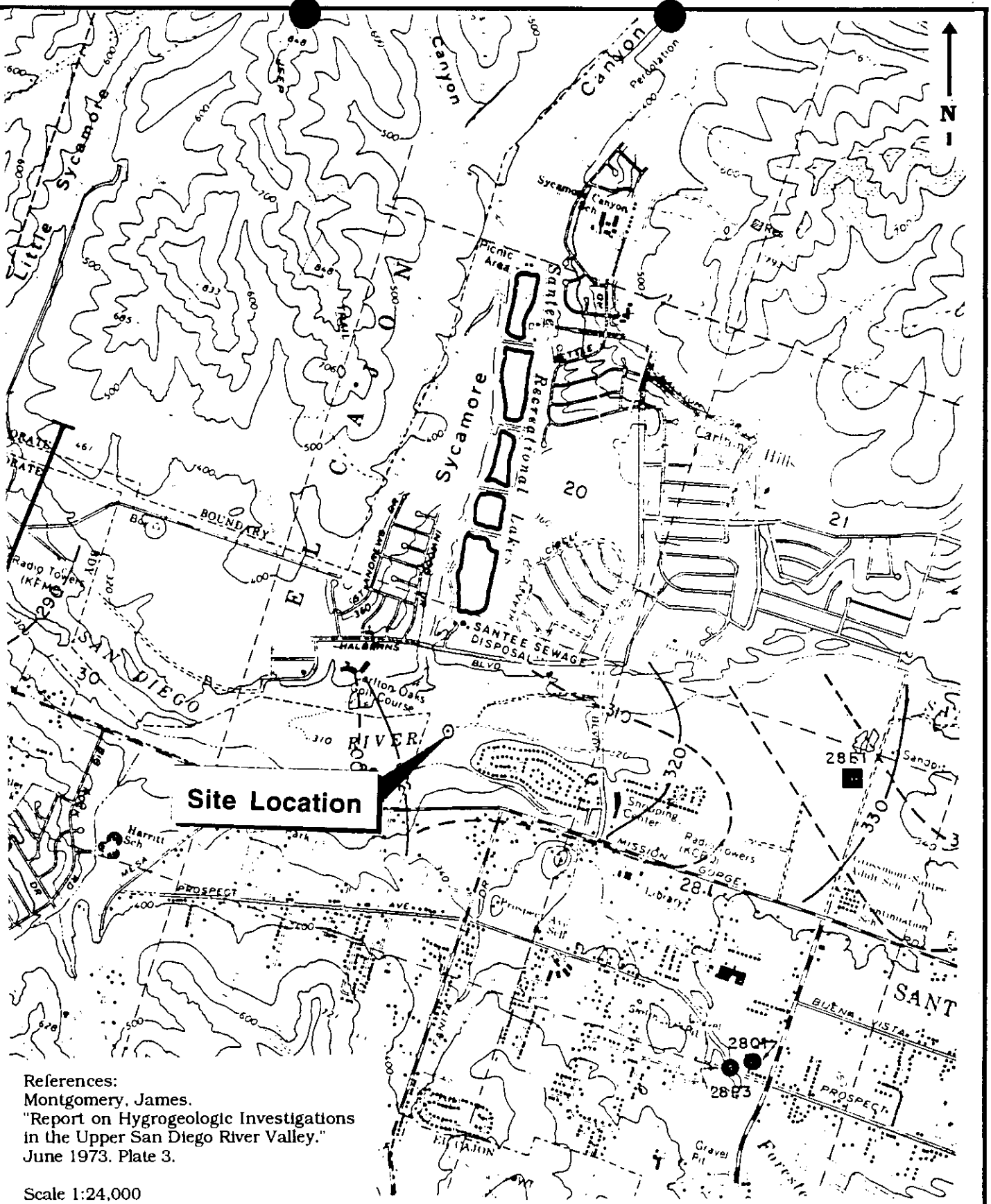
Scale 1:24,000

Environmental Business Solutions, Inc.

Site Location Map
Carlton Oaks Country Club
9200 Inwood Drive
Santee, CA 92071
March 12, 1993

Project No.
92E1021.1

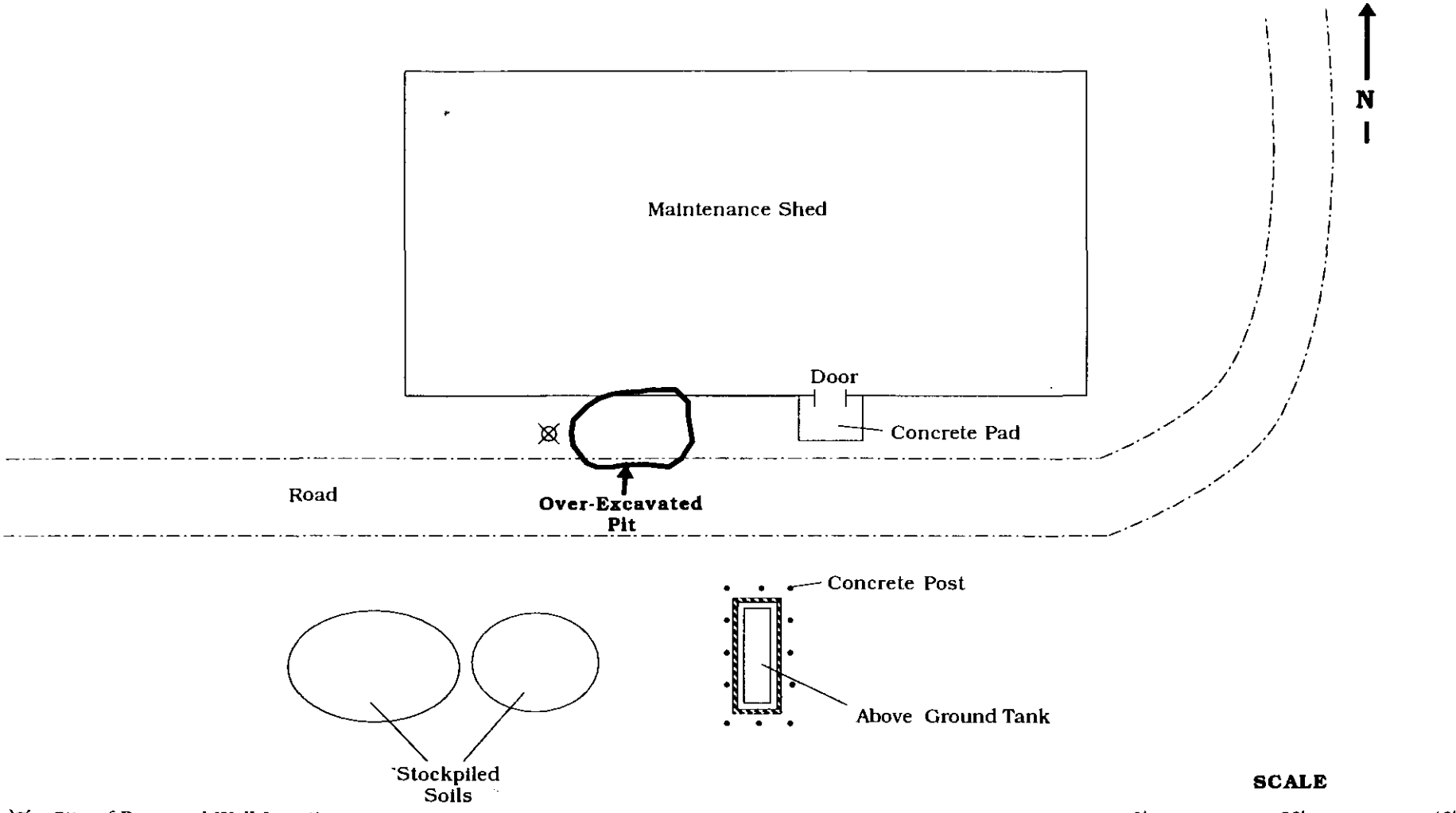
Figure 1



References:
Montgomery, James.
"Report on Hygrogeologic Investigations in the Upper San Diego River Valley."
June 1973. Plate 3.

Scale 1:24,000

Environmental Business Solutions, Inc.	**Groundwater Elevations - Upper San Diego River Valley** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 March 12, 1993	**Project No.** 92E1021.1 **Figure 2**



Disclaimer: This illustration is only an interpretation and is not intended to be an actual representation of the site's surface dimension. All locations and dimensions are approximate.

Environmental Business Solutions, Inc.	**Site Plan** Carlton Oaks Country Club 9200 Inwood Drive Santee, CA 92071 March 12, 1993	**Project No.** 92E1021.1	**Figure** 3

T.B.

ROBERT K. ROSS, M.D.
DIRECTOR

County of San Diego

DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES

OFFICE OF THE DEPUTY DIRECTOR
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2211
Fax #: 338-2174

SITE ASSESSMENT AND MITIGATION DIVISION
P. O. BOX 85261
SAN DIEGO, CA 92186-5261
(619) 338-2222

November 2, 1993

Mr. James Timke and Ms. Susan Reid
Carlton Oaks Lodge & Country Club
9200 Inwood Drive
Santee, CA 92071-2310

Dear Mr. Timke and Ms. Reid:

RE: UNAUTHORIZED RELEASE #T2296/H20821-001
9200 INWOOD DRIVE, SANTEE, CA 92071-2310

The site remediation information submitted to this agency by Environmental Business Solutions, Inc. summarizing the site characterization and mitigation activities at the above referenced location has been reviewed. With the provision that the information provided to this agency was accurate and representative of existing conditions, it is the position of this office that **no further action is required at this time.**

This information has also been discussed with staff of the Regional Water Quality Control Board (RWQCB). Based on the information submitted and current requirements, the RWQCB concurs with the determination of this agency that no further action is required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at the site. Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this agency of any changes in report content, future contamination findings, or site usage.

Thank you for your efforts in resolving this matter. Please contact Site Assessment and Mitigation Division, Johanna Barry, at (619) 338-2492 if you require additional assistance.

Sincerely,

CHUCK PRYATEL, Division Manager
Site Assessment and Mitigation Division

CP:cl

cc: Donna Schimeck, SWRCB
RWQCB

WP\T2296

DAP 10-28-93

SITE ASSESSMENT CASE CLOSURE SUMMARY

HMMD FILE NUMBER H 20821 -00 1 (CIRCLE ONE) T82 (T83) H75 DATE: 9/17/93
RESPONSIBLE PARTY: EASTERN COUNTRY CLUB STAFF: J F B
CONTACT PERSON: SUSAN REIO / JAMES FIMKE PHONE: (619) 448-2080
SITE/FACILITY NAME: CARLTON OAKS LODGE AND COUNTRY CLUB
SITE/FACILITY ADDRESS: 9200 INWOOD DRIVE, SANTEE CA 92071
MAILING ADDRESS: SAME

IF YES TO ANY OF THE FOLLOWING, EXPLAIN IN THE COMMENTS SECTION BELOW.

	(CIRCLE ONE)	
OFF SITE IMPACTS?	YES (NO)	
BENEFICIAL USE GROUND WATER? *	(YES) NO	*COMMENT NOT NECESSARY
GROUND WATER AFFECTED?	YES (NO)	
KNOWN PUBLIC HEALTH THREATS?	YES (NO)	
ADDITIONAL MONITORING REQUIRED?	YES (NO)	
CONSULTANT'S REPORT(S) ON FILE?	(YES) NO	
FULL DELINEATION ACHIEVED?	(YES) NO	

CONCURRENCE WITH RWQCB STAFF: CMW DATE: 9/29/93

DISPOSAL AND REMEDIATION

CAUSE AND TYPE OF RELEASE: GASOLINE CONTAMINATION FROM LEAK IN UST SYSTEM
QTY OF SOIL/PRODUCT DISPOSED: 50 CUBIC YDS MANIFESTS PROVIDED? YES NO
DISPOSAL LOCATION: ON-SITE DISPOSAL OF STOCKPILED SOIL (STOCKPILED SOIL DOES NOT CONTAIN DETECTABLE CONCENTRATIONS OF TPH.
CLEANUP LEVELS ESTABLISHED: 100 PPM

TYPE OF REMEDIATION USED AT SITE: OVEREXCAVATION OF SOIL AND VERIFICATION SAMPLING.

MAXIMUM CONCENTRATIONS REMAINING ON SITE: LEVELS REMAINING BELOW CLEAN-UP LEVELS

HALOGENATED ORG.	BTXE	VOLATILE ORG.
	ND	

SEMIVOLATILE ORG.	PESTICIDES & PCB's	8015/DHS - TPH
		NO

ORGANIC LEAD	418.1 - TRPH	
NO		

ADDITIONAL COMMENTS: ALL VERIFICATION SOIL SAMPLES ND; ONE GROUNDWATER SAMPLE TAKEN. RESULTS OF GROUNDWATER SAMPLE: NON-DETECT. RECEIVED CONCURRENCE FOR SITE CLOSURE FROM KEVIN HEATON (SAIM) ON 9/16/93.

6-12

SDT 6-6-96 6-17-96

COUNTY OF SAN DIEGO

EST. NUMBER H 20821

DATE 6/4/96

PAGE 1 OF 2

BUS CODE K26

SPECIALIST D. HOGERVORST

COMPLIANCE INSPECTION REPORT

BUSINESS NAME CARLTON OAKS LDGE. & C.C.

ADDRESS 9200 INWOOD DR.

CITY/ZIP SANTEE, CA. 92071

CONTACT Jim Timke

TITLE MANAGER

PHONE 448-2080

On the above date an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (H&S) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

JUN 20 1996

Office Use Only

Annual inspection conducted today. D 7/26/96 cas

Please correct the following w/in 30 days.

(1) Contaminated rag containers not completely closed – close drum with ring and bolt secured to prevent vapors from escaping to air.

(2) Annual disposals of waste oil have been made which exceeds the 90-day storage limit. Dispose of hazardous waste within 90 days after 55 gallons has accumulated.

(3) The compressed gasses have increased in amount (Ox/Acetylene); Argon now stored onsite and has not been reported. Provide an update of any increase of hazardous materials stored onsite to this department w/in 30 days.

(4) Emergency contact information has not been updated – notify this department with any changes to future contacts within 30 days.

- Provide product labeling for "mixed fuel" drum and 50 gallon oil tank.
- Keep disposal receipts for all wastes disposed.
- 1996 employee training not yet conducted.

James C. Timke
Signature of Business Representative

6-4-96
Title

Department of Environmental Health, Hazardous Materials Management Division, P.O. Box 85261, San Diego, CA, 92186-5261

(619) 338-2222

DISTRIBUTION: WHITE-RETURN TO HMMD
YELLOW-BUSINESS RETAINS

DEH:HM-924 (5/95) NCR

County of San Diego
Department of Environmental Health

COUNTY OF SAN DIEGO

EST. NUMBER H 20821

DATE 6 / 4 / 96

PAGE 2 OF 2

COMPLIANCE INSPECTION REPORT

BUSINESS ADDRESS: Carlton Oaks Lodge & C.C. 9300 Inwood Dr. Santee

VIOLATION REPORT: The items checked below refer to specific section numbers of Titles 19/22/23 of the California Code of Regulations (CCR), Chapters 6.5, 6.7, 6.95 of the Health and Safety Code (HSC), and/or the San Diego County Code (SDCC).

I HAZARDOUS WASTE REQUIREMENTS:

RECORD KEEPING

- [ ] Health Permit not obtained SDCC 68.905 — V0108 W
- [ ] No EPA Identification Number 66262.12 — V0105 W
- [ ] Waste Manifests/Receipts not on-site for 3 years 66262.40 — V0118 W
- [ ] Manifest not properly completed 66262.23 — V0120 W
- [ ] Manifest copy not sent to CAL-EPA 66262.23 — V0115 W
- [ ] TSDF signed-manifest not on-site 66262.40 — V0121 W
- [ ] Biennial report not sent to CAL-EPA 66262.41 — V0122 W
- [ ] LDR Documentation not available 66268.7 — V0123 W
- [ ] Exception Rpt. not filed with CAL-EPA 66262.42 — V0116 W
- [ ] Operating TSDF without authorization 25201 — V0124 W

STORAGE AND HANDLING

- [X] Waste stored longer than 90 days 66262.34 — V0221 W
- [ ] Waste container missing/improperly labeled 66262.34 — V0222 W
- [ ] Haz Materials not properly labeled 25124 — V0223 W
- [X] Waste container not kept closed 66265.173 — V0202 W
- [ ] Waste container in poor condition 66265.171 — V0205 W
- [ ] Waste container(s) not properly managed 66265.173 — V0210 W
- [ ] Damaged container not repackaged 66265.171 — V0226 W
- [ ] Container incompatible with waste 66265.172 — V0207 W
- [ ] Incompatibles in the same container 66265.177 — V0224 W
- [ ] Incompatibles not stored separately 66265.177 — V0213 W
- [ ] Ignitible Wastes less than 50 feet 66265.176 — V0214 W
- [ ] Ignitible Wastes not grounded 66265.31 — V0215 W
- [ ] Storage area not inspected weekly 66265.174 — V0216 W

DISPOSAL AND TRANSPORTATION

- [ ] Unauth. disposal of waste to ____ 25189.5 — V0313 W
- [ ] Waste determination not made 66262.11 — V0319 W
- [ ] Unlawful transport of haz. waste 25163 — V0315 W
- [ ] Waste transported without manifest 66262.20 — V0316 W
- [ ] No Extremely Haz. Waste Permit 67430.1 — V0317 W

TRAINING, CONTINGENCY PLAN & EMERGENCY PROCEDURES

- [ ] Training records unavailable 66265.16 — V0405 W
- [ ] Training program not adequate 66265.16 — V0406 W
- [ ] Facility not designed to minimize release 66265.31 — V0501 W
- [ ] Spill control equip not available 66265.32 — V0508 W
- [ ] Aisle space is obstructed 66265.35 — V0509 W
- [ ] Contingency plan not prepared and/or on file 66265.51, 66265.53 — V0609 W

MISCELLANEOUS

- [ ] Waste oil contaminated 25250.7 — V0225 W
- [ ] Used oil filters improperly managed 66266.130 — V0701 W
- [ ] Damaged batteries improperly managed 66266.81 — V0702 W

II UNDERGROUND STORAGE TANK (UST) REQUIREMENTS:

GENERAL UST REQUIREMENTS

- [ ] Health Permit not obtained 68.1005, 25284 — V3002 T
- [ ] Repair/modify/close permit not obtained 68.1005 — V3007 T
- [ ] UST Permit Application not submitted 25286(a) — V3010 T
- [ ] Operating permit conditions violated 2712 — V3011 T
- [ ] Failed to notify HMMD of changes 25284 — V3012 T
- [ ] No owner/operator agreement 25293 — V3005 T
- [ ] No records of financial coverage 25292.2 — V3013 T
- [ ] No maint/monit/calib records available 2712(b), 2641i — V3001 T

MONITORING REQUIREMENTS (SINGLE WALL)

- [ ] Leak Detection Method does not meet performance standards 2643 — V3014 T
- [ ] Annual Integrity test not conducted 25292 — V3015 T
- [ ] Copy of tank test not submitted to HMMD within 30 days 2643 — V3016 T
- [ ] Manual tank gauging (<2000 gal) 2645 not done properly — V3017 T
- [ ] Reconciliation not done properly 2646 — V3018 T
- [ ] Reconciliation not approved for facility 2646 — V3019 T
- [ ] Dispenser meter(s) not calib annually 2646 — V3020 T
- [ ] Improper liquid measurements 2646 — V3021 T
- [ ] Stick in poor condition 2646 — V3022 T
- [ ] Improper monthly reconciliation 2646 — V3023 T
- [ ] Failed to report excessive variation 2646 — V3024 T
- [ ] Pressurized Product Piping Leak Device not tested annually 25292 — V3025 T

MONITORING REQUIREMENTS (DOUBLE WALL)

- [ ] Monitoring system not functional 2632 — V3026 T
- [ ] No written monitoring procedure 2632 — V3027 T
- [ ] Written response plan not available 2632 — V3028 T
- [ ] Spill/Overfill equip. not maintained or installed 2635 — V3029 T

RELEASE REPORTING

- [ ] Failure to report an unauthorized release 25295 — V3009 T
- [ ] Release record log not available 2651, 2650 — V3030 T
- [ ] No leak report/investigation/action 2652 — V3031 T

CLOSURE

- [ ] Temporary closure req. not completed 2671 — V3008 T
- [ ] Abandoned tank not properly closed 25298 — V3032 T
- [ ] Permanent closure req. not completed 2672 — V3033 T

III HAZARDOUS MATERIALS BUSINESS PLAN REQUIREMENTS:

RECORD KEEPING

- [ ] Health Permit not obtained SDCC 68.1105 — V2001 W
- [X] Business Plan not established/implemented 25503.5 — V2002 W
- [ ] Business Plan not submitted to HMMD 25505 — V2007 W
- [X] Business Plan not amended 25505 — V2003 W
- [X] Personnel Training Records not available 2732 — V2302 W

RELEASE REPORTING

- [ ] Failure to report a release/threatened release 25507 — V2008 W

BUSINESS PLAN ELEMENTS

- [ ] Emergency Response Plan inadequate 25504 — V2201 W
- [X] Emergency Contacts not provided/current 25509 — V2203 W
- [ ] Personnel Training Program inadequate 25504 — V2301 W
- [X] Inventory is incomplete 25504 — V2005 W
- [X] Site Map is not sufficient 25509 — V2202 W
- [ ] Acutely Haz. Mat. not registered 25533 — V2009 W

An inspection summary report will be mailed shortly. All violations must be corrected. Please call (619) 338-2222 if you have any questions.

James G Tuch — 6-4-96

ESTABLISHMENT REPRESENTATIVE — TITLE

Department of Environmental Health, Hazardous Materials Management Division, P. O. Box 85261, San Diego, CA 92186-5261

DISTRIBUTION: WHITE-RETURN TO HMMD
YELLOW-BUSINESS RETAINS

DEH:HM-923 (Rev. 1/95) NCR

OFFICE USE ONLY: 1-Update 2-Add

Change Mailing 2/10/88 * Biology 31-T50

CODE # OFFICE USE ONLY

File Key Number 20821

HAZARDOUS MATERIALS MANAGEMENT QUESTIONNAIRE/PERMIT APPLICATION

Please complete the following information. If information at left is correct, skip to item #A3. If corrections are necessary, also complete #A1 and #A2.

A1. ESTABLISHMENT NAME
X CARLTON OAKS LODGE & COUNTRY CLUB (7–36)

A2. MAILING ADDRESS
STREET NUMBER: 9200 (37–44)
STREET DIRECTION (N,S,E,W,NE,SW,ETC.): (45–46)
STREET NAME OR P.O. BOX NUMBER: 9200 INWOOD DR (47–66)
CITY: SANTEE (67–81)
STATE: CA (82–83)
ZIP CODE: 92071 (84–92)
BLDG/PLANT NO: (93–96)

A3. ESTABLISHMENT PHONE
X 4484242 (97–103)

A4. CONTACT PERSON
X MARGE AUGUST (104–123)

A5. ESTABLISHMENT ADDRESS (IF DIFFERENT FROM MAILING ADDRESS)
STREET NUMBER: (7–14)
STREET DIRECTION (N,S,E,W,NE,SW,ETC.): (15–16)
STREET NAME: (17–36)
CITY: (37–51)
STATE: (52–53)
ZIP CODE: (54–62)
BLDG/PLANT NO: (63–66)

A6. OWNER NAME
X ALLAN R KUNIMOTO (67–86)

A7. OWNER PHONE (87–96)

A8. NAME OF PREVIOUS OWNER
CARLTON OAKS LTD (97–116)

A9. DATE YOU STARTED OR ASSUMED BUSINESS
MO DAY YR: 11 87 (117–122)

A10. REASON FOR APPLICATION
3
1 = New
2 = Re-Open
3 = Change of Owner

A11. TOTAL NUMBER OF EMPLOYEES
60 (8–11)

A12. DO YOU HAVE PERMITS FOR ANY OF THE FOLLOWING:

	YES	NO
AIR POLLUTION CONTROL DISTRICT		
SEWER DISTRICT (FOR INDUSTRIAL WASTES)		
HAZARDOUS WASTE FACILITY		
HAZARDOUS WASTE HAULER REGISTRATION		
REGIONAL WATER QUALITY CONTROL BOARD		

FOR OFFICE USE ONLY (12–16, 17–22, 23–34, 35–38, 39)

OFFICE USE ONLY

SIC 1 (52–55)	SIC 2 (56–59)	CENSUS TRACT (68–74)	INC CODE	BUSINESS CODE (75–77)	ANNUAL FEE (78–83)	EXPIRATION DATE MO DAY (84–87)
			X	T50		0331

STATUS (88)	FIRE (89)	WATER (91)	SEWER (93)	(95)

DHS:HM-906 (7/87)

County of San Diego
Department of Health Services

HAZARDOUS MATERIALS SUMMARY

Complete the following information regarding the handling of hazardous materials at your business or service. Check one statement.

[X] This business or service does generate hazardous waste, handles hazardous materials subject to the inventory requirements and/or has underground storage tanks that requires a permit from the San Diego County Department of Health Services.

[ ] I have determined that this business or service does not generate hazardous waste, handle hazardous materials subject to the inventory requirements or has underground storage tanks requiring permits from the San Diego County Department of Health Services.

I declare under penalty of perjury that to the best of my knowledge and belief the statements made herein are correct and true. I consent to all necessary inspections allowed by law and incidental to the issuance of required permit(s) and the operation of this business.

Signature Margaret Wagner Title Bkpr.

Date 1-11-88 Phone _____

Type of Business Lodge & Country Club

Please complete the business information on the reverse of this page and return this questionnaire to the San Diego County Department of Health Services in the pre-addressed return envelope or mail using the following address.

SAN DIEGO COUNTY DEPARTMENT OF HEALTH SERVICES
ENVIRONMENTAL HEALTH SERVICES
HAZARDOUS MATERIALS MANAGEMENT DIVISION
P O BOX 85261
SAN DIEGO CA 92138-5261

If a San Diego County Hazardous Materials Management Permit is required for your business or service a representative of this Department will complete an inspection of your business. Permit fees will be determined from the inspection and a billing statement will be mailed.

NOTE: If you do not use hazardous materials, generate hazardous waste, or have underground storage tanks you are still required to return this form.

A representative of the San Diego County Department of Health Services may contact you to verify the information provided on this questionnaire.

COUNTY OF SAN DIEGO

Page 1 of 1

EST. NO. H 20821
DATE 8-31-98
TIME START 930 END 1145
BUS. CODE 1440
SPECIALIST L Thompson

COMPLIANCE INSPECTION REPORT

BUSINESS NAME Carlton Oaks Lodge & Country Club
ADDRESS 9200 Inwood Dr
CITY/ZIP Santee 92071
CONTACT Jim Timke
TITLE mgr
PHONE 448-2080

On the above date an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (H&S) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

Routine Inspection.

SEP 09 1998

Office Use Only

Remarks:

- Health permit is posted and current
- Disposal receipts for waste were reviewed
- Reviewed the haz mat business plan
- Reviewed employee training

James C. Timke — Signature of Business Representative
8-31-98 — Date Signed
Superintendent — Title

Department of Environmental Health, Hazardous Materials Management Division, P.O. Box 129261, San Diego, CA, 92112-9261

(619) 338-2222

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

PAGE 1 OF 2
EST. NO. H 20821
DATE 05-23-01
TIME START 3:50 END 5:00
BUS. CODE K-40
SPECIALIST R. CATUBAY
CONTACT ADAM MORA
TITLE MAINTENANCE
PHONE (619) 448-2080

BUSINESS NAME CARLTON OAKS LODGE & CTY LODGE
ADDRESS 9200 INWOOD DR
CITY/ZIP SANTEE CA 92071

6-45-01 CNB FILE

On the above date, an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (H&S) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

Office Use Only

ROUTINE INSPECTION

JUN 13 2001

OBSERVATIONS:

- HEALTH PERMIT ON-SITE, EXP 04-30-02
- HAZ MAT BUSINESS PLAN ON-SITE & CURRENT
- EMER RESPONSE INFO UPDATED
- ANNUAL HAZ WASTE QUANTITY VERIFIED
- ANNUAL HAZ MATERIAL INVENTORY VERIFIED
- HAZ WASTE MANIFESTS/DISPOSAL RECEIPTS ON-SITE & REVIEWED
- EMPLOYEE TRAINING RECORDS ON-SITE & REVIEWED
- ALL HAZ WASTE CONTAINERS PROPERLY LABELED & STORED

NO VIOLATIONS WERE OBSERVED DURING THIS INSPECTION

Signature of Business Representative | 5/23/01 Date Signed | V/P. Title

Department of Environmental Health, Hazardous Materials Division, P.O. Box 129261, San Diego, CA 92112-9261; (619) 338-2222

DEH:HM-924 (Rev. 2/99) NCR

DISTRIBUTION: WHITE- RETURN TO HMD
YELLOW-BUSINESS RETAINS

County of San Diego
Department of Environmental Health

COUNTY OF SAN DIEGO

EST. NUMBER H 2082

COMPLIANCE INSPECTION REPORT

DATE 5/23/01

PAGE 2 OF 2

BUSINESS ADDRESS: 9200 INWOOD DR, SANTEE, CA 92071

VIOLATION REPORT: The items checked below refer to specific section numbers of Titles 19/22/23 of the California Code of Regulations (CCR), Chapters 6.5, 6.7, 6.95 of the Health and Safety Code (HSC), and/or the San Diego County Code (SDCC).

I HAZARDOUS WASTE REQUIREMENTS:

RECORD KEEPING

- [ ] Health Permit not obtained SDCC 68.905 — V0108 W____
- [ ] No EPA Identification Number 66262.12 — V0105 W____
- [ ] Waste Manifests/Receipts not on-site for 3 years 66262.40 — V0118 W____
- [ ] Manifest not properly completed 66262.23 — V0120 W____
- [ ] Manifest copy not sent to DTSC 66262.23 — V0115 W____
- [ ] TSDF signed-manifest not on-site 66262.40 — V0121 W____
- [ ] Biennial report not sent to DTSC 66262.41 — V0122 W____
- [ ] LDR Documentation not available 66268.7 — V0123 W____
- [ ] Exception Rpt. not filed with DTSC 66262.42 — V0116 W____
- [ ] Operating TSDF without authorization 25201 — V0124 W____

STORAGE AND HANDLING

- [ ] Waste stored longer than 90, 180, or 270 days 66262.34 — V0221 W____
- [ ] Failure to clean up hazwaste off of floor surface 66262.10b — V0313 W____
- [ ] Waste container missing/improperly labeled 66262.34 — V0222 W____
- [ ] Haz Materials not properly labeled 25124 — V0223 W____
- [ ] Waste container not kept closed 66265.173 — V0202 W____
- [ ] Waste container in poor condition 66265.171 — V0205 W____
- [ ] Waste container(s) not properly managed 66265.173 — V0210 W____
- [ ] Damaged container not repackaged 66265.171 — V0226 W____
- [ ] Container incompatible with waste 66265.172 — V0207 W____
- [ ] Incompatibles in the same container 66265.177 — V0224 W____
- [ ] Incompatibles not stored separately 66265.177 — V0213 W____
- [ ] Ignitible Waste less than 50 feet 66265.176 — V0214 W____
- [ ] Ignitible Waste not grounded 66265.31 — V0215 W____
- [ ] Storage area not inspected weekly 66265.174 — V0216 W____

DISPOSAL AND TRANSPORTATION

- [ ] Unauth. disposal of waste to _____ 25189.5 — V0313 W____
- [ ] Waste determination not made 66262.11 — V0319 W____
- [ ] Unlawful transport of haz. waste 25163 — V0315 W____
- [ ] Waste transported without manifest 66262.20 — V0316 W____
- [ ] Extremely Haz Waste Permit not obtained 25205.7 — V0317 W____

TRAINING, CONTINGENCY PLAN & EMERGENCY PROCEDURES

- [ ] Training records unavailable 66265.16 — V0405 W____
- [ ] Training program not adequate 66265.16 — V0406 W____
- [ ] Facility not designed to minimize release 66265.31 — V0501 W____
- [ ] Spill control equip not available 66265.32 — V0508 W____
- [ ] Aisle space is obstructed 66265.35 — V0509 W____
- [ ] Contingency plan not prepared and/or on file 66265.51, 66265.53 — V0609 W____

MISCELLANEOUS

- [ ] Waste oil contaminated 25250.7 — V0225 W____
- [ ] Used oil filters improperly managed 66266.130 — V0701 W____
- [ ] Damaged batteries improperly managed 66266.81 — V0702 W____
- [ ] Facility has failed to notify local CUPA and DTSC of onsite treatment of hazardous waste (tiered permitting) — V0125 W____
- [ ] Onsite treatment of waste without authorization 25201 — V0125 W____

II UNDERGROUND STORAGE TANK (UST) REQUIREMENTS:

GENERAL UST REQUIREMENTS

- [ ] Health Permit not obtained 68.1005, 25284 — V3002 T____
- [ ] Repair/modify/close permit not obtained 68.1005 — V3007 T____
- [ ] UST Permit Application not submitted 25286(a) — V3010 T____
- [ ] Operating permit conditions violated 2712 — V3011 T____
- [ ] Failed to notify HMMD of changes 25284 — V3012 T____
- [ ] No owner/operator agreement 25284 — V3005 T____
- [ ] No records of financial coverage 25292.2 — V3013 T____
- [ ] No maint/monit/calib records available 2712(b), 2641(j) — V3001 T____
- [ ] Monitoring Equip. not tested annually 2630, 2641 — V3003 T____

MONITORING REQUIREMENTS (SINGLE WALL)

- [ ] Leak Detection Method does not meet performance standards 2643 — V3014 T____
- [ ] Integrity test not conducted 25292 — V3015 T____
- [ ] Copy of tank test not submitted to HMMD within 30 days 2643 — V3016 T____
- [ ] Manual tank gauging (<2000 gal) 2645 not done properly — V3017 T____
- [ ] Reconciliation not done properly 2646 — V3018 T____
- [ ] Reconciliation not approved for facility 2646 — V3019 T____
- [ ] Dispenser meter(s) not calib annually 2646 — V3020 T____
- [ ] Improper liquid measurements 2646 — V3021 T____
- [ ] Stick in poor condition 2646 — V3022 T____
- [ ] Improper monthly reconciliation 2646 — V3023 T____
- [ ] Failed to report excessive variation 2646 — V3024 T____
- [ ] Pressurized Product Piping Leak Device not tested annually 25292 — V3025 T____
- [ ] No written monitoring procedure 2641 — V3027 T____
- [ ] No written emergency response plan 2641 — V3027 T____
- [ ] SIR reporting incorrectly done 2646.1 — V3004 T____

MONITORING REQUIREMENTS (DOUBLE WALL)

- [ ] Monitoring system not functional 2632 — V3026 T____
- [ ] No written monitoring procedure 2632 — V3027 T____
- [ ] Written emergency response plan not available 2632 — V3028 T____
- [ ] Spill/Overfill equip. not maintained or installed 2635 — V3029 T____

RELEASE REPORTING

- [ ] Failure to report an unauthorized release 25295 — V3009 T____
- [ ] Release record log not available 2651, 2650 — V3030 T____
- [ ] No leak report/investigation/action 2652 — V3031 T____

CLOSURE

- [ ] Temporary closure req. not completed 2671 — V3006 T____
- [ ] Unused tank not properly closed 25298 — V3032 T____
- [ ] Permanent closure req. not completed 2672 — V3033 T____
- [ ] Failed to apply for temporary closure 25298 — V3008 T____

III HAZARDOUS MATERIALS BUSINESS PLAN REQUIREMENTS:

RECORD KEEPING

- [ ] Health Permit not obtained SDCC 68.1105 — V2001 W____
- [ ] Business Plan not established/implemented 25503.5 — V2002 W____
- [ ] Business Plan not submitted to HMMD 25505 — V2007 W____
- [ ] Business Plan not amended 25505 — V2003 W____
- [ ] Personnel Training Records not available 19 CCR 2732 — V2302 W____

RELEASE REPORTING

- [ ] Failure to report a release/threatened release 25507 — V2008 W____

BUSINESS PLAN ELEMENTS

- [ ] Emergency Response Plan inadequate 25504 — V2201 W____
- [ ] Emergency Contacts not provided/current 25509 — V2203 W____
- [ ] Personnel Training Program inadequate 25504 — V2301 W____
- [ ] Inventory is incomplete 25504 — V2005 W____
- [ ] Site Map is not sufficient 25509 — V2202 W____
- [ ] Acutely Haz. Mat. not registered 25533 — V2009 W____

ALL VIOLATIONS MUST BE CORRECTED. PLEASE CALL (619) 338-2222 OR YOUR INSPECTOR IF YOU HAVE ANY QUESTIONS.

ESTABLISHMENT REPRESENTATIVE	DATE SIGNED	TITLE
[signature]	5/23/01	V/P.

Department of Environmental Health, Hazardous Materials Management Division, P. O. Box 129261, San Diego, CA 92112-9261

DISTRIBUTION: WHITE-RETURN TO HMMD
YELLOW-BUSINESS RETAINS

DEH:HM-923 (Rev. 1/98) NCR

760 940-6809

COUNTY OF SAN DIEGO

CORRECTIVE ACTION FORM TO DOCUMENT RETURN TO COMPLIANCE

PERMIT # 120823 (1208 2nd)
SPECIALIST W. Morgan
INSPECTION DATE: 6/16/03
CONTACT Wayne Carpenter

BUSINESS NAME Carlton Oaks Country Club

ADDRESS 9200 Inwood Drive CITY Santee ZIP 92071

VIOL #	DATE CORRECTED	INDICATE HOW VIOLATIONS WERE CORRECTED (ATTACH ANY SUPPORTING DOCUMENTATION TO THIS FORM)
1 V0135	~~6-26-03~~ 7-8-03	RECEIVED COPIES FROM VENDORS (Safety Kleen, Asbury-oil)
2 V0136	6-26-03	RECEIVED COPIES FROM VENDORS (Used Batteries)
3 V0202	6-26-03	LABELS PUT ON DRUMS
4 V0209	6-12-03	ASBURY PICK UP (Used Oil Filters)
5 V0401	7-15-03	TRAINED CREW, 2 HOURS
6		
7		
8		
9		
10		

I certify under penalty of law that this business/site has corrected all violations marked on the Compliance Inspection Report /Notice of Violation. I have personally examined and am familiar with the information submitted and believe the information is true, accurate and complete. I am authorized to file this certification for the business/site, and am aware that there are significant penalties for submitting false information.

* **Responsible Party (Print Name)** WAYNE CARPENTER **Job Title** Superintendent

* **Signature of Responsible Party** Wayne Carpenter **Date:** 7/10/03

Fax # (858) 694-3705

< Mail completed form and supporting documentation to the address listed below >

COUNTY OF SAN DIEGO USE ONLY: **Reviewed by:** W. Morgan **Date:** 7/17/03

Specialist's comments: Return to Compliance on 7/17/03 for Violations Noted on 6/6/03.

Department of Environmental Health, Hazardous Materials Division, P.O. Box 129261, San Diego, CA 92112-9261; (619) 338-2222; 1-800-253-9933

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

PAGE 1 OF 2
EST. NO. H 120821
DATE 7/17/03
TIME START 9:30 END 11:15
BUS. CODE K40
SPECIALIST Wendy Morgan
CONTACT Wayne Carpenter
TITLE Superintendent
PHONE (619) 448-2080

Prod 9-18-03 on File

BUSINESS NAME Carlton Oaks Country Club
ADDRESS 9200 Inwood Drive
CITY/ZIP Santee / 92071

On the above date, an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (H&S) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

Office Use Only	

AUG 2 0 2003

Supplemental Inspection / Return to Compliance:

Initial Routine Inspection completed on 6/6/03.

Violation #1, V0135: Waste Receipts not on-site for 3 years. Waste receipts for Parts Washer, Waste Oil, Used Oil Filters were obtained and reviewed on this date. Waste receipts will be kept on-site.

Violation #2, V0136: No records of battery disposal. Battery disposal receipts were obtained from Power Stride and reviewed on this date. Battery disposal receipts will be kept on-site.

Violation #3, V0202: Waste container missing / improperly labeled. 55 gallon Waste oil drum and 55 gallon Used Oil Filter drum are properly labelled.

Violation #4, V0209: Waste stored greater than the time allowed. 55 gallon drum of used oil filters was picked up on 6/12/03.

Violation #5, V0401: Training records unavailable. Training was completed on 7/15/03. →

Wayne Carpenter — Signature of Business Representative
7-16-03 — Date Signed
Superintendent — Title

Department of Environmental Health, Hazardous Materials Division, P.O. Box 129261, San Diego, CA 92112-9261; (619) 338-2222

DEH:HM-924 (Rev. 2/99) NCR

DISTRIBUTION: WHITE- RETURN TO HMD
YELLOW-BUSINESS RETAINS

County of San Diego
Department of Environmental Health

COUNTY OF SAN DIEGO

EST. NUMBER # 120821
DATE 7 / 17 / 03
PAGE 2 OF 2

SUPPLEMENTAL INSPECTION REPORT

Office Use Only

BUSINESS ADDRESS: 9200 Inwood Drive, Santee ZIP CODE: 92071

Remarks: Acetylene gas cylinder, 214 cubic feet, was returned to Airgas on 6/30/03.
Argon gas cylinder, 336 cubic feet, was returned to Airgas on 6/30/03.
Oxygen gas cylinders, 2-154 cubic feet, were returned to Airgas on 6/30/03. 1-154 cuft. cylinder remains at the Maintenance shop.

RB- ~~Acet~~ Oxygen cylinder, 154 cuft., falls below disclorable quantity.

55 gallon drum of Contaminated Rags will be deleted as a Waste Item. Rags were picked up by Existing Rag Service; Alsco, American Linen Division.

Wayne Carpenter
Signature of Business Representative

7-16-03
Date Signed

Superintendent
Title

Department of Environmental Health, Hazardous Materials Management Division, P.O. Box 85261, San Diego, CA, 92186-5261

(619) 338-2222

DISTRIBUTION: WHITE-RETURN TO HMMD
YELLOW-BUSINESS RETAINS

DEH:HM-9110 (3/96) NCR

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

PAGE 1 OF 3 DATE 6/6/03
PERMIT # 120821
TIME START 10:00 END 12:30
BUS. CODE K40
SPECIALIST Wendy Morgan
INSPECTION CONTACT/TITLE
Wayne Carpenter / Superintendent
PHONE: (619) 448-2080
Passed 8-14-03 SK 5:45

BUSINESS NAME Carlton Oaks Country Club
ADDRESS 9200 Inwood Drive
CITY/ZIP Santee / 92071

On the above date, an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (HSC) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

Y	N/A		Y	N/A	
☑	☐	Unified Program Facility Permit current and available			Permit Expires on: 4/30/04.
☑	☐	Hazardous Materials Business Plan available	☐	☑	Contingency Plan available
☐	☐	Employee Training is adequate	☐	☐	Employee Training records available
☐	☐	Waste disposal records available for review	☑	☐	Waste containers kept closed
☐	☐	Emergency contacts current ☑ Updated today	☐	☐	Waste containers kept labeled
☐	☐	Chemical inventory current ☑ Updated today	☑	☐	Waste containers in good condition

Routine Inspection:

(1) Waste Receipts for Hydrocarbon Parts Washer, Waste Oil, not on-site for inspection. Waste receipts need to be kept on-site for 3 years for review. - Within 14 days, obtain copies of the waste receipts from Safety-Kleen for your parts washer and from Asbury for your Waste Oil pickups.

(2) Observed 3 used batteries (lead-acid) stored inside on a table. Per Wayne Carpenter, Power Stride picks up the used batteries. However, there were no records of battery disposal. Within 14 days, obtain copies of your used battery pickups from the last 3 years.

(3) Observed a 55 gallon drum of Waste Oil that had a hazardous waste label. The label was missing all pertinent information. Within 3 days, clear off existing label and write in your generator name, address, phone #, drum contents, and the date you started accumulating your waste oil.

(4) Observed a 55 gallon drum, ~~a~~ 3/4 full, of used oil filters.

☐ This is an annual certification that the Hazardous Materials Business Plan (inventory, emergency contacts, emergency response plan, and employee training plan) is current and includes all the information required in the H&SC and is maintained at the site where hazardous materials are stored.

Initials of Business Representative _____

Wayne B. Carpenter — Signature of Business Representative
6/6/03 — Date Signed
Superintendent — Title

COUNTY OF SAN DIEGO

SUPPLEMENTAL INSPECTION REPORT

EST. NUMBER # 120821
DATE 6 / 6 / 03
PAGE 2 OF 3

Office Use Only

BUSINESS ADDRESS: 9200 Inwood Drive, Santee ZIP CODE: 92071

(4 continued) According to the hazardous waste label, the accumulation start date was in the year 1999. Wayne Carpenter said that he has never had the used oil filter drum picked up. Within 14 days, contact your Hazardous Waste hauler to have this drum picked up. Fax Wendy Morgan the receipt.

(5.) Training records unavailable for training on the topics in your Hazardous Materials Business Plan. Training needs to be completed annually. Within 30 days, provide training to your employees. Provided Employee Training Documentation form for your training log. Fax a copy of the training log to Wendy Morgan.

Remarks:
- HMD has EPA ID # CAL000036555 on file. Maintenance Building has the # CAL000191979 on the bulletin board ~~from~~ on a letter from DTSC.
- Adding a 80 gallon, 10W-30, new oil above ground tank to inventory. Properly label this tank as to it's contents.
- Current inventory of Acetylene, Argon & Oxygen are above disclosable quantities. If any of these gases fall below 200 cubic feet total, they will not have to be listed as inventory.
- Waste code 223, Contaminated Rags: 55 gallon drum has only a couple of oily rags in the drum. Wayne Carpenter said that this drum has not been added to or disposed of since he took his current position in July 2001.
- Label all the empty 55 gallon drums "EMPTY".

Wayne B. Carpenter — Signature of Business Representative
6/6/03 — Date Signed
Superintendent — Title

Department of Environmental Health, Hazardous Materials Management Division, P.O. Box 85261, San Diego, CA, 92186-5261
(619) 338-2222

DISTRIBUTION: WHITE-RETURN TO HMMD
YELLOW-BUSINESS RETAINS

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

PERMIT # 120821
DATE 6/6/03
PAGE 3 OF 3

BUSINESS ADDRESS: 9200 Inwood Drive, Santee ZIP: 92071

VIOLATION REPORT: The items checked below refer to specific section numbers of Titles 19 & 22 of the California Code of Regulations (CCR), Chapters 6.5, 6.95 of the Health and Safety Code (HSC), and/or the San Diego County Code (SDCC).

All violations must be corrected. Submit documentation of return to compliance to your Specialist. You may use the Corrective Action Form to document your return to compliance. Your Specialist can provide these forms. Please call (619) 338-2222 or your Specialist if you have any questions.

HAZARDOUS WASTE REQUIREMENTS

RECORDKEEPING

Viol #		VIOL	VIOLATION DESCRIPTION
	☐	V0131	UPF Permit not obtained SDCC. 68.905
	☐	V0132	No EPA Identification Number. 66262.12
	☐	V0133	Manifest copy not sent to DTSC. 66262.23
	☐	V0134	Exception Rpt. not filed with DTSC. 66262.42
1	☑	V0135	Waste Manifests/Receipts not on-site for 3 years. 66262.40
2	☑	V0136	No records of battery disposal. 66262.81
	☐	V0137	Manifest not properly completed. 66262.23
	☐	V0138	TSDF signed-manifest not on-site 66262.40
	☐	V0139	Biennial report not sent to DTSC. 66262.41
	☐	V0140	LDR Documentation not available. 66268.7
	☐	V0141	Operating TSDF without authorization. 25201
	☐	V0142	Failed to notify local CUPA of onsite treatment of hazardous waste. 25201
	☐	V0143	Tiered Permitting notification has incomplete or incorrect information. 25201
	☐	V0144	SB14 compliance doc. not available. 25244.19
	☐	V0145	Excluded recyclable materials report not submitted to HMD. 25143.10

STORAGE AND HANDLING

	☐	V0201	Waste container not kept closed. 66265.173
3	☑	V0202	Waste container missing/improperly labeled. 66262.34, 25143.9
	☐	V0203	Damaged container not repackaged. 66265.171
	☐	V0204	Waste container not properly managed. 66265.173
	☐	V0205	Waste container in poor condition. 66265.171
	☐	V0206	Ignitable Waste < 50 feet of property line. 66265.176
	☐	V0207	Facility no maintained/operated to minimize possibility of fire, explosion or release. 66265.31
	☐	V0208	Storage area not inspected weekly. 66265.174
4	☑	V0209	Waste stored > 90, 180, or 270 days. 66262.34
	☐	V0210	Hazwaste not cleaned up off floor surface. 66262.10b
	☐	V0211	Incompatibles in the same container. 66265.177
	☐	V0212	Incompatibles not stored separately. 66265.177
	☐	V0213	Container incompatible with waste. 66265.172
	☐	V0214	Waste oil contaminated. 25250.7
	☐	V0215	Used oil filters improperly managed. 66266.130
	☐	V0216	Hazardous materials not properly labeled. 25124

DISPOSAL AND TRANSPORTATION

	☐	V0301	Unauth. disposal of waste to:_____. 25189.5
	☐	V0302	Unlawful transportation of hazardous waste. 25163
	☐	V0303	Waste transported without a manifest. 66262.20
	☐	V0304	Waste determination not made. 66262.11

TRAINING, CONTINGENCY PLAN & ER PROCEDURES

Viol #		VIOL	VIOLATION DESCRIPTION
5	☑	V0401	Training records unavailable. 66265.16
	☐	V0402	Training program not adequate. 66265.16
	☐	V0403	Facility not designed to minimize release. 66265.31
	☐	V0404	Spill control equip not available. 66265.32
	☐	V0405	Aisle space is obstructed. 66265.35
	☐	V0406	Contingency plan not prepared and/or on file. 66265.51, 66265.53

HAZARDOUS WASTE TANK SYSTEMS

	☐	V1601	Hazwaste tanks w/o P E. assessment. 66265.191a, 66265.192a
	☐	V1602	P.E. Assessment report not complete. 66265.191g, 66265.192k
	☐	V1603	Hazwste tank system: no secondary containment. 66265.193a
	☐	V1604	Secondary containment not kept empty. 66265.196(b)(c), 66265.194(c)
	☐	V1605	No daily tank inspection/inspect. log 66265.195 (b&c)
	☐	V1606	Improper or absent spill/overfill protection. 66265.194b
	☐	V1607	Improper corrosion protection. 66265.191, 66265.192
	☐	V1608	Integrity assessment not done for tanks without secondary containment system. 66265.191
	☐	V1609	Improper use of hazwaste tank system. 66265.196
	☐	V1610	No PE assessment report-repairs/changes. 66265.196g
	☐	V1611	Improper closure of haz waste tank unit. 67383.3, 66265.197

HAZARDOUS MATERIALS REQUIREMENTS

BUSINESS PLAN REQUIREMENTS

	☐	V1001	UPF permit not obtained for Haz. Materials. 68.905
	☐	V1002	Hazardous Materials Business Plan (HMBP) not established/implemented. 25503.5
	☐	V1003	HMBP not amended to reflect changes25505
	☐	V1004	HMBP not submitted to HMD. 25505
	☐	V1005	Emergency Contacts not provided/current. 25509
	☐	V1006	Inventory is incomplete. 25504
	☐	V1007	Highly toxic gas (TLV≤10 ppm) not disclosed in chemical inventory. 68.1113
	☐	V1008	Annual carcinogen & reproductive toxin list not submitted to HMD 68.1113
	☐	V1009	Site map is not sufficient. 25509
	☐	V1010	Failure to report a release/threatened release. 25507
	☐	V1011	Personnel Training records not available. 19 CCR 2732
	☐	V1012	SPCC Plan required but not prepared. 25270.5 (c)
	☐	V2504	Owner or operator (O/O) Stationary Source (SS) with >TPQ of a regulated substance (RS) did not comply with Chapter 4.5 (CalARP process). 2745.1
	☐	V2553	O/O of a new or modified SS with >TPQ of RS did Not submit RMP. 2735.4, 25535 (d)

Wayne B. Carpenter
SIGNATURE OF BUSINESS REPRESENTATIVE

6/6/03
DATE SIGNED

Superintendent
TITLE OF BUSINESS REPRESENTATIVE

ENTERED MAY 22 2006 mb

COUNTY OF SAN DIEGO

COMPLIANCE INSPECTION REPORT

PAGE 1 OF 1 DATE 2/21/06
PERMIT # 120821
TIME START 8:45 END 10:15
BUS. CODE K40
SPECIALIST Waara
INSPECTION CONTACT/TITLE
Raul Pimentel / Asst. Super.
PHONE: (619) 448-4242

BUSINESS NAME Carlton Oaks Lodge & Country Club LLC
ADDRESS 9200 Inwood Dr
CITY/ZIP Santee 92071

On the above date, an inspection of your business/facility was conducted in order to determine compliance with the California Health and Safety Code (HSC) Chapters 6.5, 6.7, 6.95; Titles 19, 22 and 23 of the California Code of Regulations (CCR); and the San Diego County Code (SDCC). The following remarks are intended to provide guidance to correct the violations noted on the attached violation report.

NOTE: Reinspection fees will be charged if additional inspections are required to determine compliance.

Y	N/A		Y	N/A	
☒	☐	Unified Program Facility Permit current and available			Permit Expires on: 4/30/06
☒	☐	Hazardous Materials Business Plan available	☒	☐	Contingency Plan available
☒	☐	Employee Training is adequate	☐	☒	Employee Training records available
☒	☐	Waste disposal records available for review	☒	☐	Waste containers kept closed
☒	☐	Emergency contacts current ☒ Updated today	☒	☐	Waste containers kept labeled
☒	☐	Chemical inventory current ☒ Updated today	☒	☐	Waste containers in good condition

☐ All violations noted on this compliance inspection report were corrected during this inspection.

Routine Inspection:

RECEIVED MAR 21 2006

no violations noted this day

Remarks:
- Chemical inventory updated during this inspection to include liquid fertilizer.
- Accumulation start date to be entered on waste oil during this inspection.

☒ This is an annual certification that the Hazardous Materials Business Plan (inventory, emergency contacts, emergency response plan, and employee training plan) is current and includes all the information required in the H&SC and is maintained at the site where hazardous materials are stored.

RP ✓
Initials of Business Representative

Signature of Business Representative

2/21/06
Date Signed

Ass. Superintendent
Title of Business Representative

DEH/Water Board Records

California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Linda S. Adams
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4353
(858) 467-2952 • Fax (858) 571-6972
http:// www.waterboards.ca.gov/sandiego

October 19, 2009

CERTIFIED MAIL – RETURN RECEIPT REQUESTED
7009 1410 0002 2347 5814

In reply refer to:
SL209224197:heyu

Mr. Steve W. Meyer
Deputy Metropolitan Wastewater Department Director
City of San Diego
Metropolitan Wastewater Department
2392 Kincaid Road,
San Diego, CA 92101

Dear Mr. Meyer:

SUBJECT: NO FURTHER ACTION FOR FORMER GRIT DISPOSAL SITE AT INTERSECTION OF HIGHWAY 52 AND MAST BLVD., SANTEE, CA

This letter is to inform you that no further action is necessary to cleanup and abate the effects of waste discharged at the subject grit disposal site located at the intersection of Highway 52 and Mast Blvd., Santee. The California Regional Water Quality Control Board, San Diego Region's (Regional Board) decision is based on the review of information contained in the case file and the findings of a site inspection performed on August 26, 2009.

From July to August 1996, grit waste (debris) that was generated from the Point Loma Wastewater Treatment Plant was deposited at the site covering approximately a one-acre area. The grit waste contained low level concentrations of oil and grease, petroleum hydrocarbons, 1,4-dichlorobenzene, and several metals (lead, copper, and zinc). The City of San Diego (the City) installed cover material for the grit waste and implemented best management practices (BMPs) to control storm water on the site. During a site inspection in November 2000, the Regional Board observed additional wastes (including a bucket and a drum that were suspected to contain motor oil and paint, as well as some construction debris) on the site. Subsequently, the Regional Board required (in a letter dated November 30, 2000) that the City investigate and cleanup the additional waste.

During a recent file review that the Regional Board conducted on historical cleanup cases that have been inactive, the Regional Board found that there have been no updates for this site since March 2001. The Regional Board inspected the site with a City representative on August 26, 2009, and found that the additional wastes observed in the June 2000 site inspection had been removed and the site regraded. Upon the

JACK MILLER
Director

County of San Diego

ELIZABETH POZZEBON
Assistant Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
Phone: (619) 338-2222 FAX (619) 338-2088
1 (800) 253-9933
www.sdcdeh.org

June 8, 2010

Mr. Ken Hilliard
7-Eleven, Inc.
P.O. Box 711
Dallas, TX 75221-0711

Mr. Hubert Hotchkiss
Hotchkiss Living Trust
Testamentary Trust
15801 Caminito Cantaras
Del Mar, CA 92014

Dear Responsible Parties:

UNDERGROUND STORAGE TANK (UST) CASE #H20828-001
7-ELEVEN LOCATION NO. 19006
9111 MISSION GORGE ROAD, SANTEE, CA 92071

This letter confirms the completion of a site investigation and corrective action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks is greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code, and that no further action related to the petroleum release at the site is required.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code. Please contact Craig Burnett, at (619) 338-2257, if you have questions regarding this matter.

Sincerely,

JACK MILLER, Director
Department of Environmental Health
Site Assessment and Mitigation Program

JM:CMB:kd

Enclosure

cc: Craig Carlisle, Regional Water Quality Control Board
Ron Duff, SWRCB, UST Cleanup Fund Program
Patrick McConnell, Stantec Consulting Corp.
John Wainwright, Stantec Consulting Corp. (Utah)

WP/H20828-001-610CLO

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

DATE: June 8, 2010

Agency Name: COUNTY OF SAN DIEGO, ENVIRONMENTAL HEALTH, SAM	Address: P.O. BOX 129261
City/State/Zip: SAN DIEGO, CA 92112-9261	Phone: (619) 338-2222 FAX: (619) 338-2377
Responsible Staff Person: CRAIG BURNETT	Title: ENV HEALTH SPECIALIST II

II. CASE INFORMATION

Site Facility Name: 7-ELEVEN # 19006

Site Facility Address: 9111 Mission Gorge Road, Santee, CA 92071-3723

RB LUSTIS Case No: 9UT1429	Local Case No: H20828-001	LOP Case No: N/A
URF Filing Date: 5/12/1989	SWEEPS No: N/A	

Responsible Parties	Address	Phone Number
7-ELEVEN INCORPORATED, KEN HILLIARD	P.O. BOX 711, DALLAS, TX 75221-0711	972-828-6592
HOTCHKISS LIVING TRUST, TESTAMENTARY TRUST, AND HUBERT HOTCHKISS	15801 CAMINITO CANTARAS, DEL MAR, CA 92014	

Tank No.	Size in Gal.	Contents	Status	Date
T001	10000 gallons	REGULAR UNLEADED	CLOSED BY REMOVAL	10/6/1998
T002	10000 gallons	REGULAR UNLEADED	CLOSED BY REMOVAL	10/6/1998
T003	6000 gallons	REGULAR UNLEADED	CLOSED BY REMOVAL	10/6/1998

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause of Release: UNKNOWN, SUBSTANCE RELEASED FROM UST SYSTEM	Substance Released: GASOLINE (UNLEADED)	
Site Characterization complete: YES	Date Approved By Oversight Agency: 9/17/1997	
Monitoring Wells Installed? YES	Number: 31	Proper Screened Interval? YES
Highest GW Depth B.G. Surface: 10.96 (MEASURED)	Lowest Depth: 18.41 (MEASURED)	Flow Direction: NORTHWEST (MEASURED)

Most Sensitive Current Use: Existing Beneficial Groundwater Use: MUN, AGR, IND, AND PROC
Existing Beneficial Surface Water Use: AGR, REC1, REC2 and Potential: MUN

Are Drinking Water Wells Affected? NO	Aquifer Name: 907.12-Santee Hydrologic Sub Area
Is Surface Water Affected? NO	Nearest SW name: SAN DIEGO RIVER 1200 FEET NORTH
Off-Site Beneficial Use Impacts (addresses/locations): NONE	
Report(s) on file? YES	Where is Report(s) Filed? COUNTY OF SAN DIEGO, ENVIRONMENTAL HEALTH

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal)	Date
LPH	293 GALLONS	DISPOSAL, UNKNOWN	1990 - 1991
PURGE WATER	550 GALLONS	DISPOSAL, GIBSON ENVIRONMENTAL, WILMINGTON, CA	6/20/1992
PURGE WATER	550 GALLONS	DISPOSAL, GIBSON ENVIRONMENTAL, WILMINGTON, CA	9/11/1992
SOIL	11 DRUMS	TREATMENT OFF SITE, SOIL WASH, SAN DIEGO, CA	4/9/1997
SOIL	453 yd^3	TREATMENT OFF SITE, SOIL WASH, SAN DIEGO, CA	10/6/1998
TANK	10,000 GALLONS	RECYCLED, PACIFIC STEEL, SAN DIEGO, CA	10/6/1998
TANK	10,000 GALLON	RECYCLED, PACIFIC STEEL, SAN DIEGO, CA	10/6/1998
TANK	6,000 GALLONS	RECYCLED, PACIFIC STEEL, SAN DIEGO, CA	10/6/1998
SOIL	4 DRUMS	TREATMENT OFF SITE, TPS TECHNOLOGIES, ADELANTO, CA	8/20/2004
VAPOR	23,066 POUNDS	TREATED VIA THERMAL OXIDATION	2/7/2006
SOIL	7 DRUMS	TREATMENT OFF SITE, TPS TECHNOLOGIES, ADELANTO, CA	8/20/2008
LPH/WATER	55/1,901 GALLONS	TREATMENT OFF SITE, DOME ROCK INDUSTRIES, QUARTZITE, AZ	1993 - 2009
PURGE WATER	5,612 GALLONS	TREATMENT OFF SITE, DEMENNO KERDOON, LONG BEACH, CA	1993 - 2009

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) **H20828-001**

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS	MAXIMUM	REMAINING
SOIL		
Gasoline	= 12,000 mg/kg	= 2.2 mg/kg
Benzene	= 19,000 mg/kg	= 0.022 mg/kg
Toluene	= 130,000 mg/kg	= 0.099 mg/kg
Ethyl benzene	=46,000 mg/kg	= 0.058 mg/kg
Xylene (individual isomers or total)	= 270,000 mg/kg	= 0.42 mg/kg
Methyl-tert-butyl ether (MTBE)	= 510 mg/kg	= 0.056 mg/kg
tert-Butyl Alcohol (TBA)	= 0.051 mg/kg	= 0.051 mg/kg
tert-Amyl-methyl ether (TAME)	< 0.005 mg/kg	< 0.005 mg/kg
Ethyl-tert-butyl ether (ETBE)	< 0.005 mg/kg	< 0.005 mg/kg
di-isopropyl ether (DIPE)	< 0.005 mg/kg	< 0.005 mg/kg
Lead	<1.0 mg/kg	< 1.0 mg/kg
WATER		
Gasoline	= 980,000 ug/l	< 50 ug/l
Benzene	= 17,000 ug/l	< 0.5 ug/l
Toluene	= 34,000 ug/l	< 0.5 ug/l
Ethyl benzene	= 5,100 ug/l	< 0.5 ug/l
Xylene (individual isomers or total)	= 45,000 ug/l	< 0.5 ug/l
Methyl-tert-butyl ether (MTBE)	= 62,000 ug/l	= 14 ug/l
tert-Butyl Alcohol (TBA)	= 67,000 ug/l	< 5.0 ug/l
tert-Amyl-methyl ether (TAME)	= 380 ug/l	< 0.5 ug/l
Ethyl-tert-butyl ether (ETBE)	= 12 ug/l	< 0.5 ug/l
di-isopropyl ether (DIPE)	= 36 ug/l	< 0.5 ug/l
LIQUID PHASE HYDROCARBONS	1.78 Feet	0 Feet

Comments:

On April 4, 1989, a product line was punctured during a property transaction investigation. Subsequently, an unknown amount of product was released from the supply line. Unauthorized Release case H20828-001 was opened. Laboratory results from an initial investigation indicated total petroleum hydrocarbons as gasoline (TPHg) ranging from below laboratory reporting limit (ND) to 1,300 milligrams per kilogram (mg/kg).

Interim remedial action to remove free product from groundwater occurred periodically between April 2, 1990 and July 11, 2003. During free product skimming activities, a total of approximately 348 gallons of gasoline were removed. Site assessments to evaluate the extent of hydrocarbons in soil and groundwater occurred on and offsite between 1989 and 1998. During these assessments, TPHg concentrations in soil ranged from ND to 12,000 mg/kg, Benzene concentrations ranged from ND to 19,000 mg/kg, and methyl tertiary butyl ether (MTBE) concentrations ranged from ND to 510 mg/kg.

In 1998, two 10,000 gallon and one 6,000 gallon Underground Storage Tanks (USTs) were removed from the site. To mitigate hydrocarbons in soil observed following tank removal activities, approximately 453 yds^3 of hydrocarbon impacted soil was excavated and treated offsite. As a part of the removal process, soil samples were collected beneath the USTs. Laboratory results indicated TPHg ranging from 2.6 mg/kg to 11,000 mg/kg. A Corrective Action Plan (CAP) that proposed air sparging and soil vapor extraction (SVE) was approved in September 1997 and implemented in July 1999. Remedial activities began in 1999 and continued until 2006. The SVE removed an estimated 23,066 pounds of hydrocarbons. Soil verification sampling was conducted as part of the CAP. TPHg concentrations ranged from ND to 2.2 mg/kg, benzene concentrations from ND to 0.022 mg/kg, and MTBE concentrations from ND to 0.056 mg/kg.

The site is located in a basin designated for beneficial uses for municipal, agricultural, industrial service and industrial process supply. Groundwater flow direction has ranged between the northwest and northeast. Groundwater monitoring wells installed onsite and offsite have shown that groundwater has been impacted by the unauthorized release. Quarterly groundwater monitoring and sampling has been conducted at the site from March 1990 through October 2009. TPHg, benzene, and tert-butyl alcohol (TBA) concentrations have decreased to below laboratory limits in wells. In May 2007, the consultant estimated MTBE concentrations to reach Maximum Contaminant Levels (MCL's) within one to two years. Based on the most recent data submitted, MTBE concentrations are decreasing to slightly above the MCL's and are predicted to reach below the MCL within 5 years.

A receptor search was conducted within ¼ mile radius of the site as a part of the CAP. One domestic well was located approximately 300 feet south of the site. According to the consultant, due to the distance and location of the well, there is no pathway for impact. The consultant concludes that the remedial alternative has been effective in removing hydrocarbon impacts in soil and groundwater. The consultant estimates less than 50 cubic yards of residual hydrocarbon impacted soil remain onsite and that any remaining soil impacts will not pose a threat to human health or groundwater. The consultant recommends no further action for this unauthorized release. DEH concurs with this recommendation.

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

IV. CLOSURE

H20828-001

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? NO, SEE ABOVE

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? NO, SEE ABOVE

Does corrective action protect public health for current land use? YES

Case oversight completed based upon the following site use: GASOLINE STATION

Site Management Requirements:
ANY CONTAMINATED SOIL EXCAVATED AS PART OF SUBSURFACE CONSTRUCTION WORK MUST BE MANAGED IN ACCORDANCE WITH THE LEGAL REQUIREMENTS AT THAT TIME.

Should corrective action be reviewed if land use changes? YES

Monitoring Wells Decommissioned: NA *	Number Decommissioned: 8	Number Retained: 23

List Actions Taken: NOTICE OF REIMBURSEMENT / LOCAL

List Enforcement Actions Rescinded: NONE

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: KEVIN HEATON, PG 4163, CHg 163	Title: SENIOR HYDROGEOLOGIST
Signature:	Date: 6/8/2010

VI. RWQCB NOTIFICATION

Date Submitted to RB:	RB Response: No Comments Received	
RWQCB Staff Name: Craig Carlisle	Title: Senior Engineering Geologist	Date: 6/8/2010

VII. ADDITIONAL COMMENTS, DATA, ETC.

* A permit has been issued for the destruction of the existing monitoring wells. The permit number is LMON 107158.

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

request of the Regional Board, the City provided additional information showing that the current owner of the site, Midwest Television, Inc. regraded the site and installed drainage ditches, drainage pipe, and a desiltation basin sometime between October 2004 and June 2005. Further evaluation of the contaminant concentrations found in the grit waste confirm that the concentrations are below current human health and water quality screening values and therefore does not require any further cleanup action.

Based on the findings of the August 26, 2009 site inspection, the information discussed in the previous paragraphs and contained in the above-referenced file (SL209224197), and with the provision that the information provided to the Regional Board was accurate, the Regional Board finds that the subject site does not pose a threat to human health or the environment under current land use conditions, and **no further action** related to the grit disposal at the subject site is required. Any change in the present land use will require reevaluation to determine if the change could pose a risk to public health,

In the subject line of any response, please include the requested "**In reply refer to:**" information located in the heading of this letter. Please contact Ms. **Xueyuan Yu** at **(858) 627-3964** or by email at Heyu@waterboards.ca.gov if you have any questions regarding this matter.

Sincerely,

JOHN H. ROBERTUS
Executive Officer

JHR:jc:jpa:xy

cc: Mr. Richard Lochmann, Midwest Television, Inc., 7677 Engineer Road, San Diego, CA 92111
Ms. Skyla Wallmann, the City of San Diego, swallmann@sandiego.gov (email only)

JACK MILLER
Director

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
Phone: (858) 505-6700/1 (800) 253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
Assistant Director

March 13, 2014

Mr. Chris Panaitescu
Thrifty Oil Company
13116 Imperial Highway
Santa Fe Springs, CA 90670

Dear Mr. Panaitescu:

UNDERGROUND STORAGE TANK (UST) CASE #H20810-001
FORMER THRIFTY OIL COMPANY STATION #114
9009 CARLTON HILLS BOULEVARD, SANTEE, CA 92071

This letter confirms the completion of a site investigation and corrective action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks is greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code, and that no further action related to the petroleum releases at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code. Please contact Teresa Sherman at (858) 505-6797, if you have questions regarding this matter.

Sincerely,

JACK MILLER, Director
Department of Environmental Health
Site Assessment and Mitigation Program

cc: Mr. Jim Zenor, Thrifty Oil Company

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

DATE: March 13, 2014

Agency Name: County of San Diego, Environmental Health, SAM	Address: P.O. Box 129261
City/State/Zip: San Diego, CA 92112-9261	Phone: (858) 505-6700 FAX: (858) 505-6891
Responsible Staff Person: Teresa Sherman	Title: Environmental Health Specialist II

II. CASE INFORMATION

Site Facility Name: Thrifty Oil Company Station #114

Site Facility Address: 9009 Carlton Hills Boulevard, Santee, CA

RB LUSTIS Case No: 9UT585	Local Case No: H20810-001	LOP Case No: N/A
URF Filing Date: 9/11/1986	SWEEPS No: N/A	

Responsible Parties	Address	Phone Number
Thrifty Oil Company Attn: Mr. Chris Panaitescu	13116 Imperial Highway Santa Fe Springs, CA 90670	562-921-3581

Tank No.	Size in Gal.	Contents	Status	Date
1	10,000	gasoline	removed	May 4, 1995
2	10,000	gasoline	removed	May 4, 1995
3	10,000	gasoline	removed	May 4, 1995

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause of Release: Underground Storage Tank System	Substance Released: Gasoline	
Site Characterization complete? Yes	Date Approved By Oversight Agency: 6/30/13	
Monitoring Wells Installed? Yes	Number: 21	Proper Screened Interval? Yes
Highest GW Depth B.G. Surface: 3.92 feet	Lowest Depth: 9.13 feet	Flow Direction: Northwest

Most Sensitive Current Use: Existing Beneficial Groundwater Use: MUN, AGR, IND, PROC
Existing Beneficial Surface Water Use: IND, REC1, REC2, Potential MUN

Are Drinking Water Wells Affected? No	Aquifer Name: Santee Hydrologic Subarea (907.12)
Is Surface Water Affected? No	Nearest SW name: San Diego River, approx. 650 feet north, and Forrester Creek, approx. 700 feet southwest.

Off-Site Beneficial Use Impacts (addresses/locations): No

Report(s) on file? Yes	Where is Report(s) Filed? County of San Diego, Department of Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount	Action	Date
Tanks	3	Unknown	May 1995
Soil	1,000 tons (880 cu. yds)	Disposal/Recycling (Candelaria Land Co.)	June 1995
Groundwater	6,000,000 gallons	Treatment/Sewer Discharge	Jul 1987 - Jul 1989
Groundwater	13,287 gallons	Disposal (Demmeno/Kerdoon)	Sept-Nov 2001
Groundwater	34,470 gallons	Disposal (Crosby and Overton)	Mar-Nov 2007
Groundwater	17,365 gallons	Disposal (K-Pure Waterworks)	Nov 4-5, 2008
Groundwater	122,870 gallons	Treatment/Sewer Discharge	Sept-Nov 2009
Groundwater	164,430 gallons	Treatment/Sewer Discharge	Mar-Apr 2012
Purge Water	Unknown	Disposal	1986 - 2013

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) H20810-001

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS	MAXIMUM	REMAINING
SOIL (in milligrams per kilogram)		
Gasoline	= 7,650 mg/kg	= 7,650 mg/kg
Benzene	= 38.7 mg/kg	= 38.7 mg/kg
Toluene	= 24.4 mg/kg	= 24.4 mg/kg
Ethylbenzene	= 130 mg/kg	= 130 mg/kg
Total Xylenes	= 690 mg/kg	= 690 mg/kg
Methyl tertiary butyl ether (MTBE)	= 8.1 mg/kg	= 8.1 mg/kg
Tert-butyl alcohol (TBA)	= < 4.4 mg/kg	= < 4.4 mg/kg
GROUNDWATER (in micrograms per liter)		
Gasoline	= 143,000 ug/l	= 21,500 ug/l
Benzene	= 12,900 ug/l	= 380 ug/l
Toluene	= 2,220 ug/l	= 38J* ug/l
Ethylbenzene	= 4,200 ug/l	= 3,100 ug/l
Total Xylenes	= 17,200ug/l	= 4,800 ug/l
MTBE	= 18,000 ug/l	= 5.1 ug/l
TBA	= 3,190 ug/l	= 110 ug/l
SOIL VAPOR		
N/A		
LIQUID PHASE HYDROCARBONS	0.01 inches/sheen	none

*J- estimated concentration

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) **H20810-001**

Case Summary:

During property acquisition assessment activities in August and September 1986, petroleum hydrocarbon contamination was reported in soil and groundwater samples collected near the underground storage tanks (USTs), pump islands, and product lines at the site. Thrifty subsequently initiated groundwater remediation and quarterly groundwater monitoring under a Cleanup and Abatement Order (#87-93) issued by the Regional Water Quality Control Board (RWQCB). Between July 1987 and July 1989, approximately six million gallons of groundwater was pumped from an extraction well, then treated prior to discharge (under permit) to the sewer system.

Additional on-site soil contamination was found in May 1995, when three gasoline USTs and associated piping were removed from the site. Subsequently, approximately 1,000 tons (680 cubic yards) of hydrocarbon-impacted soil was reportedly removed from the source area for off-site disposal, and the UST system was replaced. Soil borings and groundwater monitoring wells were installed from 1986 through 2005 to delineate the extent of contamination. A rough estimate of residual impacted soil is approximately 1400 cubic yards, with soil and groundwater contamination extending off site to the northwest into Carlton Hills Boulevard. The maximum dissolved benzene concentrations and methyl tertiary butyl ether (MTBE) concentrations were reported in off-site well W-9 and on-site well W-7, respectively. Prior to 2008, free product sheens were intermittently reported in well W-9, which is located in the southbound lane of Carlton Hills Boulevard.

Groundwater at the site has designated beneficial uses, and the basin is considered to be a sensitive aquifer. The nearest surface water body, the San Diego River, is located approximately 650 feet north of the site. There are no public supply wells within a half-mile of the site. Thrifty contacted the Padre Dam Municipal Water District, and they said they have no plans to use the groundwater in the vicinity of the site.

Thrifty has maintained that the off-site petroleum contamination in the vicinity of well W-9 originated from an upgradient source, specifically, the Former E-Z Serve site at 9305 Mission Gorge Road. However, DEH has discussed this issue at length with Thrifty, and does not concur that a source other than Thrifty is responsible for the off-site contamination.

Thrifty conducted remediation events under several DEH-approved interim remedial action plans (IRAPs) and a corrective action plan (CAP). Multiple mobile high-vacuum dual-phase extraction (HVDPE) events were conducted on site and off site between September 2001 and April 2012. In the *Second Half 2013 Status Report and Request for Closure*, Thrifty concludes that the remediation efforts have effectively reduced dissolved petroleum hydrocarbon concentrations both on site and off site. For example, the MTBE concentration in on-site well W-7 decreased significantly from a maximum of 18,000 micrograms per liter (µg/l) in June 1998 to a concentration of 5.1 µg/l in June 2013. The maximum on-site benzene concentration in June 2013 was 64 µg/l in well W-7. In off-site well W-9, the benzene concentration decreased from a maximum of 12,900 µg/l in February 2002 to a level of 380 µg/l in June 2013. In the same time period, the MTBE concentration in W-9 decreased from 371 ug/l to below the method detection limit.

Thrifty concludes that the plume is stable and will not pose a significant threat to human health or the environment, and that concentrations of the limited residual soil and groundwater contaminants will decrease through natural attenuation. Thrifty estimates that the maximum contaminant level (MCL) for benzene of 1 µg/l will be reached on site by approximately 2033, and off site by approximately 2067. Ethylbenzene concentrations on site are already well below the 300 µg/l MCL. The ethylbenzene concentration in off-site well W-9 currently exceeds the MCL. However, Thrifty and SAM staff agree that based on the overall stable configuration of the plume, dissolved ethylbenzene will degrade over time in a similar manner to benzene.

Thrifty recommends case closure. SAM concurs.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? No. However, Thrifty concludes that benzene and ethylbenzene concentrations will naturally attenuate to their respective MCLs by 2067.

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? No. However, Thrifty concludes that benzene and ethylbenzene concentrations will naturally attenuate to their respective MCLs by 2067.

Does corrective action protect public health for current land use? Yes

Case oversight completed based upon the following site use: Commercial Use (Fuel Service Station)

Site Management Requirements:
Any contaminated soil excavated as part of subsurface construction work must be managed in accordance with the legal requirements at that time.

Should corrective action be reviewed if land use changes? Yes

Monitoring Wells Decommissioned: No*	Number Decommissioned: 2	Number Retained: 19*

List Actions Taken: Notice Of Reimbursement/Local

List Enforcement Actions Rescinded: None

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

V. LOCAL AGENCY REPRESENTATIVE DATA

H20810-001

Name: Kevin M. Heaton, PG 4163, CHg 163	**Title:** Senior Hydrogeologist
Signature: Kevin Heaton 2014.03.13 17:06:13 -07'00'	**Date:** 3/13/2014

VI. RWQCB NOTIFICATION

Date Submitted to RB: 12/16/2013	**RB Response:** No Comments	
RWQCB Staff Name: Craig Carlisle	**Title:** Senior Engineering Geologist	**Date:** 1/15/2014

VII. ADDITIONAL COMMENTS, DATA, ETC.

* Well destruction of the thirteen on-site and six off-site wells will be conducted under DEH Permit DEH2014-LMWP-000962. This permit application was received on 3/10/2014.

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

JACK MILLER
DIRECTOR

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
858-505-6700/FAX 858-505-6848/1-800-253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

March 11, 2014

Mr. Graham M. Kelly, Jr.
Successor Trustee of Kelly Family Trust
1136 Loma Avenue, Suite 202
Coronado, CA 92118

Mr. Timothy P. Fitzgerald
Agent for Van Berkel Co-Owners
10843 El Nopal
Santee, CA 92071

Dear Mr. Kelly and Mr. Fitzgerald:

VOLUNTARY ASSISTANCE PROGRAM, FILE #DEH2014-LSAM-000226
KELLY/VAN BERKEL CARLTON HILLS BOULEVARD PROPERTY
VACANT LOT (APN: 383-071-04-00) ON CARLTON HILLS BOULEVARD, SANTEE, CA

Staff of the Department of Environmental Health (DEH), Site Assessment and Mitigation Program (SAM) reviewed the available environmental investigation data related to the above-referenced property, and completed a Health Risk Evaluation. As detailed below, the calculated cancer risk value is not significant (less than one in one million). Your property is suitable for residential development, and no investigative or remedial measures are required. A site map, risk evaluation data and calculations, and historical sample data are included as an attachment to this letter.

On April 19, 2005, Thrifty Oil Company (Thrifty) installed three groundwater monitoring wells (W-11, W-12, and W-13) on your property to assist in the off-site delineation of fuel-impacted groundwater resulting from a release at their station located at 9009 Carlton Hills Boulevard. Investigation and remediation activities at the Thrifty site were overseen by the DEH under case number H20810-001, and the case is currently in the process of being closed. During the installation of the monitoring wells on your property, soil boring samples were collected and analyzed. None of the analyzed contaminants were detected in soil above the laboratory method reporting limits. Groundwater samples were collected from the monitoring wells from 2005 through 2013. While groundwater impacts were present historically in two of the wells, contaminant concentrations have decreased through natural attenuation to very low levels.

The maximum concentrations of dissolved benzene, ethylbenzene, and methyl tertiary-butyl ether (MTBE) reported in the three wells over the last three groundwater sampling events were used as model input data. These three events, conducted between September 2012 and June 2013, followed the last remedial action conducted by Thrifty. Because only dissolved MTBE was detected during these sampling events, values of one-half of the detection limits for benzene and ethylbenzene were used in SAM's Vapor Risk 2000 Model. The combined cancer health risk under a residential scenario calculated by the model is 2×10^{-9}. A cancer health risk below 1×10^{-6} (one in one million) is considered an insignificant risk. Therefore, the minor dissolved concentrations of MTBE reported in well W-12 (less than 2 micrograms per liter) do not pose a human health threat, and residential development of the property is acceptable.

In addition, please be advised that DEH does not concur with Thrifty's contention that the fuel-impacted groundwater on your property is from a source other than Thrifty.

Thank you for selecting DEH to assist in your property evaluation. Please contact Teresa Sherman of the Site Assessment and Mitigation Program at Teresa.Sherman@sdcounty.ca.gov or at (858) 505- 6797, if you require additional assistance.

Sincerely,



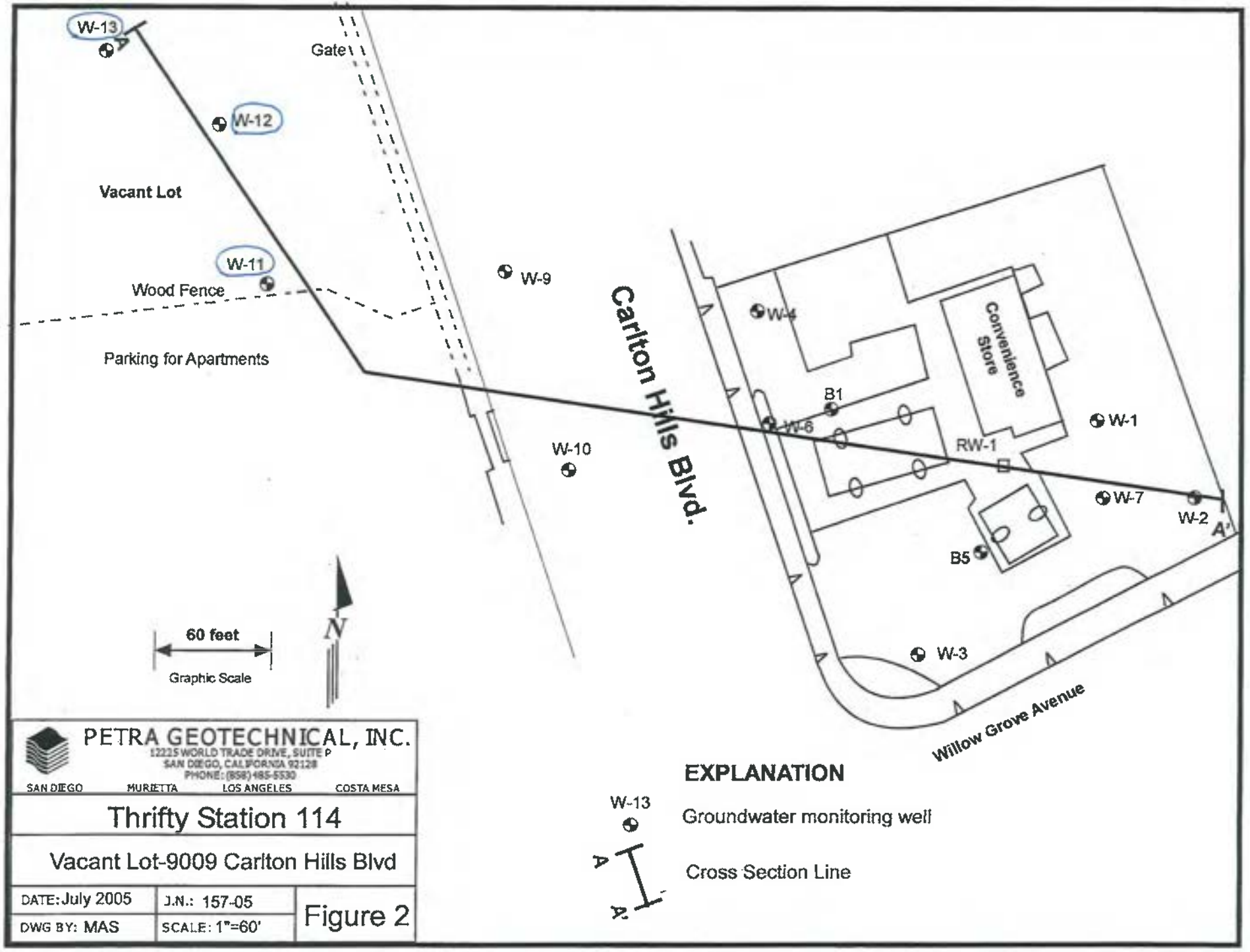
SCOTT WELDON, VAP Program Manager
Supervising Environmental Health Specialist
Site Assessment and Mitigation Program

Attachment Enclosed

cc: Mr. Chris Panaitescu, Thrifty Oil Company

ATTACHMENT

- Figure Showing Location of Wells W-11, W-12, and W-13
- Health Risk Evaluation Calculations
- Historical Groundwater Sample Data
- Historical Soil Sample Data



PETRA GEOTECHNICAL, INC.
12225 WORLD TRADE DRIVE, SUITE P
SAN DIEGO, CALIFORNIA 92128
PHONE: (858) 485-5530
SAN DIEGO MURIETTA LOS ANGELES COSTA MESA

Thrifty Station 114

Vacant Lot-9009 Carlton Hills Blvd

DATE: July 2005	J.N.: 157-05	Figure 2
DWG BY: MAS	SCALE: 1"=60'	

TABLE 1

Post-Remediation* Groundwater Monitoring Results

Maximum Contaminant Concentrations (micrograms per liter)

Well I.D.	Benzene (ug/l)	Ethylbenzene (ug/l)	MTBE (ug/l)
W-11	<0.18	<0.21	<0.19
W-12	<0.18	<0.21	**1.7**
W-13	<0.18	<0.21	<0.19

* Includes the maximum contaminant concentrations detected during three post-remediation groundwater sampling events conducted on 9/11/12, 3/5/13, and 6/6/13 (with the exception of monitoring well W-11 which was only sampled on 3/5/13).

TABLE 2

Vapor Model Input Data

Benzene (ug/l)	Ethylbenzene (ug/l)	MTBE (ug/l)	Depth (meters)
0.09*	0.11*	2.0	2.49

*One-half of the method detection limit used as the input concentration

TABLE 3

Health-Risk Calculations

Residential Adult Benzene (24 years)	Residential Child Benzene (6 years)	Residential Adult Ethylbenzene (24 years)	Residential Child Ethylbenzene (6 years)	Residential Adult MTBE (24 years)	Residential Child MTBE (6 years)
1.10E-09	6.43E-10	1.39E-10	8.11E-11	4.25E-11	2.48E-11

Combined Residential Health Risk= 2 X 10^{-9*}

*Residential Health-Risk Value below 1 X 10^{-6} (one in one million) is considered less than significant

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION Date: October 14, 1997

ncy Name: County of San Diego, Environmental Health, SAM	Address: PO Box 129261
City/State/ZIP: San Diego, CA 92112-9261	Phone: (619) 338-2222 Fax: (619) 338-2377
Responsible Staff Person: Pamela Villa Clay	Title: Hazardous Materials Specialist

II. CASE INFORMATION

Site Facility Name: 7-Eleven Store No. 13661		
Site Facility Address: 9251 Carlton Hills Bl., Santee, CA		
RB LUSTIS Case No: N/A	Local Case No: H20811-001	LOP Case No: N/A
URF Filing Date: 12/13/93	SWEEPS No: N/A	
Responsible Parties	Addresses	Phone Number
The Southland Corporation Attn: Bob DeNinno	19033 West Valley Highway, D-104 Kent, WA 98032	(206) 251-9165

Tank No.	Size in Gal.	Contents	Closed in Place/Removed?	Date
1	N/A	N/A	N/A	N/A

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release: Analytical results for soil samples taken from piping closure/removal indicate an unauthorized release associated with UST system.

Site Characterization complete? Yes	Date Approved By Oversight Agency: 2/5/97		
Monitoring Wells Installed? Yes	Number: 3	Proper Screened Interval? Yes	
Highest GW Depth Below Ground Surface: 2.29 feet	Lowest Depth: 10.27 ft.	Flow Direction: southwest	
Most Sensitive Current Use: Municipal beneficial groundwater use			
Are Drinking Water Wells Affected? No	Aquifer Name: Santee HSA (907.12)		
Is Surface Water Affected? No	Nearest SW name: San Diego River		
Off-Site Beneficial Use Impacts (addresses/locations): None			
Report(s) on file? Yes	Where is Report(s) Filed? County of San Diego, Environmental Health		

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal w/Destination)	Date
Tank	N/A	N/A	N/A
Piping	30 feet fiberglass	Disposed as scrap	12/10/93
Free Product	N/A	N/A	N/A
Soil	29 tons 9 drums 0.44 tons	TPS Technologies Inc., Adelanto, CA TPS Technologies Inc., Adelanto, CA TPS Technologies Inc., Adelanto, CA	12/20/93 10/25/94 4/18/97
Groundwater	700 gallons 48 gallons 36 gallons 39 gallons 50 gallons 40 gallons	Treatment - Demenno-Kerdoon, Compton, CA Treatment - Demenno-Kerdoon, Compton, CA Treatment - Demenno-Kerdoon, Compton, CA Treatment - Demenno-Kerdoon, Compton, CA Treatment - Demenno-Kerdoon, Compton, CA Treatment - Demenno-Kerdoon, Compton, CA	12/15/93 3/12/96 6/3/96 8/27/96 11/19/96 2/14/97
Barrels	N/A	N/A	N/A

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) H20811-001

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS -- BEFORE AND AFTER CLEANUP

Contaminant	Soil (ppm)		Water (ppb)		Contaminant	Soil (ppm)		Water (ppb)	
	Before	After	Before	After		Before	After	Before	After
TPH (Gas)	15000	15000	6600	<50	Xylene	unknown	<0.05	<1.0	<0.5
TPH (Diesel)	<10	<10	<50	<50	Ethylbenzene	unknown	0.162	21	<0.5
Benzene	unknown	0.215	39	<0.5	Oil & Grease	N/A	N/A	N/A	N/A
Toluene	unknown	<0.50	<0.5	<0.5	Heavy Metals	N/A	N/A	N/A	N/A
Other					MTBE	N/A	N/A	5500	2700

Comments (Depth of Remediation, etc.): Soil samples collected at piping removal inspection revealed elevated levels of gasoline fuel contaminants in soil. Approximately 30 feet of single wall fiberglass piping was removed. Soil samples collected at piping removal from native soil revealed 1700 and 1400 ppm TPH and thus, an unauthorized release case was opened. During the repipe activities, additional soil samples were collected from the UST backfill material at the piping turbine end of the USTs by the consultant; these samples ranged from <10 to 15000 ppm TPH-gasoline at 3 to 6 feet below grade (b.g.) with an average of approximately 2000 ppm. Based on additional data it appears that the contaminated soil is limited to the UST backfill. Three monitoring wells were installed where additional soil samples were collected at 6, 11, and 16.5 feet b.g. which revealed nondetectable levels of TPH. The three groundwater monitoring wells were monitored and sampled on a quarterly basis from September 1994 through November 1996. Since May 1996, the concentration of benzene in groundwater was less than 1.0 ppb benzene in all three groundwater monitoring wells.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes

Does corrective action protect public health for current land use? Yes

Site Management Requirements: Any excavation of contaminated soil may require appropriate disposal measures in accordance with the guidelines and regulations at the time of disposition.

Should corrective action be reviewed if land use changes? Yes

Monitoring Wells Decommissioned: Yes | Number Decommissioned: 3 | Number Retained: 0

List Enforcement Actions Taken: Notice of Corrective Action and Reimbursement Responsibility

List Enforcement Actions Rescinded: None

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Chuck Gvatel | Title: Chief, Site Assessment and Mitigation

Signature: [signature] | Date: 11-12-97

Hydrogeologist Concurrence: [signature] | Date: 11/10/97

VI. RWQCB NOTIFICATION

Date Submitted to RB: 2/27/97 | RB Response: OK for No Further Action status

RWQCB Staff Name: Marisela Humphries | Title: Water Resources Control Engineer | Date: 2/27/97

VII. ADDITIONAL COMMENTS, DATA, ETC.

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

JACK MILLER
Director

County of San Diego

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
Phone: (858) 505-6700/1 (800) 253-9933
www.sdcdeh.org

ELIZABETH POZZEBON
Assistant Director

September 6, 2012

Mr. Eric Roehl
Chevron Environmental Management Company
P.O. Box 2292
Brea 92822-2292

State of California
Department of Transportation
4050 Taylor Street, MS110
San Diego, CA 92110

Dear Responsible Parties:6

UNDERGROUND STORAGE TANK (UST) CASE #H20827-002
FORMER CHEVRON SERVICE STATION NO, 21-1217
8111 MISSION GORGE ROAD, SANTEE, CA 92071

This letter confirms the completion of a site investigation and corrective action for the underground storage tanks formerly located at the above described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks is greatly appreciated.

Based on information in the above referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation carried out at your underground storage tanks site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code, and that no further action related to the petroleum release at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code. Please contact Ellen Beacon at (858) 505-6983, if you have questions regarding this matter.

Sincerely,

JACK MILLER, Director
Department of Environmental Health
Site Assessment and Mitigation Program

Enclosure

JM:eb

Cc: Kaitlin McCormick, Stantec Consulting Services, Inc. H20827-002CLO7-12

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

DATE: September 6, 2012

Agency Name: County of San Diego, Environmental Health, SAM	Address: P.O. Box 129261
City/State/Zip: San Diego, CA 92112-9261	Phone: (858)505-6700 FAX: (858)505-6891
Responsible Staff Person: Ellen Beacon	Title: Environmental Health Specialist II

II. CASE INFORMATION

Site Facility Name: Former Chevron Station

Site Facility Address: 8111 Mission Gorge Road, Santee, CA 92071

RB LUSTIS Case No: NA	Local Case No: H20827-002	LOP Case No: N/A
URF Filing Date: 12/14/1990	SWEEPS No: N/A	

Responsible Parties	Address	Phone Number
Chevron Environmental Management Company Attn: Mr. Eric Roehl	P.O. Box 2292, Brea, CA 92822-2292	(714) 671-3347
State of California Department of Transportation	4050 Taylor Street, MS 110, San Diego, CA 92110	

Tank No.	Size in Gal.	Contents	Status	Date
1	10,000	Gasoline	Removed	9/21/1994
2	10,000	Gasoline	Removed	9/21/1994
3	10,000	Gasoline	Removed	9/21/1994
4	10,000	Diesel	Removed	9/21/1994

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause of Release: Underground storage tank system	Substance Released: Gasoline and diesel fuel	
Site Characterization complete? Yes	Date Approved By Oversight Agency: 11/23/2011	
Monitoring Wells Installed? Yes	Number: 9	Proper Screened Interval? Yes
Highest GW Depth B.G. Surface: 11.33 feet	Lowest Depth: 21.41 feet	Flow Direction: north

Most Sensitive Current Use: Existing Beneficial Groundwater Use: MUN, AGR, IND, PROC
Existing Beneficial Surface Water Use: IND, REC1, REC2 Potential MUN

Are Drinking Water Wells Affected? No	Aquifer Name: Santee Hydrologic Sub-Area (907.12)
Is Surface Water Affected? No	Nearest SW name: San Diego River (400 feet to the north)

Off-Site Beneficial Use Impacts (addresses/locations): None

Report(s) on file? Yes	Where is Report(s) Filed? County of San Diego, Department of Environmental Health

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal)	Date
Tanks	Four	Disposal/AMR Recycling	9/21/1994
Soil	3,300 cubic yards	Environmental Technologies, Inc., Apex, NV/Disposal	10/1994
Purge Water	Unknown	Managed in accordance with 40 CFR and Title 22	1991-2011
LPH	0.22 gallons	Unknown	8/1993
LPH/Water	8,700 gallons	Demenno Kerdoon, Compton, CA/Recycling	10/1994

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) H20827-002

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS	MAXIMUM	REMAINING
SOIL		
Total Recoverable Petroleum Hydrocarbons	= 11000 mg/kg	= 11000 mg/kg
Diesel Fuel	= 6653 mg/kg	= 6653 mg/kg
Gasoline	= 4212 mg/kg	= 4212 mg/kg
Benzene	= 52.83 mg/kg	= 52.83 mg/kg
Toluene	= 325.73 mg/kg	= 325.73 mg/kg
Ethylbenzene	= 79.25 mg/kg	=79.25 mg/kg
Total Xylenes	= 535.91 mg/kg	= 535.91 mg/kg
Methyl Tertiary Butyl Ether (MTBE)	<0.005 mg/kg	<0.005 mg/kg
Tert Butyl Alcohol (TBA)	<0.22 mg/kg	<0.22 mg/kg
WATER		
Gasoline	= 40000 ug/l	= 15000 ug/l
Benzene	= 6800 ug/l	= 1300 ug/l
Toluene	= 5100 ug/l	= 71 ug/l
Ethylbenzene	= 3000 ug/l	= 700 ug/l
Total Xylenes	= 5900 ug/l	= 1200 ug/l
MTBE	= 52 ug/l	<1 ug/l
TBA	= 1000 ug/l	= 8 ug/l
LIQUID PHASE HYDROCARBONS	=0.04	ND

ND = Not Detected

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) **H20827-002**

Comments:

This case was opened in December of 1990 following the discovery of a diesel fuel release from product piping during a dispenser island replacement. Additional soil sampling results from the western dispenser island product lines indicated that there had also been a release of gasoline (unknown date).

In 1991, ten soil borings were drilled at the site and soil samples were collected and analyzed. Three of the soil borings were converted into monitoring wells (W1-W3). Diesel fuel was detected in one soil sample and gasoline was detected in several soil from 3 to 22 feet below ground surface in soil near the dispenser islands. In 1994, the station was demolished and redeveloped as a CalTrans Park and Ride. Four underground storage tanks (USTs) were removed from the site in September 1994. The presence of free product, soil and groundwater contamination was noted during the tank removal activities. One monitoring well was destroyed (W3) and one well was damaged during the excavation (W1). In October 1994, hydrocarbon impacted soil was excavated from the former dispenser island area and underground storage tank (UST) area. A total of 3,300 cubic yards of soil were excavated and transported to Environmental Technologies in Apex, Nevada for disposal. The consultant estimated that the volume of hydrocarbon impacted soil remaining onsite in these areas and near well MW6 to be approximately 92 cubic yards.

Groundwater is present at depths of 11.33 to 21.41 feet below ground surface. Dissolved gasoline was detected in groundwater in 1991. Free product was detected floating on the groundwater in February 1993. Periodic free product recovery occurred from March 1993 until September 1994 when the station was demolished and the wells were destroyed. Free product was also observed on the groundwater surface of the UST excavation. Approximately 8,700 gallons of hydrocarbon impacted groundwater were removed from the excavation.

The two wells W1 and W3 were damaged in 1994, were replaced in 1995 by wells W1 and W3A. These wells were destroyed in 1997. In 2002 wells MW4 through MW6 were installed down-gradient of the site within Mission Gorge Road. High dissolved phase concentrations of gasoline, benzene and tert-butyl alcohol were detected in groundwater. Three additional off site wells (MW7-MW9) were installed in the median of Highway 52 in 2010. These six wells have been gauged and monitored for three rounds and the groundwater sampling results were consistent. In September 2011, gasoline and benzene were present in the two up-gradient wells MW5 and MW6 at concentrations up to 15,000 ug/l and 1300 ug/l, respectively. Gasoline was detected in only one down gradient well (MW9) at 53 ug/l, which is just above the laboratory reporting limit of 50 ug/l. Benzene has not been detected in the down-gradient wells. Free product has not been detected in any of the new wells since they were installed.

The consultant conducted a sensitive receptor survey in 2009. The only potential sensitive receptor that was identified as having a potentially complete pathway for chemicals released from the site was the San Diego River. Upon further study the consultant concluded that it was unlikely that the pathway was complete, based on the distance of the river from the site (400 ft) and the size of the plume.

Utilities are buried in trenches around the perimeters of the site at depths ranging from 1 to 8 feet below ground surface. The consultant indicated that it is unlikely that the utility trenches will serve as conduits for migration of contaminants since the depth to water has ranged from 11.33 to 21.41 feet below ground surface and there is at least a three foot difference in depth between the plume and the utilities.

Groundwater in the area is classified as beneficial use. The PureFlo Water Company operates a well located at 7737 Mission Gorge Road. This well is nine hundred and ten feet deep and is located more than 1000 feet away from the site. The water from the well is treated by several processes and meets all US public health standards. A representative of Pureflo indicated to the consultant that the well produces approximately 30,000 gallons of water per day and water quality samples collected prior to treatment have never indicated the presence of petroleum constituents. The consultant concluded based on this information that there was not a complete pathway to this well and it was not considered a sensitive receptor. The consultant contacted the engineering department of the Padre Dam Water District that services the area, regarding the use of groundwater in the area. The Padre Dam Water District indicated that they imported all their water. They have no plans to use groundwater in this area.

The consultant estimated that benzene concentrations in groundwater will reach the maximum contaminant level (MCL) of 1 ug/l in approximately 100 years. Ethylbenzene concentrations will reach the MCL of 300 ug/l in approximately 23 years. MTBE and TBA are currently below the MCL and State Notification levels, respectively.

A Corrective Action Plan (CAP) was prepared for the site and the consultant recommended remediation of the groundwater by natural attenuation. The consultant concluded that the source of the contamination had been removed through excavation and the remaining concentrations in soil and groundwater are naturally attenuating and would continue to degrade. The consultant indicated that there were no sensitive receptors in the area or utilities that would be impacted by the site. The consultant concluded that there are no risks to human health from the groundwater at the site for the current use as a paved park and ride. The consultant has recommended no further action for the site and DEH concurs with this recommendation.

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

IV. CLOSURE

H20827-002

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? No, benzene and ethylbenzene are currently above the MCLs. These compounds will naturally attenuate and reach the MCLs in approximately 100 and 23 years, respectively.

Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? No, benzene and ethylbenzene are currently above the MCLs. These compounds will naturally attenuate and reach the MCLs in approximately 100 and 23 years, respectively.

Does corrective action protect public health for current land use? Yes

Case oversight completed based upon the following site use: CalTrans Park & Ride

Site Management Requirements:
Any Contaminated Soil Excavated As Part Of Subsurface Construction Work Must Be Managed In Accordance With The Legal Requirements At That Time.

Should corrective action be reviewed if land use changes? Yes

Monitoring Wells Decommissioned: Yes	Number Decommissioned: 3	Number Retained: 6

List Actions Taken: Notice Of Reimbursement/Local

List Enforcement Actions Rescinded: NONE

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Kevin M. Heaton, PG 4163, CHg 163	Title: Senior Hydrogeologist
Signature: KMH	Date: 9/6/2012

VI. RWQCB NOTIFICATION

Date Submitted to RB: 7/26/2012	RB Response: No response	
RWQCB Staff Name: Craig Carlisle	Title: Senior Engineering Geologist	Date: 8/26/2012

VII. ADDITIONAL COMMENTS, DATA, ETC.

Well destruction permit LMON 108731

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

JACK MILLER
Director

County of San Diego

ELIZABETH POZZEBON
Assistant Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
Phone: (858) 505-6700/1 (800) 253-9933
www.sdcdeh.org

July 9, 2013

Ms. Mary Garmo, Trustee
Dari and Mary Garmo Family Trust
1480 Hidden Mesa Trail
El Cajon, CA 92019

Dear Ms. Garmo:

UNDERGROUND STORAGE TANK (UST) CASE #124739-001
MISSION GORGE CAR WASH
7751 MISSION GORGE ROAD, SANTEE, CA 92071

This letter confirms the completion of a site investigation and corrective action for the underground storage tanks formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tanks is greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tanks site is in compliance with the requirements of subdivisions (a) and (b) of Section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.3 of the Health and Safety Code, and that no further action related to the petroleum release at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to Section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of Section 25296.10 of the Health and Safety Code.

Please contact Colleen Hines, at (858) 505-6874, if you have questions regarding this matter.

Sincerely,

JACK MILLER, Director
Department of Environmental Health
Site Assessment and Mitigation Program

Enclosure

cc: Mr. Joseph Hannaney, H.E.M.C. Environmental Management Corp.

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

DATE: 7/9/2013

Agency Name: COUNTY OF SAN DIEGO, ENVIRONMENTAL HEALTH, SAM	Address: P.O. BOX 129261
City/State/Zip: SAN DIEGO, CA 92112-9261	Phone: (858) 505-6874 FAX: (858) 505-6891
Responsible Staff Person: COLLEEN HINES	Title: ENVIRONMENTAL HEALTH SPECIALIST II

II. CASE INFORMATION

Site Facility Name: MISSION GORGE CARWASH

Site Facility Address: 7751 MISSION GORGE ROAD, SANTEE, CA 92071

RB LUSTIS Case No: N/A	Local Case No: 124739-001	LOP Case No: N/A
URF Filing Date: 8/13/2006	SWEEPS No: N/A	

Responsible Parties	Address	Phone Number
DARI AND MARY GARMO FAMILY TRUST 08-26-99/ MARY GARMO, TRUSTEE	1480 HIDDEN MESA TRAIL, EL CAJON, CA 92019	619-442-4017

Tank No.	Size in Gal.	Contents	Status	Date
T001	6,000 GALLONS	GASOLINE	CLOSED BY REMOVAL	7/13/2006
T002	6,000 GALLONS	GASOLINE	CLOSED BY REMOVAL	7/13/2006

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause of Release: SUBSTANCE RELEASED FROM UST(S)	Substance Released: GASOLINE	
Site Characterization complete: YES	Date Approved By Oversight Agency: 8/20/2012	
Monitoring Wells Installed? YES	Number: 4	Proper Screened Interval? NO
Highest GW Depth B.G. Surface: 3.92 FEET	Lowest Depth: 16.08 FEET	Flow Direction: WEST

Most Sensitive Current Use: Existing Beneficial Groundwater Use: MUN, AGR, IND, PROC
Existing Beneficial Surface Water Use: IND, REC1, REC2, AND POTENTIAL: MUN

Are Drinking Water Wells Affected? NO	Aquifer Name: 907.12 – SANTEE HYDROLOGIC SUB AREA
Is Surface Water Affected? NO	Nearest SW name: SAN DIEGO RIVER APPROXIMATELY 1,300 FEET TO NORTH

Off-Site Beneficial Use Impacts (addresses/locations): NONE

Report(s) on file? YES	Where is Report(s) Filed? COUNTY OF SAN DIEGO, ENVIRONMENTAL HEALTH

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	Amount (Include Units)	Action (Treatment or Disposal)	Date
TANKS	2 N/A	DISPOSAL OFF-SITE / SYCAMORE LANDFILL	7/13/2006
TANK RINSATE	300 GALLONS	TREATED OFF-SITE / DEMENNO KERDOON	7/14/2006
SOIL	8,000 POUNDS	TREATED OFF-SITE / SOIL SAFE OF CALIFORNIA	12/21/2011
SOIL	4,520 POUNDS	TREATED OFF-SITE / SOIL SAFE OF CALIFORNIA	5/6/2013
PURGE WATER	550 GALLONS	TREATED OFF-SITE / DEMENNO KERDOON	12/28/2011
PURGE WATER	165 GALLONS	TREATED OFF-SITE / DEMENNO KERDOON	5/3/2013

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued) 124739-001

MAXIMUM DOCUMENTED CONTAMINANT CONCENTRATIONS	MAXIMUM	REMAINING
SOIL		
GASOLINE	< 10 mg/kg	< 10 mg/kg
DIESEL	< 10 mg/kg	< 10 mg/kg
BENZENE	= 0.0061 mg/kg	= 0.0061 mg/kg
TOLUENE	= 0.011 mg/kg	= 0.011 mg/kg
ETHYLBENZENE	< 0.005 mg/kg	< 0.005 mg/kg
XYLENES (TOTAL)	= 0.0196 mg/kg	< 0.004 mg/kg
METHYL-TERT-BUTYL ETHER (MTBE)	= 0.98 mg/kg	= 0.98 mg/kg
TERT-BUTYL ALCOHOL (TBA)	< 0.1 mg/kg	< 0.1 mg/kg
NAPHTHALENE	< 0.005 mg/kg	< 0.005 mg/kg
WATER		
GASOLINE	< 50 ug/l	< 50 ug/l
BENZENE	< 2 ug/l	< 2 ug/l
TOLUENE	< 2 ug/l	< 2 ug/l
ETHYLBENZENE	< 2 ug/l	< 2 ug/l
XYLENES (TOTAL)	< 4 ug/l	< 4 ug/l
METHYL-TERT-BUTYL ETHER (MTBE)	< 5 ug/l	< 5 ug/l
TERT-BUTYL ALCOHOL (TBA)	< 50 ug/l	< 50 ug/l
NAPHTHALENE	< 5 ug/l	< 5 ug/l

Comments:

On July 13, 2006, two underground storage tanks (USTs) containing gasoline, four fuel dispensers, and associated piping were removed from the site. Soil samples were collected from the bottom of the UST excavation and under each dispenser, and petroleum hydrocarbons were not detected in any of the soil samples. Volatile organic compounds were detected in soil samples collected from under the west end of UST T001 and the second dispenser. Methyl *tert*-butyl ether (MTBE) was detected in both samples at a maximum of 0.98 milligrams per kilogram (mg/kg). Based upon these results, Unauthorized Release case 124739-001 was opened.

In 2006, DEH determined that there was a supply well located approximately 200 feet to the southwest of the site. Based upon the concentration of MTBE detected in the soil samples and the proximity to the well, DEH assigned a priority of "A" to the site and directed the assessment of MTBE impacts to soil and groundwater.

In March 2010, four groundwater monitoring wells were installed on the site. Petroleum constituents were not detected in soil samples collected during drilling. Groundwater monitoring and sampling was completed in May 2010, August 2011, and June 2012. Groundwater levels were above the screened interval in groundwater monitoring wells MW-2 and MW-3 in May 2010, and in all of the monitoring wells in August 2011 and June 2012. Since petroleum constituents were not detected in any of the groundwater samples, DEH accepted the samples as representative of site conditions. The consultant concludes that groundwater was not impacted by the Unauthorized Release.

Based upon soil staining observed during removal of the USTs, the consultant estimates that there is approximately 8.33 cubic yards of petroleum-impacted soil remaining on site. The mass of residual petroleum on site is estimated at less than 0.5 pounds. Given the small amount of contaminated soil remaining at the site and its location under asphalt, the consultant concludes that there is very low risk to human health. The consultant further concludes that the hydrocarbon contamination is unlikely to impact groundwater resources, including the supply well located to the southwest of the site.

Based upon these conclusions, the consultant recommends no further action for the case. DEH concurs with the consultant's conclusions and recommendation to close the case.

Case Closure Summary
Leaking Underground Fuel Storage Tank Program

IV. CLOSURE 124739-001

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? YES		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? YES		
Does corrective action protect public health for current land use? YES Case oversight completed based upon the following site use: COMMERCIAL		
Site Management Requirements: ANY CONTAMINATED SOIL EXCAVATED AS PART OF SUBSURFACE CONSTRUCTION WORK MUST BE MANAGED IN ACCORDANCE WITH THE LEGAL REQUIREMENTS AT THAT TIME.		
Should corrective action be reviewed if land use changes? YES		
Monitoring Wells Decommissioned: NO	Number Decommissioned: 0	Number Retained: 4
List Actions Taken: NOTICE OF REIMBURSEMENT/LOCAL		
List Enforcement Actions Rescinded: NONE		

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: TONY V. SAWYER, PG #4345, CHg #40	Title: HYDROGEOLOGIST
Signature: Tony V. Sawyer	Date: 7-9-13

VI. RWQCB NOTIFICATION

Date Submitted to RB: N/A, SOILS ONLY	RB Response: N/A	
RWQCB Staff Name: N/A	Title: N/A	Date: N/A

VII. ADDITIONAL COMMENTS, DATA, ETC.

*AN APPLICATION FOR DESTRUCTION OF THE MONITORING WELLS HAS BEEN SUBMITTED AND THE PERMIT NUMBER IS LMWP-108718.

This document and the related CASE CLOSURE LETTER, shall be retained by the lead agency as part of the official site file.

California Regional Water Quality Control Board, San Diego Region

April 13, 2016

In reply refer to
T0607300542:smcclain

Interra-Vision (Santee), LLC
c/o Mr. Tom Gamsjaeger
Healthcare Development Partners, LLC
180 North Michigan Avenue, Suite 510
Chicago, IL 60601

Subject: Uniform Closure Letter for Towne Center Service Station, 9305 Mission Gorge Road, Santee, California

Mr. Gamsjaeger:

This letter confirms the completion of a site investigation and corrective action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

Claims for reimbursement of corrective action costs submitted to the Underground Storage Tank Cleanup Fund more than 365 days after the date of this letter or issuance or activation of the Fund's Letter of Commitment, whichever occurs later, will not be reimbursed unless one of the following exceptions applies:

- Claims are submitted pursuant to section 25299.57, subdivision (k) (reopened UST case); or
- Submission within the timeframe was beyond the claimant's reasonable control, ongoing work is required for closure that will result in the submission of claims beyond that time period, or that under the circumstances of the case, it would be unreasonable or inequitable to impose the 365-day time period.

This notice is issued pursuant to subdivision (g) of section 25296.10 of the Health and Safety Code.

Please be advised that:

1. Any land use changes for the site may require reevaluation to determine if the changes pose an unacceptable risk to public health;

2. Any contaminated soil encountered or excavated as part of future subsurface construction/utility work must be managed in accordance with all applicable legal and regulatory requirements; and,

3. All future construction on the project area must include post construction best management practices to control storm water runoff in compliance with the US Environmental Protection Agency Guidance Document: "Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act."

In the subject line of any response, please include the reference code **T0607300542:smcclain.** For questions or comments, please contact Sean McClain by phone at 619.521.3374 or by email sean.mcclain@waterboards.ca.gov.

Respectfully,

DAVID W. GIBSON
Executive Officer

DWG:jgs:jc:clc:sm

cc (via e-mail):

Daniel A. Weis, Advantage Environmental Consultants, LLC, dweis@aec-env.com.

Walgreen CO LF Interra-Vision Santee, LLC, PO Box 1159, Deerfield, IL 60015.

BDI Carlton Hills, 16909 W Bernardo Dr., San Diego, CA, 92127.

Tech Staff Info & Use	
GeoTracker Global ID	T0607300542

California Regional Water Quality Control Board, San Diego Region

April 13, 2016

In reply refer to
T0607300542:smcclain

Interra-Vision (Santee), LLC
c/o Mr. Tom Gamsjaeger
Healthcare Development Partners, LLC
180 North Michigan Avenue, Suite 510
Chicago, IL 60601

Subject: Uniform Closure Letter for Towne Center Service Station, 9305 Mission Gorge Road, Santee, California

Mr. Gamsjaeger:

This letter confirms the completion of a site investigation and corrective action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of section 25296.10 of the Health and Safety Code and with corrective action regulations adopted pursuant to section 25299.3 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

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Please be advised that:

1. Any land use changes for the site may require reevaluation to determine if the changes pose an unacceptable risk to public health;

2. Any contaminated soil encountered or excavated as part of future subsurface construction/utility work must be managed in accordance with all applicable legal and regulatory requirements; and,

3. All future construction on the project area must include post construction best management practices to control storm water runoff in compliance with the US Environmental Protection Agency Guidance Document: "Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act."

In the subject line of any response, please include the reference code **T0607300542:smcclain.** For questions or comments, please contact Sean McClain by phone at 619.521.3374 or by email sean.mcclain@waterboards.ca.gov.

Respectfully,

DAVID W. GIBSON
Executive Officer

DWG:jgs:jc:clc:sm

cc (via e-mail):

Daniel A. Weis, Advantage Environmental Consultants, LLC, dweis@aec-env.com.

Walgreen CO LF Interra-Vision Santee, LLC, PO Box 1159, Deerfield, IL 60015.

BDI Carlton Hills, 16909 W Bernardo Dr., San Diego, CA, 92127.

Tech Staff Info & Use	
GeoTracker Global ID	T0607300542

Appendix E

In accordance with ASTM Standard E2600-10 and the Buonicore method (2009)[1], Advanced GeoEnvironmental, Inc. (AGE) performed the following Tier 1 Vapor Encroachment Conditions (VEC) screening, which includes: **(1) a Search Distance Test; (2) a Critical Distance Test; and (3) Conclusions.**

(1) **<u>Search Distance Test</u>: The initial Area of Concern (AOC) is based on the hydrogeologic position of a contaminated site from the subject property (SP).** Are there any known or suspect contaminated sites, including the SP, with Chemicals of Concern (COC), such as volatile or semi-volatile hazardous substances or petroleum products, within the Area of Concern (AOC)?

- The AOC for **non-petroleum hydrocarbon COC** is **1,760 feet (1/3-mile) in the up-gradient hydrogeologic position** (or flow direction unknown), **100 feet in the down gradient position** or **365 feet in the cross gradient position** from the contaminated site to the boundary of the SP.
- The AOC for **dissolved petroleum hydrocarbon or free product (light non-aqueous phase liquids [LNAPL]) COC** is **520 feet in the up-gradient hydrogeologic position** (or flow direction unknown), **30 feet in down-gradient position (100 feet for LNAPL)** and **95 feet in the cross-gradient position (165 feet for LNAPL)** from the contaminated site to the boundary of the SP.

Yes **X** No If the answer is **No**, then the Tier 1 screening is complete, and no VEC currently exists, proceed to **(3)**. If the answer is **Yes**, proceed to **(1a)**. **Identify contaminated site(s) here**:

(1a) Is there a hydraulic (e.g., a river) or physical barrier (e.g., clay barrier) between the SP and the suspected contaminated site (or sites)?

Yes No If the answer is No, then proceed to **(2)**. If the answer is **Yes, list barrier here** and then proceed to **(3)**:

(2) **<u>Critical Distance Test</u>:** Critical distance is the maximum distance a vapor can reasonably be expected to migrate through soil in the vadose zone assuming that the path of least resistance is directly from the nearest edge of the contaminated media such as groundwater or soil to the nearest boundary of the SP.

(2a) Is information (data) related to the contaminant plume(s) available (i.e. isoconcentration maps, site drawings, analytical results)?

Yes No If the answer is **No**, then proceed to **(3)** as a VEC cannot be ruled out. If the answer is **Yes**, then proceed to **(2b)** for non-petroleum hydrocarbon COC or **(2c)** for dissolved petroleum hydrocarbon and petroleum hydrocarbon free (LNAPL) COC.

(2b) For **non-petroleum hydrocarbon** sites:

Yes No Is the plume within **1,760 feet up-gradient** (or flow direction unknown) of the closest boundary of the SP? (Note: If flow direction is unknown, use an AOC of 1,760 feet)

Yes No Is the plume within **100 feet down-gradient** of the closest boundary of the SP?

Yes No Is the plume within **365 feet cross-gradient** of the closest boundary of the SP?

If the answer is **Yes** to any of the above questions, then proceed to **(3)** as a VEC exists or is likely to exist / cannot be ruled out. If the answer to all three of the above questions is **No**, then proceed to **(3)** as a VEC is unlikely to exist.

(2c) For **dissolved petroleum hydrocarbon or LNAPL COC** sites:

Yes No Is the plume within **520 feet up-gradient** (or flow direction unknown) of the closest boundary of the SP? (Note: If flow direction is unknown, use an AOC of 1,760 feet)

Yes No Is the plume within **30 feet down-gradient** (or **100 feet for LNAPL**) of the closest boundary of the SP?

Yes No Is the plume within **95 feet cross-gradient** (or **165 feet for LNAPL**) of the closest boundary of the SP?

If the answer is **Yes** to any of the above questions, then proceed to **(3)** as a VEC exists or is likely to exist / cannot be ruled out. If the answer to all three of the above questions is **No**, then proceed to **(3)** as a VEC is unlikely to exist.

(3) <u>Conclusions</u>: Impact on Subject Property

A VEC exists

A VEC is likely to exist or cannot be ruled out

X A VEC does not exist or is unlikely to exist

If a VEC exists or is likely to exist/cannot be ruled out, Advanced GeoEnvironmental, Inc. may recommend performance of a Tier 2 VEC screening, which can include soil-vapor sampling.

Notes:

[1] Buonicore, A.J., Screening for Potential Vapor Intrusion Problems, Paper #129, Proc. AWMA 102nd Annual Conference, Detroit, MI, June 16-19, 2009

Appendix F

ROBERT D. LOEFFLER

POSITION VICE PRESIDENT, SENIOR GEOLOGIST

EDUCATION B.S. Geological Sciences – Calif. State University, Fullerton, 1988

Course work in ground water technologies - UC Davis Extension, 1989

PROFESSIONAL REGISTRATION

California Professional Geologist No. 6709
Nevada Environmental Manager No. 1260
Arizona Registered Geologist No. 34944
Washington Licensed Geologist No. 2751
Texas Professional Geoscientist No. 10890
Registered Environmental Property Assessor No. 136161 (NREP)

DUTIES Mr. Loeffler's current duties include design, planning, coordination, and supervision of various environmental projects. These projects include the different phases of environmental assessment, site assessments, and mitigation of contaminated soil and ground water. During the course of these projects, he acts as liaison between the client and regulatory agencies, schedules work, supervises projects from start to finish, and prepares and reviews reports.

EMPLOYMENT HISTORY

1992 - present: Vice President - Senior Geologist
Advanced GeoEnvironmental, Inc.

1989 - 1992: Project Geologist
Geological Audit Services, Inc., Yorba Linda, California

1988 - 1989: Staff Geologist
Applied Hydrogeologic Consultants, Santa Ana, California

1988: Geologist
USGS - Pacific Marine Division, Seattle, Washington

James A. Bunck

POSITION PRESIDENT - IWS Environmental

EDUCATION M.S. Economics - California State University, Long Beach,

Environmental Post Graduate Studies UC Irvine Extension

PROFESSIONAL REGISTRATION

"A" General Engineering Contractor, No. 724465
Hazardous Substance Removal Contractor, No. 724465

PROFESSIONAL EXPERIENCE

Mr. Bunck has over 25 years of professional experience in the environmental field with extensive experience in Phase I Environmental Site Assessments, ground water monitoring, regulatory and hazardous materials consulting and storm water compliance. Mr. Bunck currently oversees storm water compliance for several national corporations.

WATER QUALITY ANALYSIS

FOR

SAN DIEGO RIVER TRAIL
CARLTON OAKS GOLF COURSE SEGMENT
CITIES OF SAN DIEGO AND SANTEE, CA

Prepared for

San Diego Association of Governments (SANDAG)

401 B Street #800
San Diego, CA 92101

Prepared by

Nasland Engineering

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December 21, 2016

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Figure 1 – Proposed Project Alignment

ATTACHMENTS

Attachment 1 – City of San Diego Storm Water Requirements Applicability Checklist (DS-560)

Attachment 2 – City of San Diego Source Control BMP Checklist for Standard Projects (Form I-4)

Attachment 3 – City of San Diego Site Design BMP Checklist for Standard Projects (Form I-5)

Attachment 4 – City of San Diego Guidance for Qualifying for PDP Exemption Category 1

Attachment 5 – City of Santee Storm Water Intake Form

Attachment 6 – City of Santee Source Control BMP Checklist (Form I-4)

Attachment 7 – City of Santee Site Design BMP Checklist (Form I-5)

PURPOSE

This Water Quality Analysis Report has been prepared to provide an assessment of the compliance of the San Diego River Trail Project, Carlton Oaks Golf Course Segment Project with the California Regional Water Quality Control Board's National Pollution Discharge Elimination System permit (Municipal Separate Storm Sewer Systems (MS4) Permit); the MS4 Permit as amended by Order R9-2015-0001 and R9-2015-0100. The project is located in both the City of San Diego and City of Santee's jurisdiction. Because both cities are co-permittees of the MS4 permit, they have adopted local Storm Water Standards Manuals in compliance with the permit. Specifically, the City of San Diego's 2016 Storm Water Standards and the City of Santee's Storm Water Ordinance and BMP Design Manual.

Based on the City of San Diego and City of Santee's adopted storm water requirements, the San Diego River Trail Project, Carlton Oaks Golf Course Segment qualifies as a Priority Development Project (PDP) Exempt, Category 1 Project.

PROJECT DESCRIPTION

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

SECTION 303(d) LIST OF WATER QUALITY LIMITED SEGMENTS

The San Diego River Trail Project, Carlton Oaks Golf Course Segment is within the San Diego River Basin, in the San Diego River (Upper) Segment. The San Diego River (Upper) Segment is not listed on the 2012 version of the 303(d) list of surface water bodies that are polluted (referred to in the law as "water quality limited segments").

The project proposes a paved, non-motorized trail. Runoff from the project would be directed to adjacent vegetated areas or other non-erodible permeable areas. Following the City of San Diego and City of Santee's Site Design Best Management Practices, the project would not create an adverse impact to water quality in the San Diego River (Upper) Basin.



Source: Google Earth

Figure 1 – Proposed Project Alignment

CITY OF SAN DIEGO STORM WATER REQUIREMENTS

The proposed project qualifies as exempt from City of San Diego Priority Development Project (PDP) storm water requirements because it consists of a new bike and pedestrian trail that would direct storm water runoff to adjacent vegetated areas or other non-erodible permeable areas. As a result, the project is not required to include pollutant treatment or hydromodification controls. For details on how this determination was made please see Attachments 1 and 4.

Per City of San Diego requirements, PDP exempt projects are still required to comply with site design and source control BMP requirements as described in the City of San Diego Storm Water Standards Manual. The types of site design and source control measures that could be included in the proposed project are shown in Attachments 2 and 3.

CITY OF SANTEE STORM WATER REQUIREMENTS

The proposed project qualifies as exempt from City of Santee PDP storm water requirements because it consists of a new bike and pedestrian trail that would direct storm water runoff to adjacent vegetated areas or other non-erodible permeable areas. As a result, the project is not required to include pollutant treatment or hydromodification controls. For details on how this determination was made please see Attachment 5.

Per City of Santee requirements, PDP exempt projects are still required to comply with site design BMP requirements, source control BMP requirements, and prepare a Standard Development Project Storm Water Quality Management Plan. The types of site design and source control measures that could be included in the proposed project are shown in Attachments 6 and 7.

Prepared under the supervision of:



Samuel Waisbord, RCE 78071

Date: 12/21/2016

Attachment 1

City of San Diego Storm Water Requirements
Applicability Checklist (DS-560)

THE CITY OF SAN DIEGO
City of San Diego
Development Services
1222 First Ave., MS-302
San Diego, CA 92101
(619) 446-5000

Storm Water Requirements Applicability Checklist

FORM
DS-560
FEBRUARY 2016

Project Address: SAN DIEGO RIVER TRAIL (SDRT) CARLTON OAKS GOLF COURSE SEGMENT	Project Number *(for City Use Only):*

SECTION 1. Construction Storm Water BMP Requirements:

All construction sites are required to implement construction BMPs in accordance with the performance standards in the Storm Water Standards Manual. Some sites are additionally required to obtain coverage under the State Construction General Permit (CGP)[1] , which is administered by the State Water Resources Control Board.

For all project complete PART A: If project is required to submit a SWPPP or WPCP, continue to PART B.

PART A: Determine Construction Phase Storm Water Requirements.

1. Is the project subject to California's statewide General NPDES permit for Storm Water Discharges Associated with Construction Activities, also known as the State Construction General Permit (CGP)? (Typically projects with land disturbance greater than or equal to 1 acre.)

☒ Yes; SWPPP required, skip questions 2-4 ☐ No; next question

2. Does the project propose construction or demolition activity, including but not limited to, clearing, grading, grubbing, excavation, or any other activity that results in ground disturbance and contact with storm water runoff?

☐ Yes; WPCP required, skip 3-4 ☐ No; next question

3. Does the project propose routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility? (Projects such as pipeline/utility replacement)

☐ Yes; WPCP required, skip 4 ☐ No; next question

4. Does the project only include the following Permit types listed below?
   - Electrical Permit, Fire Alarm Permit, Fire Sprinkler Permit, Plumbing Permit, Sign Permit, Mechanical Permit, Spa Permit.
   - Individual Right of Way Permits that exclusively include only ONE of the following activities: water service, sewer lateral, or utility service.
   - Right of Way Permits with a project footprint less than 150 linear feet that exclusively include only ONE of the following activities: curb ramp, sidewalk and driveway apron replacement, pot holing, curb and gutter replacement, and retaining wall encroachments.

☐ Yes; no document required

Check one of the boxes to the right, and continue to PART B:

☐ If you checked "Yes" for question 1, **a SWPPP is REQUIRED. Continue to PART B**

☐ If you checked "No" for question 1, and checked "Yes" for question 2 or 3, **a WPCP is REQUIRED.** If the project proposes less than 5,000 square feet of ground disturbance AND has less than a 5-foot elevation change over the entire project area, a Minor WPCP may be required instead. **Continue to PART B.**

☐ If you checked "No" for all questions 1-3, and checked "Yes" for question 4 PART B **does not apply and no document is required. Continue to Section 2.**

1. More information on the City's construction BMP requirements as well as CGP requirements can be found at: www.sandiego.gov/stormwater/regulations/index.shtml

PART B: Determine Construction Site Priorit

This prioritization must be completed within this form, noted on the plans, and included in the SWPPP or WPCP. The city reserves the right to adjust the priority of projects both before and after construction. Construction projects are assigned an inspection frequency based on if the project has a "high threat to water quality." The City has aligned the local definition of "high threat to water quality" to the risk determination approach of the State Construction General Permit (CGP). The CGP determines risk level based on project specific sediment risk and receiving water risk. Additional inspection is required for projects within the Areas of Special Biological Significance (ASBS) watershed. **NOTE:** The construction priority does **NOT** change construction BMP requirements that apply to projects; rather, it determines the frequency of inspections that will be conducted by city staff.

Complete PART B and continued to Section 2

1. ☐ **ASBS**

a. Projects located in the ASBS watershed.

2. ☐ **High Priority**

a. Projects 1 acre or more determined to be Risk Level 2 or Risk Level 3 per the Construction General Permit and not located in the ASBS watershed.

b. Projects 1 acre or more determined to be LUP Type 2 or LUP Type 3 per the Construction General Permit and not located in the ASBS watershed.

3. ☒ **Medium Priority**

a. Projects 1 acre or more but not subject to an ASBS or high priority designation.

b. Projects determined to be Risk Level 1 or LUP Type 1 per the Construction General Permit and not located in the ASBS watershed.

4. ☐ **Low Priority**

a. Projects requiring a Water Pollution Control Plan but not subject to ASBS, high, or medium priority designation.

SECTION 2. Permanent Storm Water BMP Requirements.

Additional information for determining the requirements is found in the Storm Water Standards Manual.

PART C: Determine if Not Subject to Permanent Storm Water Requirements.

Projects that are considered maintenance, or otherwise not categorized as "new development projects" or "redevelopment projects" according to the Storm Water Standards Manual are not subject to Permanent Storm Water BMPs.

If "yes" is checked for any number in Part C, proceed to Part F and check "Not Subject to Permanent Storm Water BMP Requirements".

If "no" is checked for all of the numbers in Part C continue to Part D.

1.	Does the project only include interior remodels and/or is the project entirely within an existing enclosed structure and does not have the potential to contact storm water?	☐ Yes	☒ No
2.	Does the project only include the construction of overhead or underground utilities without creating new impervious surfaces?	☐ Yes	☒ No
3.	Does the project fall under routine maintenance? Examples include, but are not limited to: roof or exterior structure surface replacement, resurfacing or reconfiguring surface parking lots or existing roadways without expanding the impervious footprint, and routine replacement of damaged pavement (grinding, overlay, and pothole repair).	☐ Yes	☒ No

PART D: PDP Exempt Requirements.

PDP Exempt projects are required to implement site design and source control BMPs.

If "yes" was checked for any questions in Part D, continue to Part F and check the box labeled "PDP Exempt."

If "no" was checked for all questions in Part D, continue to Part E.

1. Does the project ONLY include new or retrofit sidewalks, bicycle lanes, or trails that:
   - Are designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas? Or;
   - Are designed and constructed to be hydraulically disconnected from paved streets and roads? Or;
   - Are designed and constructed with permeable pavements or surfaces in accordance with the Green Streets guidance in the City's Storm Water Standards manual?

   ☒ Yes; PDP exempt requirements apply ☐ No; next question

2. Does the project ONLY include retrofitting or redeveloping existing paved alleys, streets or roads designed and constructed in accordance with the Green Streets guidance in the City's Storm Water Standards Manual?

   ☐ Yes; PDP exempt requirements apply ☐ No; project not exempt. PDP requirements apply

PART E: Determine if Project is a Priority Development Project (PDP).
Projects that match one of the definitions below are subject to additional requirements including preparation of a Storm Water Quality Management Plan (SWQMP).

If "yes" is checked for any number in PART E, continue to PART F.

If "no" is checked for every number in PART E, continue to PART F and check the box labeled "Standard Development Project".

1.	**New Development that creates 10,000 square feet or more of impervious surfaces collectively over the project site.** This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.	☐ Yes ☐ No
2.	**Redevelopment project that creates and/or replaces 5,000 square feet or more of impervious surfaces on an existing site of 10,000 square feet or more of impervious surfaces**. This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.	☐ Yes ☐ No
3.	**New development or redevelopment of a restaurant.** Facilities that sell prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC 5812), and where the land development creates and/or replace 5,000 square feet or more of impervious surface.	☐ Yes ☐ No
4.	**New development or redevelopment on a hillside.** The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site) and where the development will grade on any natural slope that is twenty-five percent or greater.	☐ Yes ☐ No
5.	**New development or redevelopment of a parking lot that creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site).**	☐ Yes ☐ No
6.	**New development or redevelopment of streets, roads, highways, freeways, and driveways.** The project creates and/or replaces 5,000 square feet or more of impervious surface (collectively over the project site).	☐ Yes ☐ No

7. **New development or redevelopment discharging directly to an Environmentally Sensitive Area.** The project creates and/or replaces 2,500 square feet of impervious surface (collectively over project site), and discharges directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). ❑ Yes ❑ No

8. **New development or redevelopment projects of a retail gasoline outlet (RGO) that create and/or replaces 5,000 square feet of impervious surface.** The development project meets the following criteria: (a) 5,000 square feet or more or (b) has a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. ❑ Yes ❑ No

9. **New development or redevelopment projects of an automotive repair shops that creates and/or replaces 5,000 square feet or more of impervious surfaces.** Development projects categorized in any one of Standard Industrial Classification (SIC) codes 5013, 5014, 5541, 7532-7534, or 7536-7539. ❑ Yes ❑ No

10. **Other Pollutant Generating Project.** The project is not covered in the categories above, results in the disturbance of one or more acres of land and is expected to generate pollutants post construction, such as fertilizers and pesticides. This does not include projects creating less than 5,000 sf of impervious surface and where added landscaping does not require regular use of pesticides and fertilizers, such as slope stabilization using native plants. Calculation of the square footage of impervious surface need not include linear pathways that are for infrequent vehicle use, such as emergency maintenance access or bicycle pedestrian use, if they are built with pervious surfaces of if they sheet flow to surrounding pervious surfaces. ❑ Yes ❑ No

PART F: Select the appropriate category based on the outcomes of PART C through PART E.

1. The project is **NOT SUBJECT TO STORM WATER REQUIREMENTS**. ❑
2. The project is a **STANDARD DEVELOPMENT PROJECT**. Site design and source control BMP requirements apply. See the Storm Water Standards Manual for guidance. ❑
3. The project is **PDP EXEMPT**. Site design and source control BMP requirements apply. See the Storm Water Standards Manual for guidance. ☒
4. The project is a **PRIORITY DEVELOPMENT PROJECT**. Site design, source control, and structural pollutant control BMP requirements apply. See the Storm Water Standards Manual for guidance on determining if project requires a hydromodification plan management ❑

Name of Owner or Agent *(Please Print):* Title:

Signature: Date:

Attachment 2

City of San Diego Source Control BMP Checklist for Standard Projects (Form I-4)

Source Control BMP Checklist for Standard Projects			Form I-4
All development projects must implement source control BMPs SC-1 through SC-6 and. Refer to Chapter 4 and Appendix E of the BMP Design Manual for information to implement BMPs shown in this checklist. **Note: All selected BMPs must be shown on the construction plans.**			
Source Control Requirement	Applied[(1)]?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
SC-2 Storm Drain Stenciling or Signage	☐ Yes	☐ No	☒ N/A
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
SC-6 BMPs based on Potential Sources of Runoff Pollutants			
On-site storm drain inlets	☐ Yes	☐ No	☒ N/A
Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☒ N/A
Interior parking garages	☐ Yes	☐ No	☒ N/A
Need for future indoor & structural pest control	☐ Yes	☐ No	☒ N/A
Landscape/Outdoor Pesticide Use	☒ Yes	☐ No	☐ N/A
Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☒ N/A
Food service	☐ Yes	☐ No	☒ N/A
Refuse areas	☐ Yes	☐ No	☐ N/A
Industrial processes	☐ Yes	☐ No	☒ N/A
Outdoor storage of equipment or materials	☒ Yes	☐ No	☐ N/A
Vehicle/Equipment Repair and Maintenance	☒ Yes	☐ No	☐ N/A
Fuel Dispensing Areas	☐ Yes	☐ No	☒ N/A
Loading Docks	☐ Yes	☐ No	☒ N/A
Fire Sprinkler Test Water	☐ Yes	☐ No	☒ N/A
Miscellaneous Drain or Wash Water	☐ Yes	☐ No	☒ N/A
Plazas, sidewalks, and parking lots	☐ Yes	☐ No	☒ N/A
SC-6A: Large Trash Generating Facilities	☐ Yes	☐ No	☒ N/A
SC-6B: Animal Facilities	☐ Yes	☐ No	☒ N/A
SC-6C: Plant Nurseries and Garden Centers	☐ Yes	☐ No	☒ N/A
SC-6D: Automotive-related Uses	☐ Yes	☐ No	☒ N/A
Discussion / justification for **all** "No" answers shown above:			

Attachment 3

City of San Diego Site Design BMP Checklist for Standard Project (Form I-5)

Site Design BMP Checklist for Standard Projects				Form I-5
All development projects must implement site design BMPs SD-1 through SD-8. Refer to Chapter 4 and Appendix E of the BMP Design Manual for information to implement BMPs shown in this checklist. **Note: All selected BMPs must be shown on the construction plans.**				
Site Design Requirement	Applied[1]?			
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☒ Yes	☐ No	☐ N/A	
SD-2 Conserve Natural Areas, Soils, and Vegetation	☒ Yes	☐ No	☐ N/A	
SD-3 Minimize Impervious Area	☒ Yes	☐ No	☐ N/A	
SD-4 Minimize Soil Compaction	☒ Yes	☐ No	☐ N/A	
SD-5 Impervious Area Dispersion	☒ Yes	☐ No	☐ N/A	
SD-6 Runoff Collection	☒ Yes	☐ No	☐ N/A	
SD-7 Landscaping with Native or Drought Tolerant Species	☒ Yes	☐ No	☐ N/A	
SD-8 Harvesting and Using Precipitation	☐ Yes	☒ No	☐ N/A	
Discussion / justification for **all** "No" answers shown above: SD-8 - No feasible way to collect and hold runoff in a way that would be able to be used on the project site. Collection would also disturb natural drainage pathways.				

[1] Answer for each source control and site design category shall be pursuant to the following:

- "Yes" means the project will implement the BMP as described in Chapter 4 and/or Appendix E of the BMP Design Manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Attachment 4

City of San Diego Guidance for Qualifying for PDP Exemption Category 1

J.1. Guidance for Qualifying for PDP Exemption Category 1

PDP Exemption Category 1 is defined in Section 1.4.3. This section provides technical guidance related to this exemption category, including sidewalks, bicycle lanes or paths that are:

1. Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas (Appendix J.1.1); OR
2. Designed and constructed to be hydraulically disconnected from paved streets or roads (Appendix J.1.2); OR
3. Designed and constructed with permeable pavements or surfaces (Appendix J.1.3).

What does this exemption provide?

Where a project or portion of a project meets the criteria to be considered exempt, then pollutant treatment and hydromodification controls are not required. Additionally, this area should not be included in tabulation of the created, added, or replaced impervious surface.

What are the limitations?

In order to qualify for these exemptions, the exempted projects or areas of a project must meet the applicable criteria in the sections below. PDP exemptions are approved at the discretion of the City Engineer.

J.1.1 Guidance for Directing Storm Water into Vegetated or Non-Erodible Permeable Areas to Meet PDP Exemption Category 1

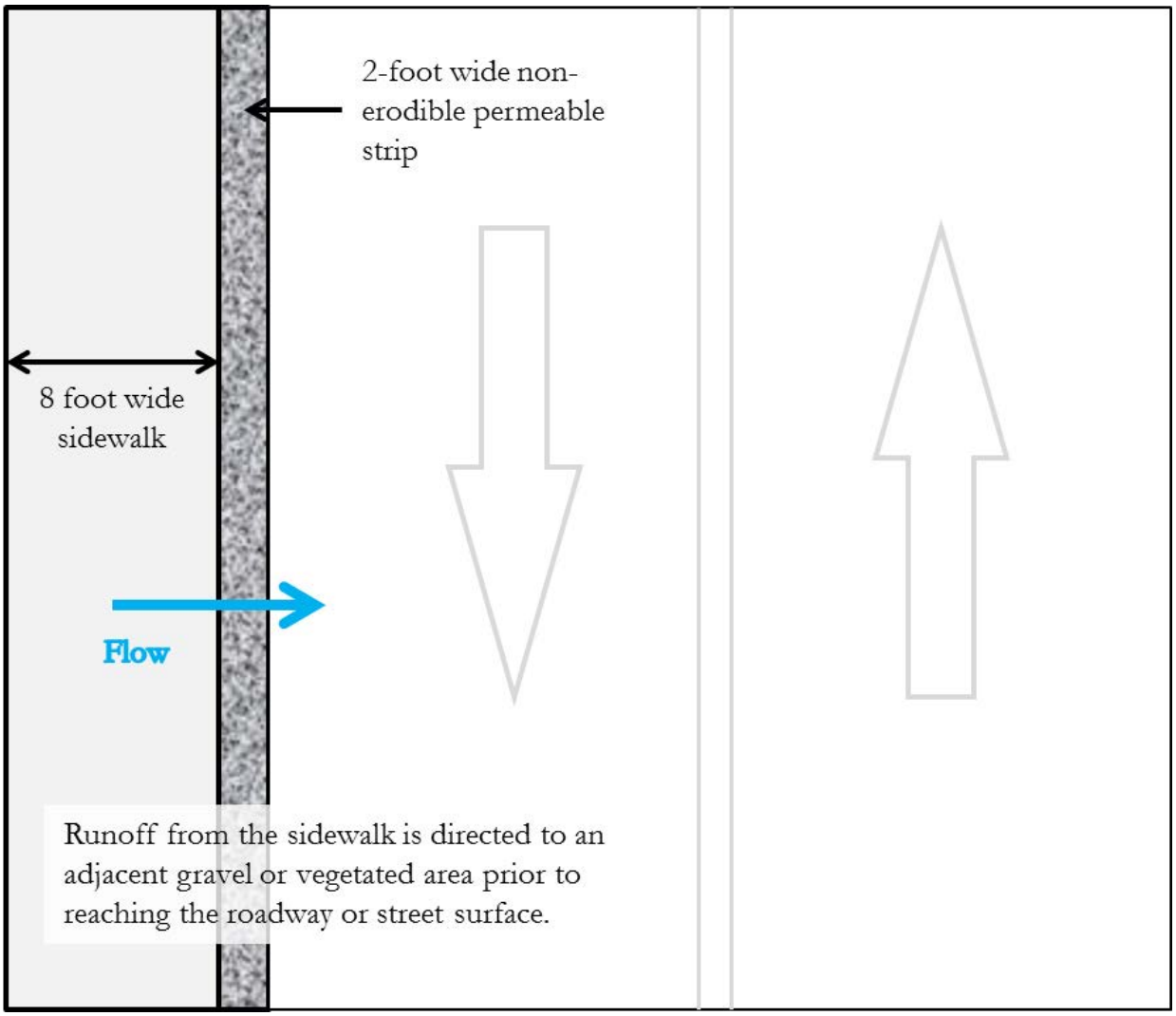
Routing storm water onto vegetated and non-erodible permeable areas can provide an opportunity for infiltration and/or evaporation to occur, particularly in smaller storms. However, the effectiveness of this approach is dependent on the loading ratio (i.e., how much area is routed onto a given permeable area) and whether the surface is resistant to erosion (i.e. shear stress). If loading ratios are too high and/or permeable surfaces are too unstable, this approach can create additional problems relative to erosion and sedimentation.

For the purpose of meeting the criteria of this exemption, one of two options, or equivalent, may be used:

- Satisfy the specifications outlined within the impervious dispersion (SD-5) factsheet, OR
- Route water into an open-graded gravel area greater than or equal to 1 inch diameter (Figure J.1-1), or other surface with similar permeability and resistance to shear stress. For this option, the loading ratio must be less or equal to 5:1 and the contributing path length of the impervious surface must have a maximum length of 20 feet. The sidewalk must be designed with the standard cross slope and the adjacent vegetated/non-erodible permeable area depressed by 2 inches.

The definition of non-erodible permeable surfaces does **NOT** include areas of loose gravel fill, mulch, sand, or soils, which are easily dislodged during sheet flow conditions.

Intent: A vegetated or non-erodible pervious surface must allow water to permeate into the subsurface layers and not be susceptible to erosion at the maximum hydraulic load rates and velocities expected to occur under large storm events, such as the 10-year storm event.



3

Figure J.1-1: Schematic of an all gravel non-erodible permeable area configuration (not to scale)

J.1.2 Guidance for Hydraulic Disconnection to Meet PDP Exemption Category 1

Hydraulic disconnection involves separating the storm water collected from the sidewalk, bicycle lane, and/or trail surface from the runoff collected form an adjacent paved street or roadway. If the surface runoff from the sidewalk, bicycle lane, and/or trail surfaces does not comingle with street runoff on the ground surface and does not enter the same inlet as the street or roadway runoff, then this area can be considered exempt from PDP requirements. Figure J-2 and Figure J-3 provide examples of how this exemption could be achieved. Water is allowed to comingle once it is in the storm drain pipe.

Intent: This exemption seeks to isolate the runoff generated from sidewalks, bicycle lanes, and trails that tend to be cleaner (i.e., less floatables and lower contaminant concentrations) as compared to their street and roadway counterparts. The exemption allows surface runoff from these surfaces to discharge untreated, as long as it does not comingle with street or roadway surface water. In a case when the sidewalk, bicycle lane, or trail is expected to generate runoff with similar contaminant profiles as the adjacent street or roadway, the City Engineer may determine that it is not appropriate to grant this exemption.

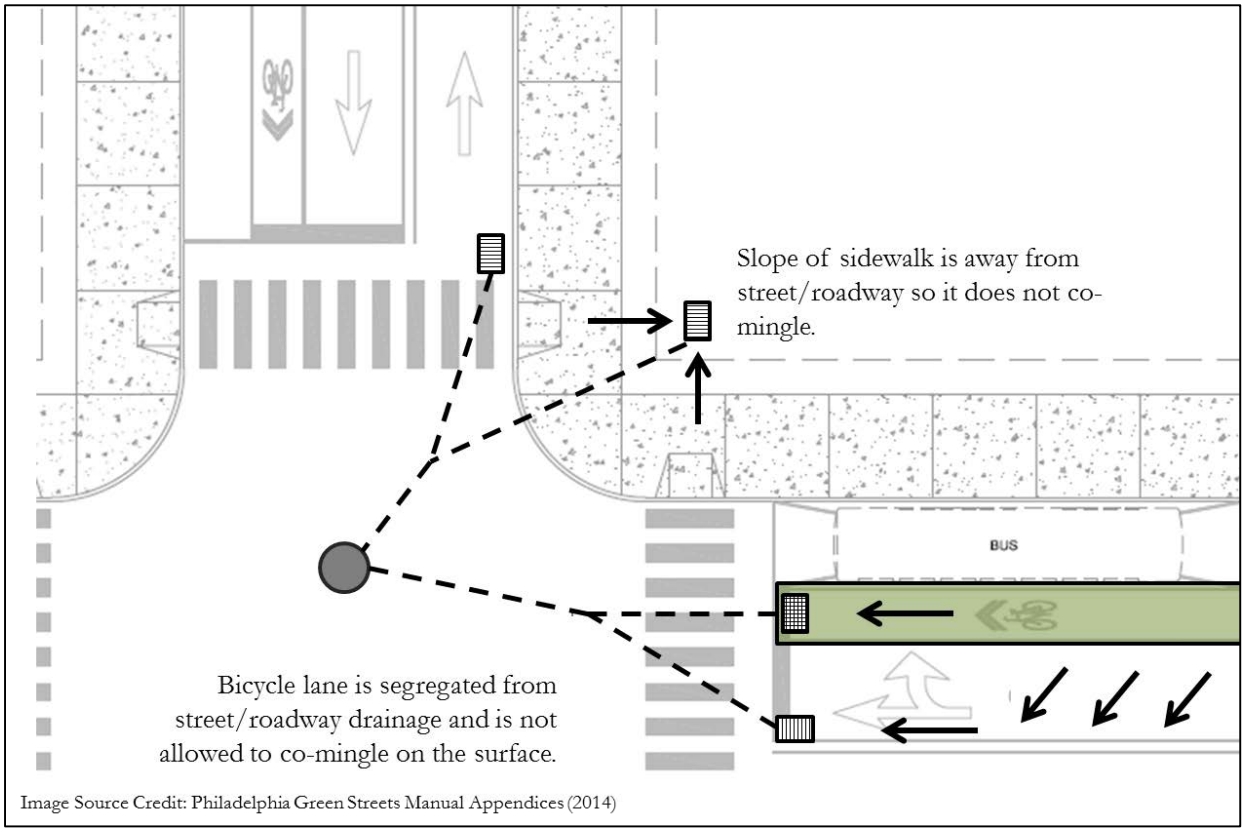


Figure J.1-2: Schematic showing hydraulic disconnection of sidewalks and bicycle lanes in a typical intersection.

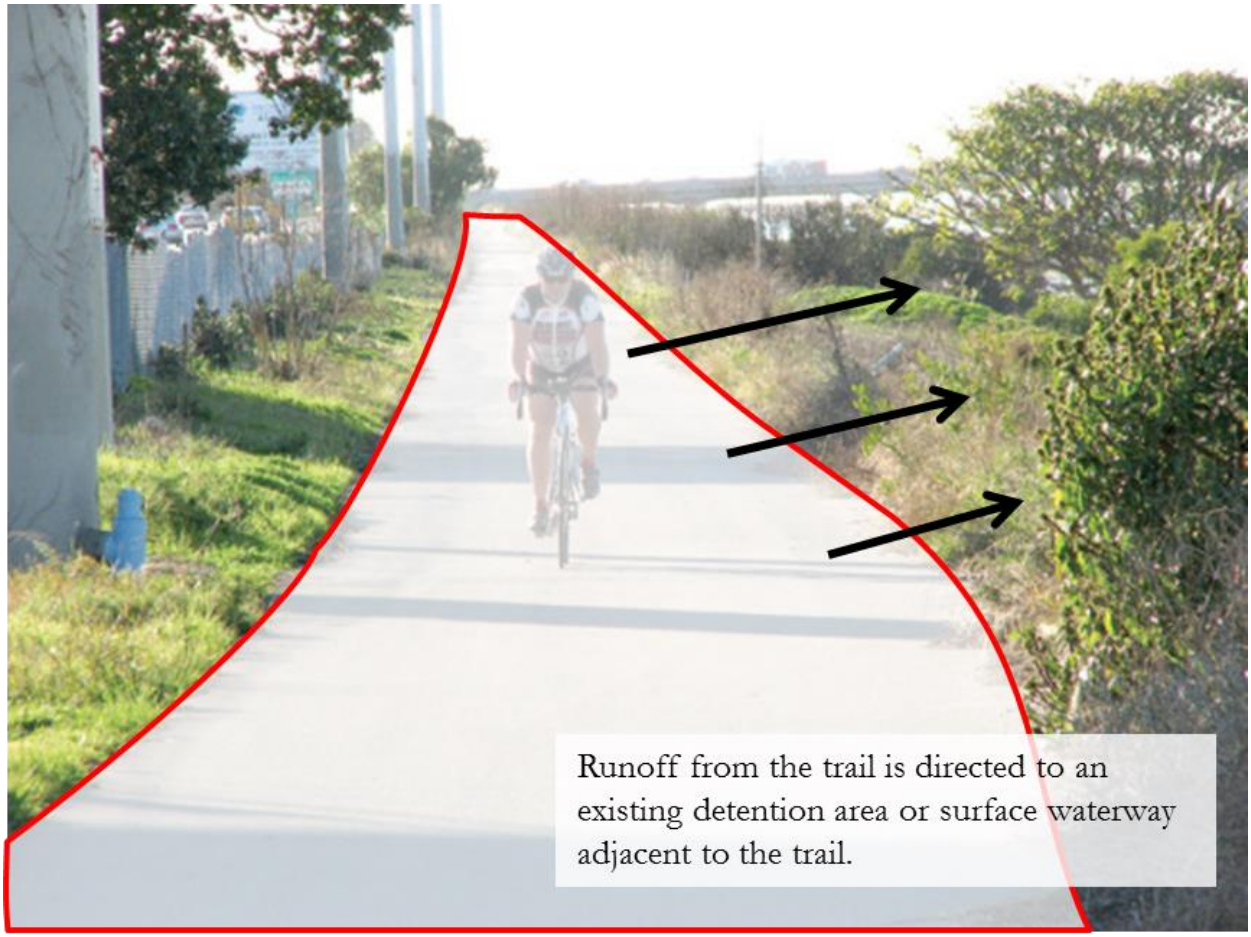


Image Source Credit: http://sdrc.ca.gov/photo_gallery.html

Figure J.1-3: Schematic of a trail where the runoff does not comingle with street or road runoff

Attachment 5

City of Santee Storm Water Intake Form

Storm Water Intake Form for All Permit Applications

This form must be completed in its entirety and accompany all permit applications. Please reference the City's BMP Design Manual for more detailed guidance in completing this form. Requirements for all Development Projects are also discussed within the City's Jurisdictional Runoff Management Plan, and Storm Water Ordinance (13.42). The purpose of this form is to establish the Storm water Quality Management Plan (SWQMP) requirements applicable to the project.

Step 1: Project Identification	
Applicant Name: SANDAG	
Project Address: San Diego River Trail (SDRT) – Carlton Oaks Golf Course Segment	
APN(s):	Project ID: Click here to enter text.
Step 2: Project Determination (Standard or Priority Development Project)	
Is the project part of another Priority Development Project (PDP)? ☐ Yes ☒ No If yes, a PDP SWQMP is required. **Go to Step 3.**	
The project is (select one):	☒ New Development ☐ Redevelopment[1]
The total proposed newly created or replaced impervious area is:	105,000 ft2
The total existing (pre-project) impervious area is:	0 ft2
The total area disturbed by the project is:	675,000 ft2
If the total area disturbed by the project is one acre (43,560 sq. ft.) or more OR the project is part of a larger common plan of development (e.g., a building permit within a previously approved subdivision) disturbing one acre or more, a Waste Discharger Identification (WDID) number must be obtained from the State Water Resources Control Board.	WDID: _____
Is the project in any of the following categories, (a) through (f)? [2]	
(a) New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. ☐Yes ☐No	
(b) Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land. ☐Yes ☐No	

[1] Redevelopment is defined as: The creation, addition, and or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure. Replacement of impervious surfaces includes any activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways, sidewalks, pedestrian ramps, or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

[2] Applicants should note that any development project that will create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) is considered a new development.

Step 2: (continued)

(c) New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses:

Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812).

(ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater.

(iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce.

(iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.

☐ Yes ☐ No

(d) New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands).

Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any other equivalent environmentally sensitive areas which have been identified by the Copermittees. See BMP Design Manual Section 1.4.2 for additional guidance.

☐ Yes ☐ No

(e) New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses:

(i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539.

(ii) (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.

☐ Yes ☐ No

(f) New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction.

Note: See BMP Design Manual Section 1.4.2 for additional guidance.

☐ Yes ☐ No

Does the project meet the definition of one or more of the Priority Development Project categories (a) through (f) listed above?

☐ Yes – the project is a Priority Development Project (PDP).

☐ No – the project is not a Priority Development Project (Standard Project).

Further guidance may be found in Chapter 1 and Table 1-2 of the BMP Design Manual.

Step 2: (continued)

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is: _____ ft2 (A)
The total proposed newly created or replaced impervious area is: _____ ft2 (B)
Percent impervious surface created or replaced (B/A)*100: _____%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐less than or equal to fifty percent (50%) – ***only newly created or replaced impervious areas are considered a PDP and subject to storm water requirements.***

OR

☐greater than fifty percent (50%) – ***the entire project site is considered a PDP and subject to storm water requirements.***

Step 3: Storm Water Quality Management Plan Requirements

Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions?

To answer this item, complete the Project Type Determination Checklist on Pages 2 and 3 of this form, and see PDP exemption information below. *For further guidance, see Section 1.4 of the BMP Design Manual in its entirety.*

☐Standard Project:	Standard Project requirements apply, including Standard Project SWQMP. **Complete Standard Project SWQMP**.
☐PDP:	Standard and PDP requirements apply, including PDP SWQMP. **Go to Step 5 and Prepare a PDP SWQMP**
☒PDP Exemption:	**Go to Step 4.**

Step 4: Exemption to PDP definitions

Is the project exempt from PDP definitions based on:

☒Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria:

(i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR

(ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR

(iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Guidance on Green Infrastructure;

If the project is exempt per the above condition, then SDP requirements apply, AND any additional requirements specific to the type of project. Note: City concurrence with any exemption is required. **Go to Step 7 and Prepare a SDP SWQMP**.

Step 4: (continued)

If the project is claiming exemption under another condition, provide discussion / justification that demonstrates that the project is NOT a development project (i.e.: interior remodel only) and provide backup documentation if applicable. *Reference Section 1.3 of the BMP Design Manual.* Note: City concurrence with any exemption is required.

This project is considered to meet PDP Exemptions since the proposed trail includes bicycle lanes that direct runoff towards landscaped areas and is completely disconnected from any roadways.

Go to Step 7 and Prepare SDP SWQMP.

Step 5: Hydromodificaiton Control (PDPs only)

Do hydromodification control requirements apply?

☐ Yes – Structural BMPs required for pollutant control (see Chapter 5), AND hydromodification control (see Chapter 6). **Go to Step 6.**

☐ No – Structural BMPs required for pollutant control. EXEMPT from hydromodification control (see Chapter 1.6)*. **Go to Step 7 and Prepare PDP SWQMP.**

* Justification for hydromodification exemption is required. Documentation must include drainage maps, photos, citations, and written explanation. This documentation will be included within the PDP SWQMP, Attachment 2.

Step 6: Critical Coarse Sediment (PDPs only)

Does protection of critical coarse sediment yield areas apply based on review of the WMAA Potential Critical Coarse Sediment Yield Area Map? See Section 6.2 of the BMP Design Manual for guidance.

☐ Yes – Management measures are required for the avoidance or protection of critical coarse sediment yield areas (see Chapter 6). **Go to Step 7 and Prepare PDP SWQMP.**

☐ No – Management measures are not required.* **Go to Step 7 and Prepare PDP SWQMP**

* If no management measures are required, provide brief discussion / justification demonstrating non-applicability.

Click here to enter text.

Step 7: Certification

Applicant Certification: I have read and understand that the City of Santee has adopted minimum requirements for managing urban runoff, including storm water, from construction and land development activities, as described in the BMP Design Manual. **I certify that this intake form has been completed to the best of my ability and accurately reflects the project being proposed. I also understand that non-compliance with the City's Storm Water Ordinance and/or Grading Ordinance may result in enforcement by the City, including fines, cease and desist orders, or other actions as determined by the City's Enforcement Response Plan.**

Signature of Applicant: _____ Date: _____

Printed Name: _____

Attachment 6

City of Santee Source Control BMP Checklist (Form I-4)

Source Control BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-4

Project Identification

Project Name: San Diego River Trail - Carlton Oaks Golf Course Segment Date: 11/03/2016

Project Address:

Permit Application Number:

Source Control BMPs

All development projects must implement source control BMPs SC-1 through SC-6 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement source control BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the source control BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification may be provided.

Source Control Requirement	Applied?		
SC-1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-1 not implemented:			
SC-2 Storm Drain Stenciling or Signage	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-2 not implemented:			
SC-3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-3 not implemented:			
SC-4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-4 not implemented:			

Form I-4 Page 2 of 2			
Source Control Requirement	**Applied?**		
SC-5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
Discussion / justification if SC-5 not implemented:			
SC-6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below)			
☐ Onsite storm drain inlets	☐ Yes	☐ No	☒ N/A
☐ Interior floor drains and elevator shaft sump pumps	☐ Yes	☐ No	☒ N/A
☐ Interior parking garages	☐ Yes	☐ No	☒ N/A
☐ Need for future indoor & structural pest control	☐ Yes	☐ No	☒ N/A
☐ Landscape/outdoor pesticide use	☒ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☒ N/A
☐ Food service	☐ Yes	☐ No	☒ N/A
☐ Refuse areas	☐ Yes	☐ No	☒ N/A
☐ Industrial processes	☐ Yes	☐ No	☒ N/A
☐ Outdoor storage of equipment or materials	☒ Yes	☐ No	☐ N/A
☐ Vehicle and equipment cleaning	☒ Yes	☐ No	☐ N/A
☐ Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☒ N/A
☐ Fuel dispensing areas	☐ Yes	☐ No	☒ N/A
☐ Loading docks	☐ Yes	☐ No	☒ N/A
☐ Fire sprinkler test water	☐ Yes	☐ No	☒ N/A
☐ Miscellaneous drain or wash water	☐ Yes	☐ No	☒ N/A
☐ Plazas, sidewalks, and parking lots	☐ Yes	☐ No	☒ N/A
Discussion / justification if SC-6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Attachment 7

City of Santee Site Design BMP Checklist (Form I-5)

Site Design BMP Checklist for All Development Projects (Standard Projects and PDPs)	Form I-5

Project Identification

Project Name: San Diego River Trail (SDRT) - Carlton Oaks Golf Course Segment

Permit Application Number:

Site Design BMPs

All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist.

Answer each category below pursuant to the following.

- "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required.
- "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided.
- "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification may be provided.

Site Design Requirement	Applied?		
SD-1 Maintain Natural Drainage Pathways and Hydrologic Features	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-1 not implemented:			
SD-2 Conserve Natural Areas, Soils, and Vegetation	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-2 not implemented:			
SD-3 Minimize Impervious Area	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-3 not implemented:			
SD-4 Minimize Soil Compaction	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-4 not implemented:			

Form I-5 Page 2 of 2			
Site Design Requirement	**Applied?**		
SD-5 Impervious Area Dispersion	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-5 not implemented:			
SD-6 Runoff Collection	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-6 not implemented:			
SD-7 Landscaping with Native or Drought Tolerant Species	☒ Yes	☐ No	☐ N/A
Discussion / justification if SD-7 not implemented:			
SD-8 Harvesting and Using Precipitation	☐ Yes	☒ No	☐ N/A
Discussion / justification if SD-8 not implemented: No feasible way to collect and hold runoff in a way that would be able to used on the project site. Collection would also disturb natural drainage pathways.			

HYDROLOGY STUDY

FOR

SAN DIEGO RIVER TRAIL
CARLTON OAKS GOLF COURSE SEGMENT
CITIES OF SAN DIEGO AND SANTEE, CA

Prepared for

San Diego Association of Governments (SANDAG)

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San Diego, CA 92101

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Updated 5/10/17

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PURPOSE:

The purpose of this hydrology study is to examine the existing drainage conditions and evaluate the impact of the San Diego River Trail Project along the southern property line of Carlton Oaks Country Club between West Hills Parkway and Carlton Hills Boulevard. This report will calculate the existing and proposed flow rates associated with the drainage areas that are affected by the proposed improvements and provide an assessment of the projects impact to the existing drainage patterns and facilities.

PROJECT DESCRIPTION:

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course.

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide pervious shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, retaining walls, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

PROPOSED PROJECT ALIGNMENT



Source: Google Earth

EXISTING DRAINAGE:

The existing drainage courses of the project area include the San Diego River that runs through the golf course and project area (nominal flows run south of the existing berm area), Forester Creek which converges with the San Diego River south of the existing berm, Sycamore Creek that runs through the Golf Course converging with the San Diego River and various locations of pipe outlets that collect runoff from nearby residential and commercial developments. Flow rates associated with the pipe outlets are provided by "City of Santee Citywide Drainage Study" prepared by BSI Consultants Inc., dated February 1990. See **Appendix C –** related excerpts from **the "City of Santee Citywide Drainage Study"** prepared by BSI Consultants Inc., for additional information.

Existing runoff from the berm and golf course is collected in various localized low points along the golf course, adjacent to the north side of the berm, and also is collected in reservoirs/water features within the golf course property. These areas allow for runoff to infiltrate into the existing landscaping or drain directly to the San Diego River, which combines with Sycamore Creek and continues to flow west underneath West Hills Parkway and Interstate 52

Near the eastern limits of the project, by Carlton Hills Boulevard and Mast Park, urban runoff from the north is collected by an existing curb inlet along the west side of Carlton Hills Boulevard and discharged into an existing earthen drainage channel via an existing 48" reinforced concrete pipe. Discharge travels south along said channel and joins the San Diego River. Continuing west along Mast Park West and prior to the golf course property, the existing trail has two low flow gravel drainage crossings at localized low

points that allows for water to surface drain across the path and continue into the San Diego River.

The project site is within the FEMA AE Zone of the 100 year floodway of the San Diego River. The AE Zone is subject to inundation by the 1% annual chance flood and has base flood elevations determined. A copy of the FEMA map is included in **Appendix B.**

PROPOSED DRAINAGE:

Existing drainage patterns of the project site will not be altered during construction or as a result of the construction of the proposed Class I bikeway. The proposed Class I bikeway is designed with the cross slopes directed towards the golf course property which allows for runoff to be collected within existing localized collection areas that infiltrate into landscaped areas or continue to drain into the San Diego River. Directing runoff in this direction also prevents further erosion of the existing berm along the south side of the proposed bikeway. Localized drainage basins have been defined along the golf course as depicted in **Appendix A – Hydrologic Conditions Exhibit**. These basins drain to natural low points along the golf course which infiltrate low flows and do not have a direct connection to the adjacent San Diego River nominal flow area. A summary of the existing flows to these basins and increase in flows based on the addition of an impervious 10' wide all weather surface of the Class I bikeway are as follows:

Basin	Basin Area (acres)	Existing Runoff Coefficient	Proposed Runoff Coefficient	Existing Q100 (cfs)	Proposed Q100 (cfs)	Flow Increase (cfs)
1	1.97	0.20	0.20	1.59	1.59	0.00
2	3.22	0.20	0.24	2.61	3.13	0.52
3	0.93	0.20	0.26	0.75	0.98	0.23
4	0.89	0.20	0.28	0.72	1.01	0.29
5	1.53	0.20	0.27	1.24	1.67	0.43
6	1.52	0.20	0.25	1.23	1.53	0.31
7	1.50	0.20	0.26	1.22	1.58	0.36
8	2.76	0.20	0.25	2.23	2.79	0.56
9	1.87	0.20	0.23	1.51	1.74	0.23
10	3.52	0.20	0.21	2.85	2.99	0.14
11	1.70	0.20	0.24	1.38	1.65	0.28
12	2.44	0.20	0.23	1.97	2.27	0.30
13	2.51	0.20	0.23	2.03	2.34	0.30
14	0.62	0.20	0.23	0.50	0.58	0.08
15	4.27	0.20	0.22	3.45	3.80	0.35
16	0.95	0.20	0.24	0.77	0.92	0.15
17	2.76	0.20	0.22	2.23	2.46	0.22

The total flow increase from the project totals 4.74 cfs. This is a negligible increase compared to the 100 year flow rate of 38,000 cfs for the San Diego River. The negligible increase in flow does not have any impacts in the project area or downstream as runoff from smaller storms would infiltrate into landscape areas and does not have a direct

connection to the adjacent San Diego River nominal flow area. As these localized basins are within the San Diego River Flood Plain fringe, in a significant flow, which would be higher than the berm, these localized basins would become a part of the San Diego River Flow, and as the project would be in an inundated area, there would be no peak flow increase .

For the portion of the project east of the golf course (Basin 16 and 17), the project proposes to replace 10' of DG pathway with 10' of impervious material. This increase in flow would be directed northerly of the path to the existing vegetated area. This increase in flow of 0.38 cfs is again considered negligible to the existing 38,000 cfs (FEMA flowrate) of the San Diego River.

See **Appendix A – Hydrologic Conditions Exhibit,** for further information.

HYDRAULICS:

This project proposes to improve three low flow drainage crossings as show in Appendix A in Basins A, B, and C.

Basin	Basin Area (acres)	Runoff Coefficient	Q50 (cfs)	Pipe Inflow (cfs)	Total Flow (cfs)
A	11.26	0.20	8.72	35	43.72
B	1.69	0.20	1.31	0	1.31
C	0.59	0.20	0.46	0	0.46
D	0.82	0.20	0.63	49	49.63

Proposed hydraulic improvements will include reconstruction of the low flow drainage crossings at localized low points to a concrete surface with rip-rap surrounding the locations to avoid undermining of the path and for erosion prevention. These locations are shown in Appendix A and are within Basins A, B, and C.

Flow within the earthen channel along Carlton Hills Boulevard (Basin D) will be conveyed underneath the proposed pathway by ~~a combination of small pipes~~ an open bottom culvert structure that ~~are~~ is designed to handle small storm events and still allow for larger storm events to surface flow across the path.

Additionally, a 14 foot wide crossing with a span of approximately 75 feet will be constructed across the Sycamore Creek. The span is still within the San Diego River Floodway and proposed to convey low flows only

A hydraulic analysis using the US Army Corps of Engineers' HEC-RAS model of the proposed project was performed and included in **Appendix D**. This analysis is performed to evaluate the base 100 year flood and the proposed project's impact on the base floodplain. The existing and proposed condition results of the 100 year flood analysis are included in the Appendix. The revised flood analysis is based on updated 100 year flow

rates ranging from 48,000 cfs to 49,000 cfs as recommended in the City of Santee's Municipal Code (Chapter 15.52). The existing conditions includes the existing berm/levee on which the trail is placed that was constructed per City of Santee permit plans as-built June 25, 1997. The proposed conditions include the proposed trail improvements including all grading (10,000 cubic yards of net fill), berm/levee improvements, and consideration of proposed retaining walls. A comparison of the results reveals that the proposed project will result in an increase in flood elevations varying from +0.01' to +0.05' in elevation within the project site. Based on this analysis the berm/levee is overtopped by peak flows in both the existing and proposed conditions at the same location at that portion of the berm/levee on the east end of the golf course. As the project is proposing to raise flood elevations, the project will need to comply with section 65.12 of the Code of Federal Regulations (CFR) for the National Flood Insurance Program which requires the jurisdiction (City of San Diego and City of Santee) to apply for a conditional approval of this action to FEMA for a Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR).

HYDROLOGY METHODOLOGY/DESIGN CRITERIA:

Storm water runoff for both the existing and proposed site conditions is calculated, analyzed and compared in order to ensure that the proposed conditions do not negatively affect the existing hydrologic regime. Runoff is calculated by utilizing methods outlined in the San Diego County Hydrology Manual.

Existing drainage conditions from the surrounding residential areas which flow southerly onto the golf course were determined by referencing the "City of Santee Citywide Drainage Study" prepared by BSI Consultants Inc., dated February 1990.

CALCULATIONS:

Calculations have been performed per Rational Method guidelines set forth in Section 3 of the San Diego County Hydrology Manual.

- Runoff Coefficients were determined by using Table 3-1 of San Diego County Hydrology Manual.
- Times of Concentration values were determined by using Figure 3-4 of San Diego Hydrology Manual.
- Rainfall Intensity values were determined from Figure 3-1 of San Diego Hydrology Manual, "Intensity-Duration Design Chart".
- For hydrology calculations refer to the following page. For attachments and references to the calculations see **Appendix C – Hydrology References**

CONCLUSION:

The existing drainage patterns of the project site will not be altered as a result of the Class I bikeway construction. The Class I bikeway will direct the discharge to the

adjacent golf course and low flow discharge will infiltrate within the golf course vegetation. No significant increase in runoff is expected during peak storms as the project area will be inundated as it is with the San Diego River Floodway with a 100-year flowrate of 38,000 cfs (FEMA flowrate). The project will require an application to FEMA with a Conditional Letter of Map Revision (CLOMR) for approval of the small increase to flood elevations.

ENGINEER OF WORK:

This report was prepared under the supervision of Samuel Waisbord, PE, Project Manager for Nasland Engineering.

Date: 06-05-2017

Samuel Waisbord • RCE 78071 • Expires 09-30-17

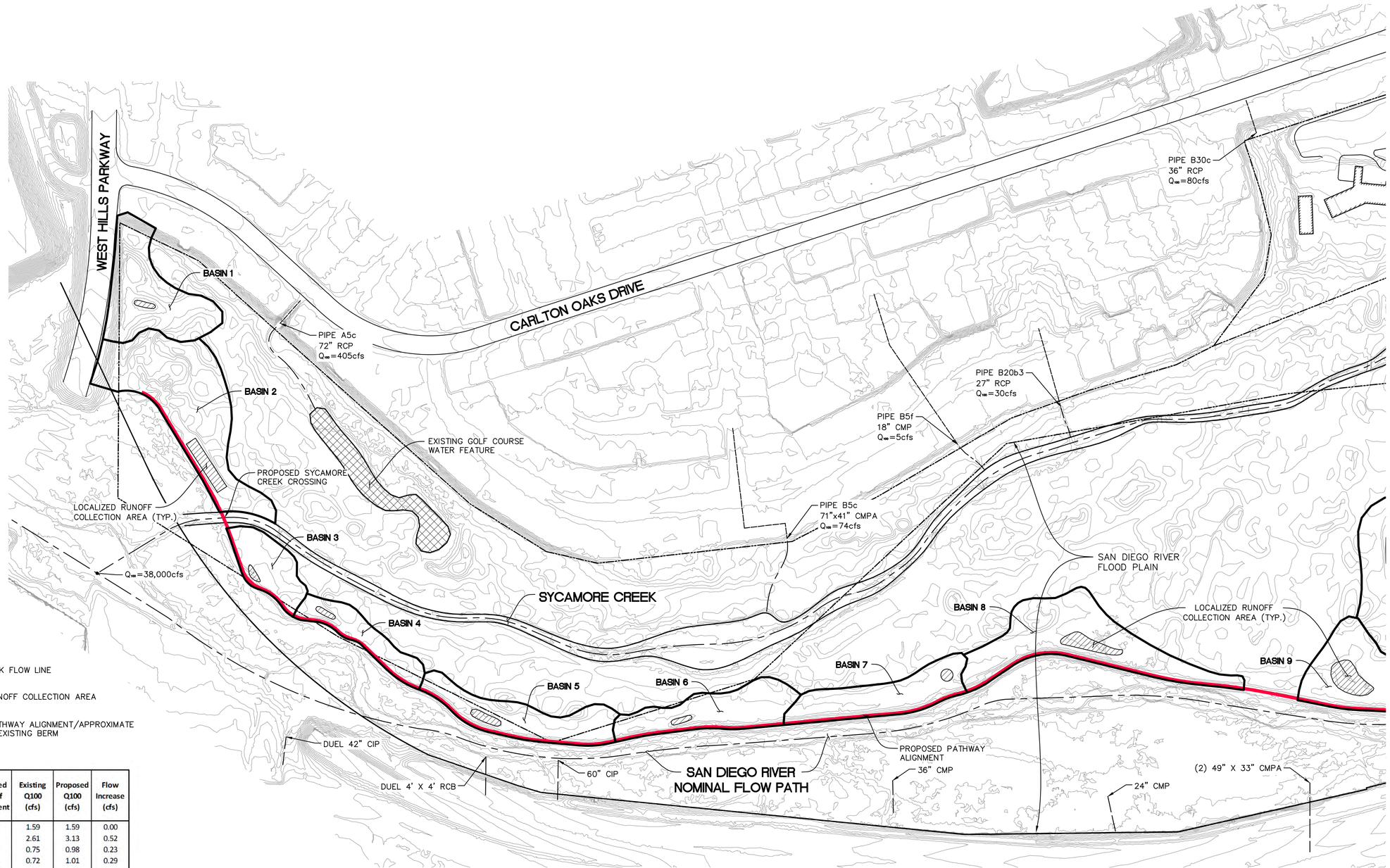


APPENDICES

APPENDIX A

HYDROLOGIC CONDITIONS MAP

FOR REDUCED PLANS ORIGINAL
SCALE IS IN INCHES
0 1 2 3



LEGEND:

- EXISTING CREEK FLOW LINE
- LOCALIZED RUNOFF COLLECTION AREA
- PROPOSED PATHWAY ALIGNMENT/APPROXIMATE LOCATION OF EXISTING BERM

Basin	Basin Area (acres)	Existing Runoff Coefficient	Proposed Runoff Coefficient	Existing Q100 (cfs)	Proposed Q100 (cfs)	Flow Increase (cfs)
1	1.97	0.20	0.20	1.59	1.59	0.00
2	3.22	0.20	0.24	2.61	3.13	0.52
3	0.93	0.20	0.26	0.75	0.98	0.23
4	0.89	0.20	0.28	0.72	1.01	0.29
5	1.53	0.20	0.27	1.24	1.67	0.43
6	1.52	0.20	0.25	1.23	1.53	0.31
7	1.50	0.20	0.26	1.22	1.58	0.36
8	2.76	0.20	0.25	2.23	2.79	0.56
9	1.87	0.20	0.23	1.51	1.74	0.23

175 0 175 350 525
SCALE 1" = 175'

N

SANDAG
San Diego's Regional Planning Agency

HYDROLOGIC CONDITIONS EXHIBIT

REGISTERED PROFESSIONAL ENGINEER
SAMUEL WAISBORD
No. 78071
CIVIL
STATE OF CALIFORNIA

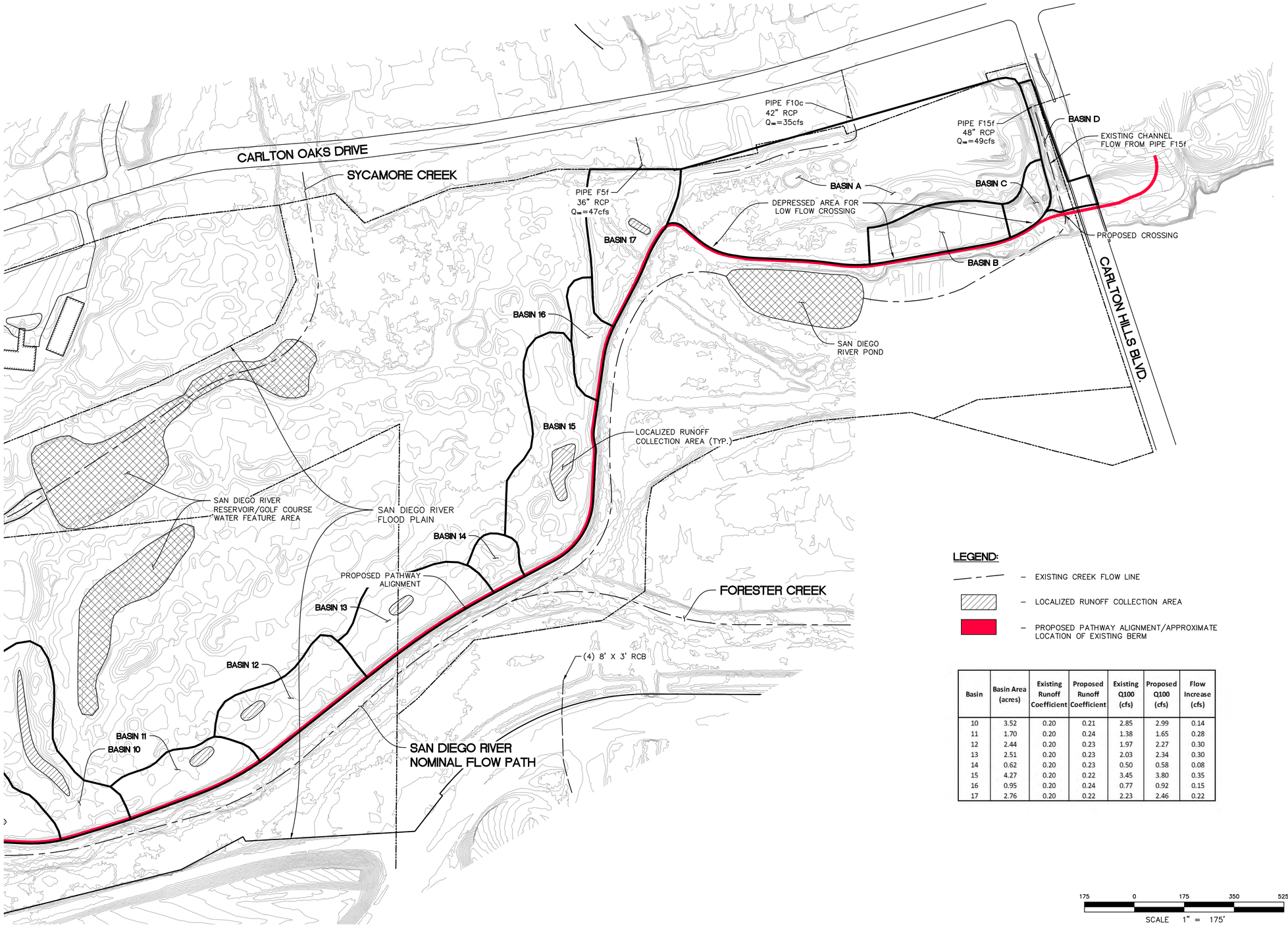
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Nasland
Civil Engineering
Surveying
Land Planning

T (858) 292-7770
4740 Ruffner Street
San Diego, CA 92111
nasland.com

DESIGNED BY SCOTT HEBERER	DATE 12/06/2016
DRAWN BY SCOTT HEBERER	12/06/2016
CHECKED BY SAMUEL WAISBORD	12/06/2016

FOR REDUCED PLANS ORIGINAL
SCALE IS IN INCHES
0 1 2 3



LEGEND:

- EXISTING CREEK FLOW LINE
- LOCALIZED RUNOFF COLLECTION AREA
- PROPOSED PATHWAY ALIGNMENT/APPROXIMATE LOCATION OF EXISTING BERM

Basin	Basin Area (acres)	Existing Runoff Coefficient	Proposed Runoff Coefficient	Existing Q100 (cfs)	Proposed Q100 (cfs)	Flow Increase (cfs)
10	3.52	0.20	0.21	2.85	2.99	0.14
11	1.70	0.20	0.24	1.38	1.65	0.28
12	2.44	0.20	0.23	1.97	2.27	0.30
13	2.51	0.20	0.23	2.03	2.34	0.30
14	0.62	0.20	0.23	0.50	0.58	0.08
15	4.27	0.20	0.22	3.45	3.80	0.35
16	0.95	0.20	0.24	0.77	0.92	0.15
17	2.76	0.20	0.22	2.23	2.46	0.22

175 0 175 350 525
SCALE 1" = 175'

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SANDAG
San Diego's Regional Planning Agency

HYDROLOGIC CONDITIONS EXHIBIT

REGISTERED PROFESSIONAL ENGINEER
SAMUEL WAISBORD
No. 78071
CIVIL
STATE OF CALIFORNIA

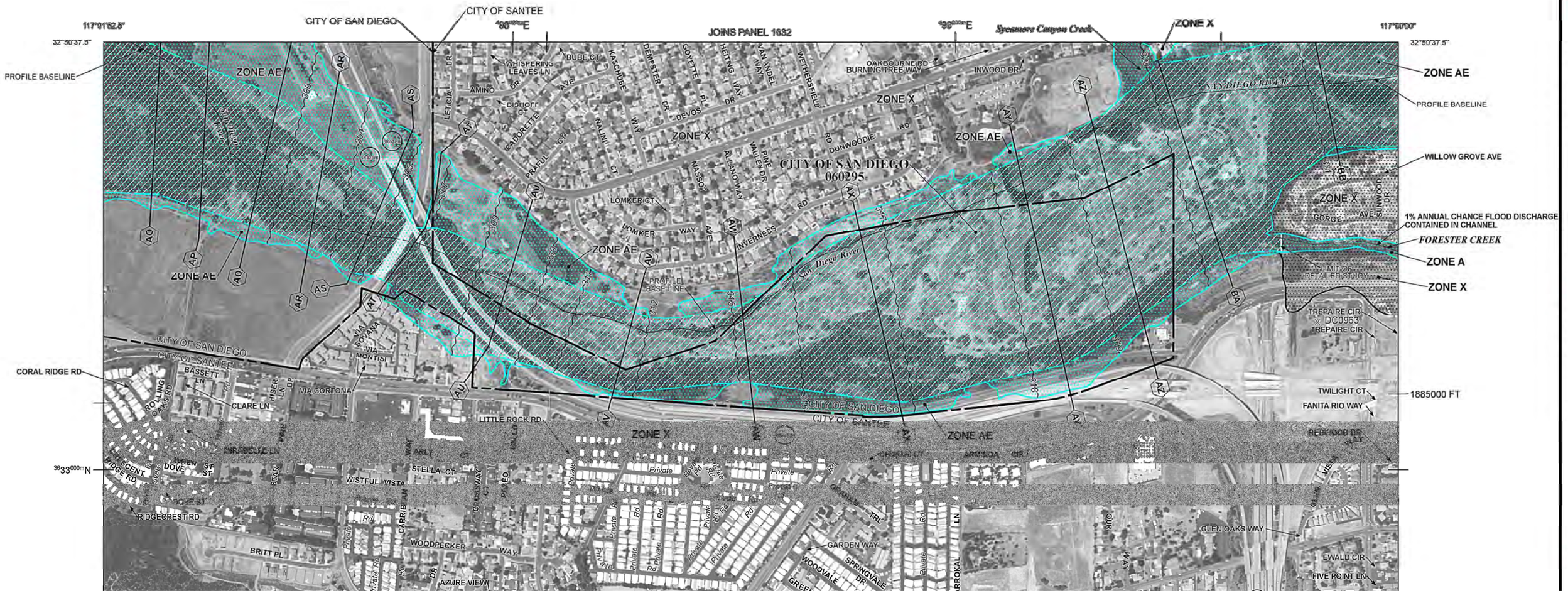
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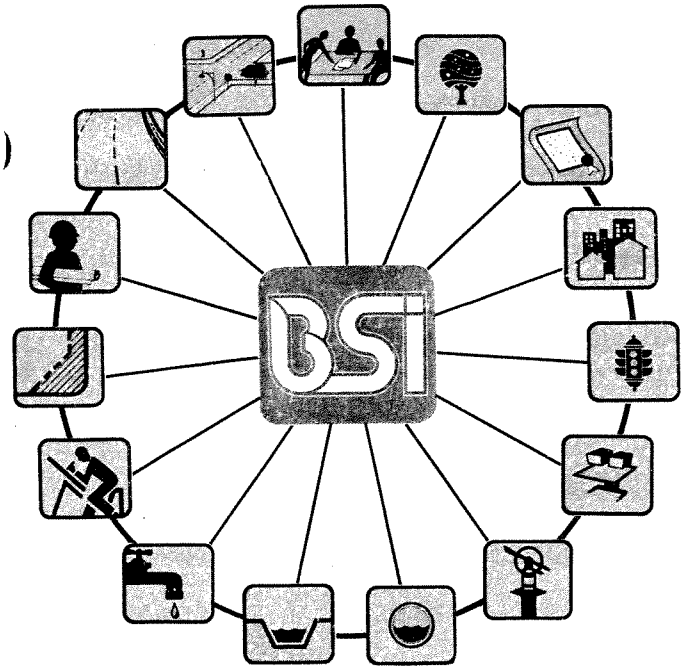
APPENDIX B

FEMA FLOODWAY MAP


117°01'52.5"
32°50'37.5"
CITY OF SAN DIEGO
CITY OF SANTEE
JOINS PANEL 1632
Sycamore Canyon Creek
ZONE X
117°00'00"
32°50'37.5"
PROFILE BASELINE
ZONE AE
SAN DIEGO RIVER
WILLOW GROVE AVE
1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CHANNEL
FORESTER CREEK
ZONE A
LIMIT OF DETAILED STUDY
CITY OF SAN DIEGO 060295
WHISPERING LEAVES LN
DUBE CT
AMINO
DIDIOTT CT
CABORETTE
PRAFUL CT
NALINI CT
LETICIA DR
KASCHUBE
DEMISTER DR
DEVOS PL
GOYETTE DR
HETTING WAY
VAN ANDEL WAY
VETHERSFIELD
OAKBOURNE RD
BURNING TREE WAY
INWOOD DR
DUNWOODIE RD
VALLEY DR
PINE DR
ALLANO WAY
MASSOS
LOMKER CT
LOMKER WAY
INVERNESS AVE
RD
GORGE
SUNWOOD DR
TREPAIRE CIR
DC0963
TREPAIRE CIR
TWILIGHT CT
FANITA RIO WAY
REDWOOD DR
ARANDA CIR
GLEN OAKS WAY
EWALD CIR
FIVE POINT LN
CORAL RIDGE RD
ROLLING OAKS RD
BASSETT LN
CLARE LN
HISER LN
VIA CORTONA
VIA SOYANA
VIA MONTISI
LITTLE ROCK RD
MIRABELLE LN
DOVE ST
STELLA CT
WISTFUL VISTA
RIDGECREST RD
BRITT PL
CARRIBEAN
WOODPECKER WAY
AZURE VIEW DR
GARDEN WAY
WOODVALE DR
SPRINGVALE
CARROKAL LN
Private Rd
3633000mN
1885000 FT
AO
AP
AR
AS
AT
AU
AV
AW
AX
AY
AZ
BA
BB
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APPENDIX C

CITY OF SANTEE MASTER HYDROLOGY PLAN



PROJECT REPORT

City of Santee
Citywide Drainage Study

Presented to:

City of Santee

February 1990

BSI CONSULTANTS, INC.

BSI CONSULTANTS, INC.

February 2, 1990

Mr. Al H. Krier, P.E.
Director of Public Works
10765 Woodside Avenue
Santee, CA 92071-3198

Subject: **City-Wide Drainage Study - Project Report**

Dear Mr. Krier:

The attached project report for the City-Wide Drainage Study is final and includes all appropriate revisions suggested by the City staff.

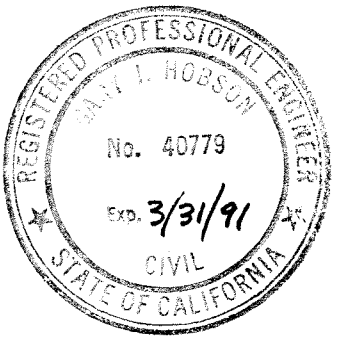
We appreciate being of assistance to the City on this important project. If you have further questions, please let us know.

Sincerely,

BSI CONSULTANTS, INC.

Neal D Brown

Neal D. Brown
Project Engineer/Manager



Gary J. Hobson

Gary J. Hobson, P.E.
Principal-in-Charge

NDB/lew
reports/santee/santedr.ndb

cc: Jeff Cooper

Copy No. 11

16880 West Bernardo Drive • San Diego, California 92127 • (619) 451-6100 • FAX (619) 451-1694

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APPENDIX II

SUMMARY OF EXISTING
CONDITONS AND
RECOMMENDED IMPROVEMENT

CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST (/LF)	COST ($)
*	A5a	66 " CIP	0.0375	747	0.013	650	343					
*	A5b	66 " CIP	0.02	931	0.013	475	371					
*	A5c	72 " RCP	0.014	488	0.013	501	405	M				
	A5d	24 " RCP	0.02	153	0.013	32	35	C				
	A5e	24 " CMP	0.0844	108	0.024	36	35	S				
	A5f	18 " CMP	0.0497	155	0.024	13	18	C,S				
	A20a	24 " CMP	0.11	78	0.024	41	17	S				
	A20b	24 " RCP	0.02	82	0.013	32	17					
*	B5a	30 " CMP	0.0356	30	0.024	42	42	S				
*	B5b	36 " CMP	0.0188	595	0.024	50	47	S				
*	B5c	71 " x 47 " CMPA	0.005	457	0.024	81	74	S				
	B5d1	18 " CMP	0.0456	174	0.024	12	5	S				
	B5d2	18 " CMP	0.0483	132	0.024	13	5	S				
	B5e	18 " CMP	0.0065	126	0.024	5	5	S				
	B5f	18 " CMP	0.0232	301	0.024	9	5	S				
*	B20a1	18 " RCP	0.0652	200	0.013	27	15					
*	B20a2	18 " RCP	0.0556	236	0.013	25	20					
*	B20b1	27 " RCP	0.0589	48	0.013	75	22					
*	B20b2	27 " RCP	0.0312	136	0.013	55	25					
*	B20b3	27 " RCP	0.01	28	0.013	31	30					
	B30a	42 " CMP	0.03	284	0.024	94	57	S				
*	B30b	36 " RCP	0.02	180	0.013	94	80					
*	B30c	36 " RCP	0.05	120	0.013	149	80					
*	C5a	27 " RCP	0.1079		0.013	102	62					
	C5b	18 " RCP	0.018		0.013	14	5					
*	+C5c	18 " CMP	0.025	[100]	0.024	9	24	C,S	24		130	13000
*	C5d	18 " RCP	0.0638		0.013	27	24					
	C10a	21 " x 13 " CMPA	0.01		0.024	5	15	C,S				
	C15a1	27 " ACP	0.02	102	0.013	44	40					
	C15a2	27 " CMP	0.062	37	0.024	42	55	C,S				
	C15a3	27 " RCP	0.0672	201	0.013	80	55					
	C15b	30 " RCP	0.062	37	0.013	102	70					
	C15c	33 " RCP	0.032	470	0.013	95	70					
*	C15d1	36 " RCP	0.032	44	0.013	119	85					
*	C15d2	36 " RCP	0.0188	128	0.013	91	85					
	C20a1	27 " ACP	0.031	103	0.013	55	44					
	C20a2	27 " ACP	0.03	166	0.013	54	54					
	C20a3	27 " ACP	0.056	210	0.013	73	65					
	C20a4	27 " ACP	0.05	180	0.013	69	84	C				
	C20b	30 " ACP	0.031	175	0.013	72	84	C				
	C20c	18 " ACP	0.03	130	0.013	18	10					
	C25a1	21 " ACP	0.025	123	0.013	25	36	C				
	C25a2	21 " ACP	0.03	35	0.013	27	43	C				
	C25a3	21 " ACP	0.04	106	0.013	32	43	C				
	C25a4	21 " ACP	0.25	57	0.013	79	43					
	C25b	24 " ACP	0.03	108	0.013	39	43	C				
	C25c	27 " ACP	0.02	262	0.013	44	50	C				
	C30a1	33 " RCP	0.07	93	0.013	140	68					
	C30a2	33 " RCP	0.035	285	0.013	99	74					

* = MASTER DRAINAGE FACILITY + = DEFICIENT MASTER DRAINAGE FACILITY [ ] = ESTIMATED VALUE

DEFICIENCIES: C = CAPACITY E = EROSION M = MAINTENANCE S = SERVICE LIFE V = VELOCITY ? = NOT ENOUGH DATA

CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
	C30a3	33 " RCP	0.03	167	0.013	92	79					
	C35a1	43 " x 27 " CMPA	0.26	6	0.024	155	37	S				
	C35a2	21 " RCP	0.0263	39	0.013	26	44	C				
	C35a3	21 " ACP	0.0322	343	0.013	28	44	C				
	C35b1	36 " ACP	0.0116	48	0.013	72	56					
	C35b2	36 " RCP	0.0053	144	0.013	49	56	C				
	C35c	(2) 81" x 59" CMPA	0.0558	269	0.024	1150	539	S				
	C35d	18 " RCP	0.1436	30	0.013	40	10					
*	+D5a	18 " RCP	0.04	[450]	0.013	21	96	C	36		175	78750
*	D5b	36 " RCP	0.05		0.013	149	104					
*	D5c	[b=4' h=3' s=2:1]	[0.05]	950	0.03	477	104	M,E,?				
*	D5d	42 " CMP	0.046	236	0.024	117	114	S				
*	D5e	(2) 4' x 2' RCB	0.03		0.013	242	135					
	D5f	18 " CMP	0.01	48	0.024	6	10	C,S				
	D5g	24 " CMP	0.01	94	0.024	12	10	S				
	D20a	18 " CMP	0.024	41	0.024	9	30	C,S				
	D20b	24 " RCP	0.065	97	0.013	58	30					
*	D20c	(2) 29" X 18" CMPA	0.03		0.024	36	30	S				
	D24a	18 " CMP	0.4		0.024	36	11	S				
	D24b	22 " x 13 " CMPA	0.01		0.024	5	11	C,S				
	D25a	21 " RCP	0.072		0.013	43	28					
	D25b	30 " RCP	0.028		0.013	69	28					
	D25c	30 " RCP	0.0232		0.013	62	38					
	D25d	30 " RCP	0.064	340	0.013	104	38					
*	D25e	42 " RCP	0.041	176	0.013	204	43					
*	D25f	36 " CMP	0.042		0.024	74	43	S				
*	D25g	[b=20' h=10' s=2:1]	0.12	420	0.03	23115	49	E,V,?				
*	D25h	36 " RCP	0.24	64	0.013	327	56	?				
	D25i	21 " RCP	0.02	104	0.013	22	5					
	D25j	18 " CMP	0.08	89	0.024	16	7	S				
	D35a	24 " RCP	0.05	100	0.013	51	53	C				
	D35b	30 " CMP	0.036	42	0.024	42	53	C,S				
	D35c	36 " RCP	0.016		0.013	84	62					
	D40a	b=4' h=2.5' s=1.5:1	0.03		0.015	433	140					
	D40b1	42 " CMP	0.032	136	0.024	97	146	C,S				
	D40b2	42 " RCP	0.042	126	0.013	206	146					
	D40c1	42 " CMP	0.036	94	0.024	103	146	C,S				
	D40c2	42 " RCP	0.016	142	0.013	127	146	C				
	D40c3	42 " CMP	0.036	94	0.024	103	154	C,S				
	D40d	42 " RCP	0.031	112	0.013	177	164					
	D45a1	18 " RCP	0.01	42	0.013	11	10					
	D45a2	18 " RCP	0.018	115	0.013	14	10					
	D45a3	18 " RCP	0.032	44	0.013	19	10					
	D45a4	18 " RCP	0.036	106	0.013	20	10					
	D50a1	18 " CMP	0.438	93	0.024	38	21	S				
	D50a2	18 " CMP	0.0833	693	0.024	16	21	C,S				
	D50b	30 " RCP	0.023	210	0.013	62	42					
	D55a	24 " ACP	0.0456		0.013	48	41					
	D55b	27 " ACP	0.015		0.013	38	41	C				

* = MASTER DRAINAGE FACILITY + = DEFICIENT MASTER DRAINAGE FACILITY [ ] = ESTIMATED VALUE

DEFICIENCIES: C = CAPACITY E = EROSION M = MAINTENANCE S = SERVICE LIFE V = VELOCITY ? = NOT ENOUGH DATA

CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
	D55c	30 " RCP	0.015		0.013	50	45					
*	D55d	36 " RCP	0.015		0.013	82	65					
	D60a	42 " RCP	0.0262		0.013	163	177	C,M				
	D60b	18 " RCP	0.0267		0.013	17	10					
	D60c	42 " RCP	0.075		0.013	275	187					
	D60d	18 " CMP	0.035		0.024	11	10	S				
*	D60e	48 " RCP	0.051		0.013	324	214					
	D65a	(5) 42" X 54" CMPA	N/A		0.024			S,?				
	D65b	OPEN	N/A		0.03			?				
*	D65c	[b=10 h=3 s=1.5:1]	[0.0096]	[550]	0.015	690	279	?				
*	D65d1	(2) 36 " CMP	[0.02]	94	0.024	102	100	S,?				
*	D65d2	(3) 30 " CMP	[0.02]	94	0.024	94	90	S,?				
*	D65e	36 " X 48 " CMPA	[0.02]	94	0.024	93	90	S,?				
*	D65f	[b=10' h=3' s=2:1]	[0.02]	[500]	0.03	542	300	?				
*	+D65g	[b=5' h=3' s=3:1]	[0.0096]	[6000]	0.03	296	610	C,?	b=10' h=5' s=1.5:1		150	900000
*	+D65h	(3) 58" X 36" CMPA	[0.0096]	[50]	0.024	194	297	C,S,?	MINOR			
*	+E5a1	24 " RCP	0.016	42	0.013	29	30	C	MINOR			
*	E5a2	30 " ACP	0.022	185	0.013	61	30					
*	E5b	30 " RCP	0.026	575	0.013	66	40					
	E5c	18 " RCP	0.0154	51	0.013	13	16	C				
*	+E5d	30 " RCP	0.02	569	0.013	58	60	C	MINOR			
*	E5e	30 " RCP	0.03	504	0.013	71	67					
	E5f	18 " RCP	N/A		0.013		7	?				
*	+E5g	(2) 72 " CMP	0.002	[730]	0.024	205	610	C,S	12X6 RCB		1085	792050
	E20a	21 " ACP	0.0222	319	0.013	24	15					
	E20b	24 " RCP	0.05		0.013	51	42					
	E20c	18 " ACP	0.02	43	0.013	15	12					
	E30a1	18 " CMP	0.01	50	0.024	6	7	C,S				
	E30a2	b=1' h=1' s=1.5:1	0.1076	206	0.015	54	7					
	E30b	18 " CMP	0.04	252	0.024	11	7	S				
*	+E30c1	36 " CMP	0.02	86	0.024	51	77	C,S	36		175	15050
*	+E30c2	36 " CMP	0.016	18	0.024	46	84	C,S	36		175	3150
*	E30d	42 " RCP	0.02		0.013	142	118					
*	+E30e	48 " RCP	0.0055	[600]	0.013	106	124	C	MINOR			
	E30f	18 " RCP	0.05		0.013	23	22					
	E30g	18 " CMP	0.048	37	0.024	12	12	S				
	E30h	24 " CMP	0.1	95	0.024	39	12	S				
	E30i	18 " CMP	0.08	100	0.024	16	6	S				
	F5a	18 " RCP	0.0054		0.013	8	5					
	F5b	18 " RCP	0.0064	135	0.013	8	5					
*	F5c	18 " RCP	0.01	41	0.013	11	21					
*	F5d	42 " CMP	0.01		0.024	54	37	S				
*	F5e	36 " RCP	0.0322	99	0.013	120	47					
*	F5f	36 " RCP	0.005	84	0.013	47	47					
	F10a	18 " RCP	0.03		0.013	18	15					
	F10b	24 " RCP	0.04		0.013	45	24					
*	F10c	42 " RCP	0.015		0.013	123	35					
	F15a	24 " CMP	0.02	38	0.024	17	19	C,S				
	F15b	24 " CMP	0.062	100	0.024	31	19	S				

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CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
	F15c	24 " CMP	0.004	90	0.024	8	33	C,S				
	F15d	OPEN	[0.024]	1050	0.03		49	?				
*	+F15e	36 " CMP	0.015	102	0.024	44	49	C,S		MINOR		
*	F15f	48 " CMP	0.04	123	0.024	156	49	S				
*	F15g	48 " CMP	0.01	303	0.024	78	49	S				
*	F15h	48 " RCP	[0.01]		0.013	144	49	?				
	F15i	48 " CMP	0.008	186	0.024	70	12	S				
	F25a	18 " CMP	0.0104	150	0.024	6	12	C,S				
	F25b	30 " CMP	0.007	316	0.024	19	18	S				
	G10a1	60 " CIP	0.0236	199	0.013	400	359	M				
	G10a2	60 " CIP	0.03	853	0.013	451	379					
	G10a3	60 " RCP	0.025		0.013	412	379					
	G10b	21 " ACP	0.108	180	0.013	52	10					
	G10c	18 " ACP	0.047	102	0.013	23	10					
	G10d	30 " RCP	0.014	55	0.013	49	10					
	G10e1	18 " ACP	0.5	58	0.013	74	9					
	G10e2	18 " ACP	0.0398	95	0.013	21	9					
	G10e3	18 " ACP	0.013	41	0.013	12	9					
	G10e4	21 " ACP	0.014	130	0.013	19	9					
	G10f1	18 " RCP	0.36	32	0.013	63	12					
	G10f2	18 " RCP	0.32	80	0.013	59	12					
	G10f3	21 " RCP	0.03	96	0.013	27	12					
	G10f4	24 " RCP	0.054		0.013	53	12					
	G10f5	24 " RCP	0.0292		0.013	39	12					
*	G10g1	b=3' h=3.5' s=1.5:1	0.0348	854	0.015	804	426					
*	G10g2	66 " RCP	0.02	77	0.013	475	426					
	G10h1	21 " ACP	0.01	40	0.013	16	12					
	G10h2	21 " ACP	0.034	140	0.013	29	26					
	G11a1	18 " CMP	0.02	116	0.024	8	23	C,S				
	G11a2	18 " CMP	0.666	22	0.024	46	23	S				
*	G15a	b=8' h=3' s=1.5:1	0.034	1280	0.015	1085	561	M				
	G20a	18 " RCP	0.008		0.013	9	60	C				
*	G20b	36 " RCP	0.0384	388	0.013	131	90					
*	+G20c1	42 " CMP	0.014	116	0.024	64	90	C,S		MINOR		
*	G20c2	42 " CMP	0.04	337	0.024	109	100	S				
*	G20d1	36 " RCP	0.04	340	0.013	133	90					
*	G20d2	36 " RCP	0.0184	66	0.013	90	90					
*	G20e	60 " RCP	0.005	145	0.013	184	110					
	G21a	18 " CMP	0.667	3	0.024	46	10	S				
	G21b	18 " RCP	0.04	262	0.013	21	10					
	G21c	18 " RCP	0.01	8	0.013	11	10					
	G21d	18 " RCP	0.02	20	0.013	15	10					
*	+G25a	(3) 48 " CMP	0.017	132	0.024	304	561	C,M,S	8X4 RCB		435	57420
	G25b	18 " RCP	0.028	294	0.013	18	15					
	G25c	24 " RCP	0.072	162	0.013	61	20					
	G25d	18 " CMP	0.08	122	0.024	16	6	S				
*	G25e	[b=20'h=3's=1:1]	0.017		0.03	803	625	E,M,V				
*	G30a	(2) 60 " RCP	0.04	94	0.013	1041	625					
*	G30b	(2) 60 " RCP	0.05	194	0.013	1164	635					

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
*	G30c	(2) 8'x 6' RCB	0.006	1136	0.013	1218	711					
	G30d	18 " ACP	0.005	171	0.013	7						
	G30e	10 " ACP	0.0733	15	0.013	6						
	G30f	10 " ACP	0.0465	20	0.013	5						
	G30g	12 " ACP	0.03	20	0.013	6						
	G31a	18 " ACP	0.005	304	0.013	7						
	G31b	24 " ACP	0.01	60	0.013	23						
	G31c	30 " ACP	0.005	801	0.013	29						
	G31d	36 " ACP	0.005	339	0.013	47						
	G31e	18 " ACP	0.01	29	0.013	11						
	G31f	18 " ACP	0.005	30	0.013	7						
	G31g	18 " ACP	0.005	220	0.013	7						
	G31h	12 " ACP	0.01	30	0.013	4						
	G31i	12 " ACP	0.015	95	0.013	4						
	G31j	12 " ACP	0.0148	170	0.013	4						
	G31k	12 " ACP	0.0202	110	0.013	5						
	G31l	12 " ACP	0.0623	60	0.013	9						
	G31m	12 " ACP	0.146	15	0.013	14						
	G32a	18 " ACP	0.005	99	0.013	7						
	G32b	18 " ACP	0.006	189	0.013	8						
	G33a	12 " ACP	0.01	29	0.013	4						
	G33b	18 " ACP	0.0094	105	0.013	10						
	G33c	18 " ACP	0.005	332	0.013	7						
	G34a	12 " ACP	0.0145	154	0.013	4						
	G34b	24 " ACP	0.005	385	0.013	16						
	G34c	42 " ACP	0.0062	122	0.013	79						
	G34d	12 " ACP	0.229	22	0.013	17						
	H5a1	18 " RCP	0.078	176	0.013	29	50	C				
	H5a2	18 " RCP	0.012	116	0.013	12	50	C				
*	+H5a3	30 " CMP	0.02	37	0.024	31	67	C,S	36		175	6451
*	+H5a4	30 " CMP	0.04	44	0.024	44	67	C,S	36		175	7700
*	+H5a5	30 " CMP	0.06	26	0.024	54	67	C,S	36		175	4550
*	H5a6	[b=32' h=5' s=2:1]	[0.09]	620	0.03	7683	115	E,M,?				
	H5b1	18 " CMP	0.1184	98	0.024	20	10	S				
	H5b2	18 " CMP	0.125	144	0.024	20	10	S				
	H5b3	18 " CMP	0.13	116	0.024	21	10	S				
*	H5c1	36 " RCP	0.06	154	0.013	163	135					
*	+H5c2	42 " RCP	0.018	160	0.013	135	155	C		MINOR		
*	+H5d1	42 " RCP	0.005	110	0.013	71	155	C	5X4 RCB		315	34650
*	+H5d2	58 " X 36 " CMPA	0.005	[50]	0.024	47	173	C,S	5X4 RCB		315	15750
*	+H5d3	65 " X 40 " CMPA	0.006	85	0.024	68	173	C,S	5X4 RCB		315	26744
*	H5e	6'x 5' RCB	0.003	150	0.013	231	218					
	H5f	12 " ACP	0.01	122	0.013	4						
	H5g	12 " ACP	0.01	73	0.013	4						
	H5h	18 " ACP	0.005	403	0.013	7						
	H5i	12 " ACP	0.01	29	0.013	4						
	H5j	18 " ACP	0.0055	104	0.013	8						
	H5k	12 " ACP	0.005	23	0.013	3						
	H5l	12 " ACP	0.01	20	0.013	4						

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	H5m	18 " ACP	0.005	163	0.013	7						
	H5n	18 " ACP	0.005	214	0.013	7						
	H5o	12 " ACP	0.0179	136	0.013	5						
	H5p	18 " ACP	0.01	46	0.013	11						
	H5q	18 " ACP	0.01	67	0.013	11						
	H6a	18 " ACP	0.005	419	0.013	7						
	H6b	24 " ACP	0.005	431	0.013	16						
	H6c	12 " ACP	0.01	108	0.013	4						
	H6d	12 " ACP	0.01	92	0.013	4						
	H6e	12 " ACP	0.2141	27	0.013	16						
	I10a	24 " CMP	0.01		0.024	12		S				
*	I10b	36 " RCP	0.004	765	0.013	42	40					
*	I10c	42 " RCP	0.004	385	0.013	64	59					
*	I10d	48 " RCP	0.004	371	0.013	91	64					
	I10e	18 " ACP	0.0084	115	0.013	10						
	I10f	18 " ACP	0.01	35	0.013	11						
	I10g	18 " RCP	0.01	33	0.013	11						
	I10h	24 " ACP	0.1416	62	0.013	85						
	I10j	12 " ACP	0.0107	30	0.013	4						
	I10k	12 " ACP	0.014	42	0.013	4						
	I10l	18 " ACP	0.1514	20	0.013	41						
	I11a	18 " ACP	0.005	313	0.013	7						
	I11b	24 " ACP	0.011	30	0.013	24						
	I11c	18 " ACP	0.005	104	0.013	7						
	I11d	12 " ACP	0.0069	29	0.013	3						
	I11e	12 " ACP	0.005	139	0.013	3						
	I15a1	18 " RCP	0.0329	104	0.013	19	21	C				
	I15a2	18 " RCP	0.326	39	0.013	60	21					
	I15a3	18 " RCP	0.03	302	0.013	18	21	C				
	I20a	24 " RCP	0.02	147	0.013	32	30					
	I20b	24 " RCP	0.419	23	0.013	146	30	V				
	I20c1	24 " RCP	0.03	87	0.013	39	45	C				
	I20c2	24 " RCP	0.34	30	0.013	132	45					
	I20d	24 " RCP	0.03	323	0.013	39	50	C				
	I20e	24 " RCP	0.035	152	0.013	42	58	C				
	I25a	36 " RCP	0.025		0.013	105	65					
	I25b	36 " RCP	0.02		0.013	94	71					
*	I25c1	36 " RCP	0.0166		0.013	86	77					
	I25c2	36 " RCP	0.014		0.013	79	77					
*	I25d	48 " RCP	0.0285		0.013	242	83					
	I25e	21 " RCP	0.025		0.013	25	8					
*	I30a	54 " CMP	0.0197		0.024	149	91	S				
*	I30b	[b=2' h=2.7' s=1:1]	[0.013]	1500	0.15	170	100	E,?				
	J5a	36 " RCP	0.044	896	0.013	140	119					
	J5b	b=1' h=2.5' s=1.5:1	0.04	160	0.015	264	36					
	J10a1	18 " ACP	0.07	348	0.013	28	9					
	J10a2	18 " ACP	0.055	210	0.013	25	9					
	J10a3	18 " ACP	0.036	101	0.013	20	9					
*	J15a	42 " RCP	0.034	1220	0.013	185	184					

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
* +	J20a	54 " RCP	0.0071	345	0.013	166	235	C			42 200	69030
	J25a	18 " RCP	0.045	327	0.013	22	30	C				
	J25b1	18 " RCP	0.07	271	0.013	28	45	C				
	J25b2	18 " RCP	0.035	279	0.013	20	40	C				
	J25c1	OPEN					90					
	J25c2	OPEN					111					
* +	J25d	54 " RCP	0.0092	117	0.013	189	312	C		MINOR		
* +	J25e	54 " RCP	0.0161	[900]	0.013	249	312	C			36 175	157500
*	J25f	24 " RCP	0.02		0.013	32	30					
*	J25g	b=14' h=6' s=1.5:1	0.0147		0.015	4093	1720					
	J25h	(2) 50" x 31" CMPA	0.0063	95	0.024	70	90	C,S				
* +	J30a	(2) 12.5' x 4.5' RCB	0.001	76	0.013	569	1720	C		MINOR		
*	J30b	36 " RCP	0.005	246	0.013	47	15					
	J30c	(2) 36" X 22" CMPA	0.0056	90	0.024	28	10	S				
* +	J30d	[b=20' h=2.5' s=5:1]	0.007	[2000]	0.03	496	1800	C,E,M	b=20 h=6 s=1.5 n=.03		220	440000
	K5a	18 " ACP	0.01		0.013	11	10					
	K5b	54 " CIPP	0.0637		0.013	496	208					
	K5c	54 " RCP	0.01		0.013	197	208	C				
	K5d	54 " RCP	0.01		0.013	197	208	C				
	K5e	42 " RCP	0.09		0.013	302	75					
	K5f	83" X 57" CMPA	0.0265		0.024	319	440	C,S				
	K5g	83" X 57" CMPA	0.007		0.024	163	515	C,S				
*	K5h	[b=4 h=4.5 s=1.5:1]	0.0254		0.015	1059	750	M,?				
* +	K5i	84 " CMP	0.015	67	0.024	424	780	C,S	84		390	26130
	K10a	27 " RCP	0.0313	250	0.013	55	55					
	K10b	27 " RCP	0.06		0.013	76	60					
	K10c	27 " RCP	0.06		0.013	76	65					
	K10d1	30 " CMP	0.02	282	0.024	31	70	C,S				
	K10d2	30 " CMP	0.05	149	0.024	50	70	C,S				
*	K10e1	b=4' h=6' s=1.5:1	0.005	60	0.015	1147	780					
*	K10e2	b=4' h=4.5' s=1.5:1	0.018	480	0.015	1150	780					
*	K10f1	28" x 20" CMPA	0.045	40	0.024	17	15	S				
* +	K10f2	28" x 20" CMPA	0.008	138	0.024	9	15	C,S		MINOR		
*	K10g1	b=4' h=4.5' s=1.5:1	0.025	620	0.015	1355	800					
*	K10g2	b=4' h=4.5' s=1.5:1	0.0464	126	0.015	1846	800					
	K10h1	18 " CMP	0.01	91	0.024	6	5	S				
	K10h2	18 " CMP	0.48	49	0.024	39	5	S				
	K10h3	18 " CMP	0.02	44	0.024	8	5	S				
	K10h4	18 " CMP	0.48	22	0.024	39	5	S				
	K15a	18 " ACP	0.018	155	0.013	14	15	C				
	K15b1	30 " RCP	0.4	28	0.013	259	62	V				
	K15b2	30 " RCP	0.04	261	0.013	82	62					
	K15b3	33 " RCP	0.046	740	0.013	113	77					
*	K15c	39 " RCP	0.019	332	0.013	114	77					
	K15d1	18 " RCP	0.04		0.013	21	40	C				
	K15d2	24 " RCP	0.004		0.013	14	40	C				
	K15e1	24 " RCP	0.06	395	0.013	55	20					
*	K15e2	30 " RCP	0.019	390	0.013	57	20					
	K15f	18 " RCP	0.066	512	0.013	27	20					

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
	K15g	24 " RCP	N/A	395	0.013		20	?				
* +	K15h	36 " RCP	0.005	[1100]	0.013	47	60	C			24 130	143000
*	K15i	[b=15' h=5' s=2:1]	0.02	1000	0.03	1959	1047	M,?				
*	K15j1	b=8' h=6' s=1.5:1	0.0322		0.015	4143	1047	M				
*	K15j2	[b=8 h=4.5 s=1.5:1]	0.0322		0.015	2310	1047	?				
	K20a	PCC DITCH	N/A				30	?				
	K20b	18 " ACP	0.2057	55	0.013	48	30					
	K20c	21 " ACP	0.033	140	0.013	29	40	C				
	K20d	24 " ACP	0.0286	289	0.013	38	40	C				
	K20e	24 " ACP	0.0286	359	0.013	38	40	C				
* +	K20f	24 " ACP	0.0343	327	0.013	42	45	C	MINOR			
*	K20g	36 " RCP	0.023	486	0.013	101	45					
*	K20h	b=8' h=6' s=1.5:1	0.02	1145	0.015	3258	1185	M				
	K21a	18 " ACP	0.0349	166	0.013	20	10					
	K21b	b=1' h=1.5' s=1.5:1	0.02		0.015	57	10					
	K21c	18 " ACP	0.025	61	0.013	17	10					
	K22a	b=2' h=3' s=1:1	0.06	715	0.015	462	80					
	K22b	30 " RCP	0.015	500	0.013	50	90	C				
	K22c	36 " RCP	0.01	158	0.013	67	100	C				
	K25a	24 " RCP	0.016		0.013	29	35	C				
	K25b	30 " RCP	0.016	138	0.013	52	35					
*	K25c1	b=8' h=6' s=1.5:1	0.02		0.015	3258	1250	M				
*	K25c2	20 ' X 6 ' RCB	0.02	54	0.013	3388	1263					
	K30a	24 " RCP	0.008	269	0.013	20	30	C				
*	K30b	b=8' h=6' s=1.5:1	0.01	1160	0.015	2304	1263	M				
	K35a	21 " ACP	0.017	163	0.013	21	19					
	K35b1	27 " ACP	0.014	48	0.013	37	36					
	K35b2	33 " ACP	0.008	128	0.013	47	36					
*	K35c	b=8' h=6' s=1.5:1	0.02		0.015	3258	1318	M				
	L5a	18 " RCP	0.026	57	0.013	17	50	C				
	L5b	21 " CMP	0.024	300	0.024	13	50	C,S				
* +	L5c	27 " RCP	0.014	60	0.013	37	92	C	42		200	12000
	L10a	18 " RCP	0.01		0.013	11	10					
	L10b	3' PCC DITCH	0.01		0.015	17	10	M				
	L10c	24 " ACP	0.0126		0.013	25	28	C				
* +	L10d	30 " ACP	0.012	200	0.013	45	47	C	MINOR			
	L10e	5' PCC V-DITCH	0.02	339	0.015	81	5					
*	L10f1	30 " RCP	0.22	16	0.013	192	47	V				
*	L10f2	30 " RCP	0.015		0.013	50	47					
* +	L10f3	30 " RCP	0.01	16	0.013	41	47	C	MINOR			
*	L10g	30 " ACP	0.014		0.013	49	47					
* +	L10h	36 " RCP	0.024	800	0.013	103	137	C	42		200	160000
	L10i	18 " ACP	0.02	161	0.013	15	40	C				
* +	L10j	42 " RCP	0.01	500	0.013	101	228	C			48 230	115000
* +	L15a1	(2) 36" X 22" CMPA	0.01	50	0.024	36	168	C,S	6X3 RCB		335	16750
* +	L15a2	18 " CMP	0.01	50	0.024	6	28	C,S	SEE L15a1			
	L15b	24 " ACP	0.005	215	0.013	16	6					
* +	L15c	42 " RCP	0.0142	502	0.013	120	215	C			42 200	100470
	L15d	30 " RCP	0.005		0.013	29	20					

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CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
*	+L15e	48 " RCP	0.0118	350	0.013	156	241	C		42	200	70000
*	+L15f	64 " X 53 " CMPA	0.0163	131	0.024	146	247	C,S	54		260	33972
*	+L15g	(2) 49" X 33" CMPA	0.009	121	0.024	84	247	C,S	60		285	34388
*	L20a	36 " RCP	0.0104		0.013	68	32					
*	+L20b1	54 " CIP	0.007	300	0.013	164	265	C		48	230	69000
*	+L20b2	54 " RCP	0.003	350	0.013	108	265	C		48	230	80500
*	+L20b3	54 " CIP	0.007	243	0.013	164	265	C		48	230	55805
	L20c	30 " RCP	0.003	118	0.013	22	10					
	L30a1	18 " RCP	0.0252	175	0.013	17	22	C				
	L30a2	18 " RCP	0.05	360	0.013	23	22					
*	L30b	30 " RCP	0.04	278	0.013	82	30					
	L30c1	18 " RCP	0.628	36	0.013	83	12					
	L30c2	18 " RCP	0.01	88	0.013	11	12	C				
	L30c3	30 " RCP	0.0549	37	0.013	96	12					
	L30c4	30 " RCP	0.055	251	0.013	96	22					
	L30c5	18 " RCP	0.01	30	0.013	11	10					
*	L30d	36 " CMP	0.18		0.024	153	76	S				
*	+L30f	42 " RCP	0.004	989	0.013	64	76	C	MINOR			
	L30g	18 " RCP	0.004		0.013	7	10	C				
*	+L30h	42 " CIP	0.004	1005	0.013	64	102	C		36	175	175875
	L35a1	24 " X 38 " RCPA	0.0026	189	0.013	21	10					
	L35a2	29 " x 45 " RCPA	0.0026	327	0.013	32	10					
	L35b	18 " RCP	0.005	205	0.013	7	7					
	L35c	18 " RCP	0.003	166	0.013	6	6					
	L35d	14 " X 23 " RCPA	0.005	203	0.013	6	10	C				
	L35e1	30 " RCP	0.0026	555	0.013	21	20					
*	L35e2	36 " RCP	0.0026	110	0.013	34	25					
*	L35f	(2) 66 " CIP	0.0035	823	0.013	397	322					
	L35g	18 " RCP	0.01	105	0.013	11	7					
	L35h	18 " RCP	0.01	165	0.013	11	7					
*	L35i	4.5 ' x 7 ' RCB	0.0025	86	0.013	222	30					
	L35j1	18 " RCP	0.016	110	0.013	13	7					
	L35j2	18 " RCP	0.0125	86	0.013	12	7					
	L35k	18 " RCP	0.0131	228	0.013	12	7					
*	L35l	(2) 5' X 6' RCB	0.005	48	0.013	596	322					
*	L35m	[b=125' h=6' s=2:1]	0.0053		0.03	9139	322	?				
	M10a	18 " RCP	0.0377		0.013	20	26	C				
*	+M10b	24 " RCP	0.0188	[150]	0.013	31	33	C	MINOR			
	M11a	24 " CMP	0.0254	106	0.024	20	10	S				
	M11b	18 " CMP	0.163	12	0.024	23	5	S				
	M11c	18 " CMP	0.02	36	0.024	8	5	S				
	M11d	24 " CMP	0.044	112	0.024	26	5	S				
	M15a	18 " RCP	0.0695	630	0.013	28	30	C				
	M15b	18 " RCP	0.01	60	0.013	11	5					
*	+M15c	24 " RCP	0.005	254	0.013	16	21	C	MINOR			
*	+M15d	b=0 h=1.4 s=1:1	0.005	[550]	0.015	9	51	C	36		175	96250
*	M15e	30 " RCP	0.037	281	0.013	79	55					
*	+M15f	30 " RCP	0.0158	198	0.013	52	59	C	MINOR			
	M15g	18 " RCP	0.184	136	0.013	45	10					

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LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
M15h	18 " RCP	0.148	128	0.013	40	7					
* +M20a1	24 " RCP	0.0343	344	0.013	42	85	C	33		160	55040
* +M20a2	24 " RCP	0.0414	271	0.013	46	99	C	33		160	43360
M20a3	18 " RCP	N/A	50	0.013		7	?				
* M20b	33 " RCP	0.065	185	0.013	135	113					
M25a	18 " ACP	0.005	106	0.013	7	7					
* +M25b	30 " RCP	0.006	[750]	0.013	32	42	C		24	130	97500
* +M25c1	30 " RCP	0.0057	175	0.013	31	58	C		30	150	26250
* M25c2	30 " RCP	0.0235	432	0.013	63	58					
* +M25d	30 " RCP	0.005	486	0.013	29	58	C		42	200	97266
* +M25e	36 " RCP	0.005	300	0.013	47	58	C	MINOR			
M30a1	18 " RCP	0.088	115	0.013	31	23					
M30a2	18 " RCP	0.063	137	0.013	26	23					
M30b	PIPE	N/A				52	?				
* +M30c	60 " RCP	0.003	[2000]	0.013	143	250	C		54	260	520000
M30d1	18 " ACP	0.012	101	0.013	12	12					
M30d2	24 " ACP	0.025	36	0.013	36	32					
M30d3	30 " RCP	0.028	260	0.013	69	32					
N5a	18 " CMP	0.1	156	0.024	18	25	C,S				
N5b	18 " RCP	0.05	212	0.013	23	15					
N5c	b=0 h=1 s=1:1	0.15		0.015	19	10					
O5a	18 " ACP	0.0612	179	0.013	26	14					
O5b1	30 " RCP	0.0035	446	0.013	24	20					
O5b2	30 " RCP	0.0042	66	0.013	27	20					
* O6a	(2) 5' x 3' RCB	0.006		0.013	254	192					
O10a	18 " CMP	0.01	186	0.024	6	10	C,S				
* +O10b1	24 " CMP	0.025	313	0.024	19	163	C,S	42		200	62600
* +O10b2	24 " CMP	0.03	400	0.024	21	163	C,S	42		200	80000
* +O10b3	24 " CMP	0.04	268	0.024	24	163	C,S	42		200	53600
O10c1	18 " CMP	0.01	114	0.024	6	10	C,S				
O10c2	18 " RCP	0.1498	135	0.013	41	30					
* +O10d	27 " RCP	0.0804	709	0.013	88	190	C	42		200	141720
* +O10e	36 " RCP	0.008	218	0.013	60	210	C		48	230	50172
* +O10f	54 " RCP	0.002	160	0.013	89	230	C	MINOR			
* +O10g	65 " X 40 " CMPA	0.002	362	0.024	39	230	C,S	(2)7X4 RCB		975	352950
* +O10h	72 " X 44 " CMPA	0.002	322	0.024	51	260	C,S	(2)7X4 RCB		975	313950
O15a1	24 " CMP	0.025	225	0.024	19	117	C,S				
O15a2	b=2' h=2' s=1.5:1	0.025	511	0.015	165	185	C				
O15a3	24 " CMP	0.22	114	0.024	57	185	C,S				
O15a4	18 " RCP	0.096	92	0.013	33	30					
O15a5	27 " RCP	0.028	229	0.013	52	215	C				
O15b	30 " CMP	0.031	449	0.024	39	215	C,S				
O15c	30 " CMP	0.062	457	0.024	55	215	C,S				
* +O15d	30 " RCP	0.009	168	0.013	39	114	C		33	160	26904
* +O15e	33 " RCP	0.009	420	0.013	50	137	C	6X3 RCB		335	140630
* +O15f	(2) 27 " RCP	0.008	154	0.013	55	166	C	6X3 RCB		335	51590
* +O15g	6' X 1.5' RCB	0.007	143	0.013	61	166	C	MINOR			
* +O15h	42 " RCP	0.004	160	0.013	64	166	C	SEE O10g			
* +O15i	72 " X 44 " CMPA	0.0020	594	0.024	52	166	C,S	SEE O10h			

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
*	O20a	(3) 4' X 6' RCB	0.005		0.013	657	475					
*	O20b	[b=8' h=4' s=2:1]	[0.013]	600	0.03	661	475	E,M,?				
	O25a	18 " RCP	0.1158	149	0.013	36	34					
	O25b	18 " RCP	0.0964	166	0.013	33	40	C				
	O25c	21 " RCP	0.0145	243	0.013	19	45	C				
	O25d	21 " RCP	0.062	269	0.013	39	50	C				
	O25e	21 " RCP	0.0686	296	0.013	41	55	C				
	O25f	24 " RCP	0.0678	212	0.013	59	60	C				
*	+O25k	24 " RCP	0.005	212	0.013	16	64	C	42		200	42410
*	+O25l	30 " RCP	0.005	47	0.013	29	81	C		36	175	8225
	O26a	[b=2'h=1.5's=1.5:1]	0.043		0.03	59	193	C,E,V				
	O26b	18 " RCP	0.04	20	0.013	21	193	C				
	O26c	18 " RCP	0.01	78	0.013	11	193	C				
*	+O30a	30 " RCP	0.031	202	0.013	72	81	C	MINOR			
*	O30b	48 " RCP	0.035		0.013	269	81					
*	O30c	48 " RCP	0.0156		0.013	179	81					
*	O30d	69 " RCP	0.0078		0.013	334	331					
*	O30e	(2) 5' x 3' RCB	0.0092		0.013	315	252					
	O35a	33 " RCP	0.0042	773	0.013	34	25					
*	O35b	(2) 60 " RCP	0.0055	1539	0.013	386	331					
	O35c	18 " RCP	0.005	63	0.013	7	7					
	O35d	18 " RCP	0.013	238	0.013	12	10					
	O35e	18 " RCP	0.01	52	0.013	11	5					
	O35f	24 " RCP	0.024	179	0.013	35	8					
*	+O40a	33 " RCP	0.0042	710	0.013	34	35	C	MINOR			
*	+O40b	(2) 54 " RCP	0.0095	635	0.013	383	430	C	MINOR			
	P5a1	24 " RCP	0.009		0.013	21	7					
	P5a2	(2) 22" X 13" CMPA	N/A		0.024		10	S,?				
	P10a	30 " CMP	0.01		0.024	22	60	C,S				
	P10b	36 " CMP	0.0108		0.024	38	55	C,S				
	P10c	5 ' X 4 ' RCB	N/A		0.013		118	?				
	P10d	b=3' h=2' s=2:1	0.025		0.015	244	130	M				
*	+P10e1	42 " RCP	0.0113	281	0.013	107	135	C	MINOR			
*	+P10e2	42 " RCP	0.0127	281	0.013	113	137	C	MINOR			
*	+P10e3	42 " RCP	0.0261	308	0.013	162	187	C		24	130	39975
*	+P10e4	42 " RCP	0.0182	301	0.013	136	187	C		30	150	45075
*	+P10e5	42 " RCP	0.0145	189	0.013	121	187	C		36	175	33075
	P10e7	24 " RCP	0.0712		0.013	60	50					
	P15a1	24 " RCP	0.1415	154	0.013	85	50					
	P15a2	24 " RCP	0.0177	191	0.013	30	50	C				
	P15a3	24 " RCP	0.036	478	0.013	43	55	C				
	P15a4	24 " RCP	0.0528	397	0.013	52	60	C				
	P15b	30 " RCP	0.01	368	0.013	41	70	C				
*	+P15c	48 " RCP	0.0135	212	0.013	167	282	C		42	200	42400
	P15d	18 " RCP	0.007		0.013	9	30	C				
*	+P15e	24 " RCP	0.0076	[1100]	0.013	20	118	C	48		230	253000
*	+P15f	54 " RCP	0.0132	606	0.013	226	420	C		54	260	157560
*	+P15g	(2) 57" X 38" CMPA	0.01	[610]	0.024	132	476	C,S	(2) 60		515	314150
	P15h	OPEN	N/A				56	?				

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	PARALLEL PIPE	UNIT COST	COST
	P15i	(2) 42 " RCP	N/A		0.013		56	?				
*	+P20a	4 ' X 8 ' RCB	0.0031	456	0.013	247	476	C		72	315	143640
*	+P20b	84 " CSP	0.001	562	0.013	202	507	C,S		72	315	177030
*	+P20c	78 " CIP	0.001	66	0.013	166	515	C		72	315	20866
*	+P20d	(2) 4'X 5 ' RCB	0.001	145	0.013	210	520	C		72	315	45675
*	P20e	b=10' h=5' s=2:1	0.001	722	0.015	665	524					
*	+P20f	(2) 5'X 5 ' RCB	0.001	65	0.013	155	524	C	MINOR			
*	+Q5b	33 " RCP	0.008	362	0.013	47	176	C		42	200	72400
*	+Q5c	33 " RCP	0.01	380	0.013	53	230	C	8X4 RCB		435	165680
*	+Q5d	36 " ACP	0.008	347	0.013	60	300	C	8X4 RCB		435	151074
	Q5e	OPEN	0.0384		0.015		45	?				
	Q5f	18 " ACP	0.045		0.013	22	45	C				
	Q5g	30 " RCP	0.0384		0.013	80	55					
	Q5h	30 " RCP	0.02		0.013	58	55					
	Q5i	30 " RCP	0.01		0.013	41	55	C				
	Q5j	24 " RCP	0.012	52	0.013	25						
	Q5k	24 " RCP	0.005	56	0.013	16						
	Q5l	21 " RCP	0.01	56	0.013	16						
	Q5m	48 " RCP	0.037		0.013	276						
	Q5n	24 " RCP	0.032		0.013	40						
*	+Q10a	42 " RCP	0.0039	329	0.013	63	325	C	10X4 RCB		585	192512
*	+Q10b	48 " RCP	0.004	375	0.013	91	340	C	10X4 RCB		585	219246
*	+Q10c	48 " RCP	0.0060	649	0.013	111	365	C	10X4 RCB		585	379782
*	+Q15a	48 " RCP	0.0075	302	0.013	124	425	C	10X4 RCB		585	176932
*	+Q15b	(2) 39 " RCP	0.0046	842	0.013	113	475	C	10X4 RCB		585	492278
*	+Q20a	(2) 42 " RCP	0.002	383	0.013	90	502	C	10X4 RCB		585	223997
*	+Q25a	18 " RCP	0.0055	416	0.013	8	20	C	MINOR			
*	+Q25b	18 " RCP	0.0023	267	0.013	5	36	C	36		175	46811
*	+Q25c	21 " ACP	0.005	825	0.013	11	40	C	36		175	144445
*	+Q25d	21 " ACP	0.0066	69	0.013	13	45	C	36		175	12024
*	+Q25e	33 " RCP	0.004	674	0.013	33	65	C	42		200	134800
*	+Q25f	33 " RCP	0.005	20	0.013	37	75	C	42		200	4000
*	+Q25g	[b=3.5' h=2.5' s=1:1]	[0.003]	[650]	0.03	51	581	C,?	b=10 h=5 s=1.5:1 n=.03		150	97500
*	+Q25h	b=6' h=4.5' RECT	0.003	620	0.015	322	600	C	OK			
*	+Q25i	42 " RCP	0.003	180	0.013	55		C,?	8X5 RCB		470	84146
*	+Q25j	49" x 33" CMPA	0.003	86	0.024	24		C,S,?	10X5 RCB		640	55040
*	+Q25k	42 " RCP	0.003	325	0.013	55		C,?	10X5 RCB		640	208000
*	+Q25l	[b=3' h=7 s=1.5:1]	[0.003]	1570	0.03	573		C,?	b=10 h=6 s=1.5 n=.03		165	259050
	Q25n	18 " RCP	0.0025	103	0.013	5	5					
	Q25o	24 " RCP	0.01	47	0.013	23	5					
*	+Q25p	18 " CMP	0.0256	116	0.024	9		S	8X5 RCB		470	54288
*	+Q26a	18 " RCP	0.001	208	0.013	3	20	C	36		175	36400
	Q26b	18 " RCP	0.0118	202	0.013	11	15	C				
	Q26c	18 " RCP	0.002	322	0.013	5	10	C				
*	Q26d	48 " RCP	0.0025	42	0.013	72	30					
	Q26e	18 " CMP	0.05		0.024	13	5	S				
	Q26f	24 " RCP	N/A		0.013		10	?				
*	+Q30a	18 " RCP	0.0014	[300]	0.013	4	70	C	(2) 54 EXTEND TO		490	147000
*	+Q30b1	28 " x 20 " CMPA	0.007	48	0.024	9	131	C,S	(2) 54 BUENA VISTA		490	23520

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LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
* +Q30b2	28 " x 20 " CMPA	0.006	42	0.024	8	51	C,S	36		175	7350
* +Q30c	24 " CMP	0.006	462	0.024	9	131	C,S	8X5 RCB		470	217140
* +Q30d	24 " CMP	0.006	98	0.024	9		C,S,?	OK			
* +Q30e	24 " CMP	0.0058	208	0.024	9		C,S,?	OK			
* +Q30f	36 " CMP	0.0045	448	0.024	24		C,S,?	OK			
* +Q30g	64 " x 43 " CMPA	0.0025	1232	0.024	44		C,S,?	OK			
* +Q30h	71 " x 47 " CMPA	0.0025	664	0.024	57		C,S,?	OK			
* +Q30i	(2) 54 " RCP	0.003	2500	0.013	215		C,S,?	OK			
* +Q31a	64 " x 43 " CMPA	0.008	12	0.024	79	628	C,S	OK			
Q31b1	18 " CMP	0.004		0.024	4		S				
Q31b2	18 " RCP	0.0014		0.013	4						
Q31b3	18 " RCP	0.0029	510	0.013	6						
* +Q31c1	30 " CMP	0.0024	448	0.024	11		C,S,?	OK			
* +Q31c2	24 " CMP	0.004	540	0.024	8		C,S,?	OK			
* +Q31c3	30 " CMP	0.0025	276	0.024	11		C,S,?	OK			
* +Q31d	50 " x 31 " CMPA	0.0025	751	0.024	22		C,S,?	OK			
* +Q31e	49 " x 33 " CMPA	0.0025	282	0.024	22		C,S,?	OK			
* +Q31f	64 " x 43 " CMPA	0.0062	130	0.024	69		C,S,?	OK			
Q35a	18 " RCP	0.001	364	0.013	3						
* +R5a	27 " RCP	0.003	307	0.013	17	24	C	MINOR			
* +R5b	33 " RCP	0.0048	333	0.013	37	27		MINOR			
* +R5c	33 " RCP	0.003	296	0.013	29	47	C	MINOR			
* +R10a	36 " RCP	0.002	315	0.013	30	54	C	MINOR			
* +R10b	24 " RCP	0.0017	253	0.013	9	61	C	36		175	44275
R15b	42 " RCP	0.0024		0.013	49	49					
R15c	36 " RCP	0.0032		0.013	38	35					
R15d	36 " CIP	0.0179		0.013	89	25					
R15e	36 " CIP	0.0024		0.013	33	14					
R15h	b=3' h=4" RECT.	0.005	120	0.015	89	14					
R15i	18 " RCP	0.005		0.013	7	10	C				
* +R20a	54 " RCP	0.0023	[500]	0.013	94	100	C	MINOR			
S5a	18 " RCP	0.006		0.013	8	45	C				
S5b	42 " RCP	0.002	291	0.013	45	50	C				
* S5c	48 " RCP	0.0129	473	0.013	163	65					
S15a	15 " RCP	0.004		0.013	4	20	C				
* +S15b	35 " x 24 " CMPA	0.0036	178	0.024	11	28	C,S	(2) 24		220	39160
* +S15c	30 " RCP	0.005	277	0.013	29	70	C		36	175	48416
* +S15d	36 " RCP	0.005	159	0.013	47	95	C		36	175	27790
* +S15e	48 " RCP	0.0026	847	0.013	73	110	C		42	200	169428
* +S15f	48 " RCP	0.0049	280	0.013	101	120	C	MINOR			
* S15g	54 " RCP	0.0052	244	0.013	142	130					
* S15h	54 " RCP	0.0064	435	0.013	158	148					
S15i	24 " RCP	0.014		0.013	27	27					
S15j	24 " RCP	0.0036		0.013	14	14					
S15k	18 " RCP	0.005		0.013	7	7					
S15l	36 " RCP	0.0076	150	0.013	58	148	C				
T5a	18 " RCP	0.0193		0.013	15	10					
T5b	30 " RCP	0.0178	61	0.013	55	62	C				
* +T5c	30 " RCP	0.01	253	0.013	41	62	C		24	130	32937

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CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
* +T5d	(2) 24 " RCP	0.01	88	0.013	45	62	C		MINOR		
T5e	18 " RCP	0.0232		0.013	16	10					
T5f	18 " RCP	0.015		0.013	13	12					
T25a	30 " CMP	N/A		0.024		99	S,?				
T25b	OPEN	N/A		0.03		115	?				
T25c	18 " CMP	N/A		0.024		15	S,?				
T25d	OPEN	N/A		0.03		25	E,?				
T25e	(2) 36 " CMP	N/A		0.024		140	M,S				
T30a1	N/A						?				
T30a2	OPEN	N/A		0.03		200	?				
T30b	6' x 3 ' RCB	N/A		0.013		211	M,?				
T30c	OPEN	N/A		0.015		211	M,?				
* +U5a1	43 " x 27 " CMPA	0.013	72	0.024	35	64	C,S	36		175	12535
* +U5a2	43 " x 27 " CMPA	0.016	49	0.024	38	64	C,S	36		175	8510
* U5b	36 " RCP	0.028	217	0.013	112	75					
* U5c	42 " RCP	0.0071	296	0.013	85	75					
* U5d	48 " RCP	0.0073	267	0.013	123	110					
U5e	30 " RCP	0.135	210	0.013	151	40					
U5f	30 " ACP	0.0135		0.013	48	20					
U5g	24 " ACP	0.0247	150	0.013	36	20					
U5h	29 " x 18 " CMPA	0.006	46	0.024	8	10	C,S				
U5i	18 " ACP	0.0143	201	0.013	13	20	C				
U6a	24 " CMP	[0.01]	60	0.024	12	10					
U6b	21 " RCP	0.01	920	0.013	16	10					
U6c	[b=5 h=3 s=2:1]	0.006	280	0.013		12	?				
U6d	30 " CMP	0.022	54	0.024	33	10	S				
* U10a	54 " RCP	0.0052	690	0.013	142	110					
* +U20a	28 " X 20 " CMPA	0.0051	1166	0.024	7	58	C,S	42		200	233200
* +U20b	30 " CMP	0.0037	394	0.024	14	68	C,S	42		200	78800
* +U20c	28 " X 20 " CMPA	0.0018	108	0.024	4	15	C,S		MINOR		
* +U20d	43 " X 27 " CMPA	0.0018	450	0.024	13	15	C,S		MINOR		
U20e	(2) 36 " RCP	0.0035		0.013	79	25					
U20f	OPEN	N/A				30	?				
* U20g	(2) 58" x 36" CMPA	0.005		0.024	93	50	S				
* U20h	72 " x 44 " CMPA	0.0065	240	0.024	92	50	S				
U20i	OPEN	N/A				5	?				
U20j	28 " x 20 " CMPA	0.0039	76	0.024	6	25	C,S				
* V25a	[b=10 h=8 s=1.5:1]	[0.02]	2300	0.015	6752	1000	?				
* V25b	(2) 8' x 5' RCB	0.0322		0.013	2794	1111					
* +V30a1	b=10 h=4.5 s=1.5:1	0.005	[100]	0.015	1067	1175	C,E,M		MINOR		
* +V30a2	[b=16' h=3' s=1:1]	[0.019]	[200]	0.03	684	1175	C,?	b=12 h=5.5 s=1.5 n=.03		155	31000
* V30b	(2) 8' x 5' RCB	[0.019]		0.013	1680	1290	?				
* V35a	[b=12 h=6 s=1.5:1]	[0.019]		0.015	4150	1300	M,?				
* V40a	(2) 9' x 4' RCB	0.012		0.013	1487	1312					
* V40b	(2)8'x4.75' RCB	0.012	602	0.013	1596	1350					
* V40c	b=10' h=5' s=1.5:1	0.0148	1155	0.015	2253	1381					
* +V40d	(2) 10' x 4' RCB	0.0062	74	0.013	913	1381	C,M		MINOR		
V45a	18 " RCP	0.005		0.013	7	5					
V45b	18 " RCP	0.0111		0.013	11	10					

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CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
*	V45c	27 " RCP	0.009		0.013	29	25					
*	+V45d	b=5' h=5' s=1.5:1	0.0181	[800]	0.03	810	1387	C,E,M	b=8 h=5 s=1.5 n=.015		230	184000
*	+V45e1	(2) 6' X 5' RCB	0.0089	150	0.013	796	1387	C		MINOR		
*	+V45e2	(2) 6' X 5' RCB	0.0192	96	0.013	1169	1387	C		MINOR		
*	V45f	b=12' h=6' s=1.5:1	0.0192	278	0.015	4172	1400					
	V45g	24 " RCP	0.005	105	0.013	16	15					
	V45h	21 " RCP	0.005	300	0.013	11	10					
	V45i	24 " RCP	0.005	300	0.013	16	15					
*	V45j	b=12 h=6 s=1.5:1	0.006	462	0.015	2332	1455					
*	+V45k	[b=7 h=5 s=1.5:1]	0.006	400	0.03	565	1472	C,?	b=12 h=6 s=1.5 n=.015		380	152000
*	+V50a	(4) 8' X 3' RCB	0.0135	99	0.013	1351	1472	C,M		MINOR		
*	V50b	[b=20'h=10s=1.5:1]	0.006		0.03	4553	1472	E,M,V				
	V50c1	(2) 22" x 13" CMPA	0.005	100	0.024	7	15	C,S				
	V50c2	24 " RCP	0.016	304	0.013	29	15					
	V50d	24 " CMP	0.01	104	0.024	12	15	C,S				
	V50e1	20 " X 28 " CMPA	0.0042	36	0.024	7	15	C,S				
	V50e2	24 " CMP	0.004	340	0.024	8	15	C,S				
	V50f	b=0' h=1' s=1.5:1	0.01	100	0.015	8	30	C				
	W15a	36 " RCP	0.03	289	0.013	115	120	C				
	W15b	36 " RCP	0.0381	253	0.013	130	120					
	W15c	36 " RCP	0.03	375	0.013	115	130	C				
	W15d	42 " RCP	0.0197	270	0.013	141	130					
	W15e	42 " RCP	0.0162	247	0.013	128	130	C				
	W15f	49 " x 33 " CMPA	0.012	36	0.024	48	130	C,S				
	W15g	(2) 49" x 33" CMPA	0.0106	89	0.024	91	136	C,S				
	W15h	18 " RCP	0.01	111	0.013	11	10					
	W20a	30 " RCP	0.032	125	0.013	73	90	C				
	W20b	30 " RCP	0.051	295	0.013	93	100	C				
	W20c	30 " RCP	0.03	141	0.013	71	105	C				
	W20d	36 " RCP	0.022	76	0.013	99	110	C				
	W25a	43 " X 27 " CMPA	0.025		0.024	48	30	S				
	W25b	36 " CIPP	0.023		0.013	101	42					
	W25c	36 " CIPP	0.01		0.013	67	58					
	W30a	22 " X 13 " CMPA	0.003		0.024	3	8	C,S				
	W30b	16 " RCP	0.006		0.013	6	10	C				
	W30c	22 " X 13 " CMPA	0.014		0.024	5	5	S				
	W30d	20 " RCP	0.0178		0.013	19	12					
	W30e	36 " CMP	0.01		0.024	36	70	C,S				
	W35a	24 " CMP	0.011	280	0.024	13	51	C,S				
	W35b	(2) 71" x 47" CMPA	0.01	100	0.024	229	51	S				
	W35c	18 " CMP	0.0139	114	0.024	7	10	C,S				
	W35d	24 " CMP	0.0377		0.024	24	15	S				
	W35e	24 " CMP	0.0173		0.024	16	25	C,S				
	W35f	24 " CMP	0.0175		0.024	16	15	S				
	W35g	18 " CMP	0.0065		0.024	5	5	S				
	W35h	12 " RCP	N/A		0.013		5	?				
	W35i	24 " CMP	0.0075		0.024	11	10	S				
	W35j	24 " CMP	0.0244	94	0.024	19	15	S				
*	X10a	[b=6' h=4' s=1:1]	0.05		0.03	774	350	E,M,?				

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	LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
*	X10b	[b=20" h=3' s=2:1]	[0.025]		0.03	1520	960	E,M,?				
	X10c	24 " RCP	N/A		0.013		20	?				
	X10d	24 " RCP	N/A		0.013		20	?				
*	+X15a	(2) 3.5' X 6' RCB	0.01	[50]	0.013	513	995	C,M		MINOR		
	X15b	18 " RCP	0.014	36	0.013	12	20	C				
	X15c	18 " RCP	0.039	111	0.013	21	25	C				
	X15d	18 " RCP	0.047	60	0.013	23	25	C				
	X15e	18 " RCP	0.006	97	0.013	8	25	C				
	X15f	18 " RCP	0.014	36	0.013	12	30	C				
	X15g	24 " RCP	0.47	48	0.013	155	30	V				
	X15h	24 " RCP	0.0165	130	0.013	29	30	C				
	X15i	24 " RCP	0.012	190	0.013	25	35	C				
	X15j	[b=1.5'h=1.5's=1:1]	0.0047	200	0.03	13	35	C				
	X15k	[b=1.5'h=1.5's=1:1]	0.02	100	0.03	27	35	C,E,V				
	X15l	[b=1.5'h=1.5's=1:1]	0.15	80	0.03	73	35	E,V				
	X15n	24 " RCP	N/A	67	0.013		40	?				
	X15o	18 " RCP	0.0161	421	0.013	13	40	C				
	X15p	18 " RCP	0.04	169	0.013	21	40	C				
	X15q	18 " RCP	0.0518	112	0.013	24	45	C				
	X15r	18 " RCP	0.0867	40	0.013	31	45	C				
	X15s	18 " RCP	0.051	151	0.013	24	45	C				
	X15t	18 " RCP	0.01	204	0.013	11	45	C				
	X15u	18 " CMP	0.0417	137	0.024	12	45	C,S				
*	X15v	[b=20' h=3' s=1:1]	[0.025]		0.03	1520	1021	E,M,?				
	X20a	18 " RCP	0.1438	122	0.013	40	12					
*	X20b	72 " RCP	0.014		0.013	501	1032	C,M				
	X20c	(2) 4' X 4' RCB	0.06		0.013	896	50	M				
	X30a	18 " RCP	0.015		0.013	13	10					
	X30b	18 " RCP	0.01		0.013	11	10					
	X30c	30 " CIP	0.0292		0.013	70	50					
	X30d	42 " CIP	0.005		0.013	71	70					
	X30e	60 " CIP	0.01		0.013	260	85					
	Y10a	36 " RCP	0.06	236	0.013	163	259	C				
	Y10b	36 " RCP	0.066	480	0.013	171	262	C				
	Y10c	36 " RCP	0.033	83	0.013	121	265	C				
	Y10d	OPEN	N/A	200			265	E,M,?				
	Y10e	36 " RCP	0.0185	85	0.013	91	265	C				
	Y10f	36 " RCP	0.1	140	0.013	211	270	C				
	Y10g	36 " RCP	0.038	160	0.013	130	270	C				
	Y10h	36 " RCP	0.062	163	0.013	166	289	C				
*	+Y15a	36 " RCP	0.0138	232	0.013	78	289	C			48 230	53360
*	+Y15b	48 " CIP	0.0395	563	0.013	285	289	C		MINOR		
	Y15c1	18 " RCP	0.028	1645	0.013	18	10					
	Y15c2	18 " RCP	0.02	178	0.013	15	15					
	Y15c3	24 " RCP	0.02	94	0.013	32	28					
*	Y15d	54 " CIP	0.026	475	0.013	317	316					
*	Y15e	(2) 42 " CIP	0.0301	110	0.013	349	342	M				
	Y15f	30 " RCP	0.012		0.013	45	26					
*	+Y15g1	28 " x 20 " CMPA	0.0245	72	0.024	16	27	C,S	24		130	9360

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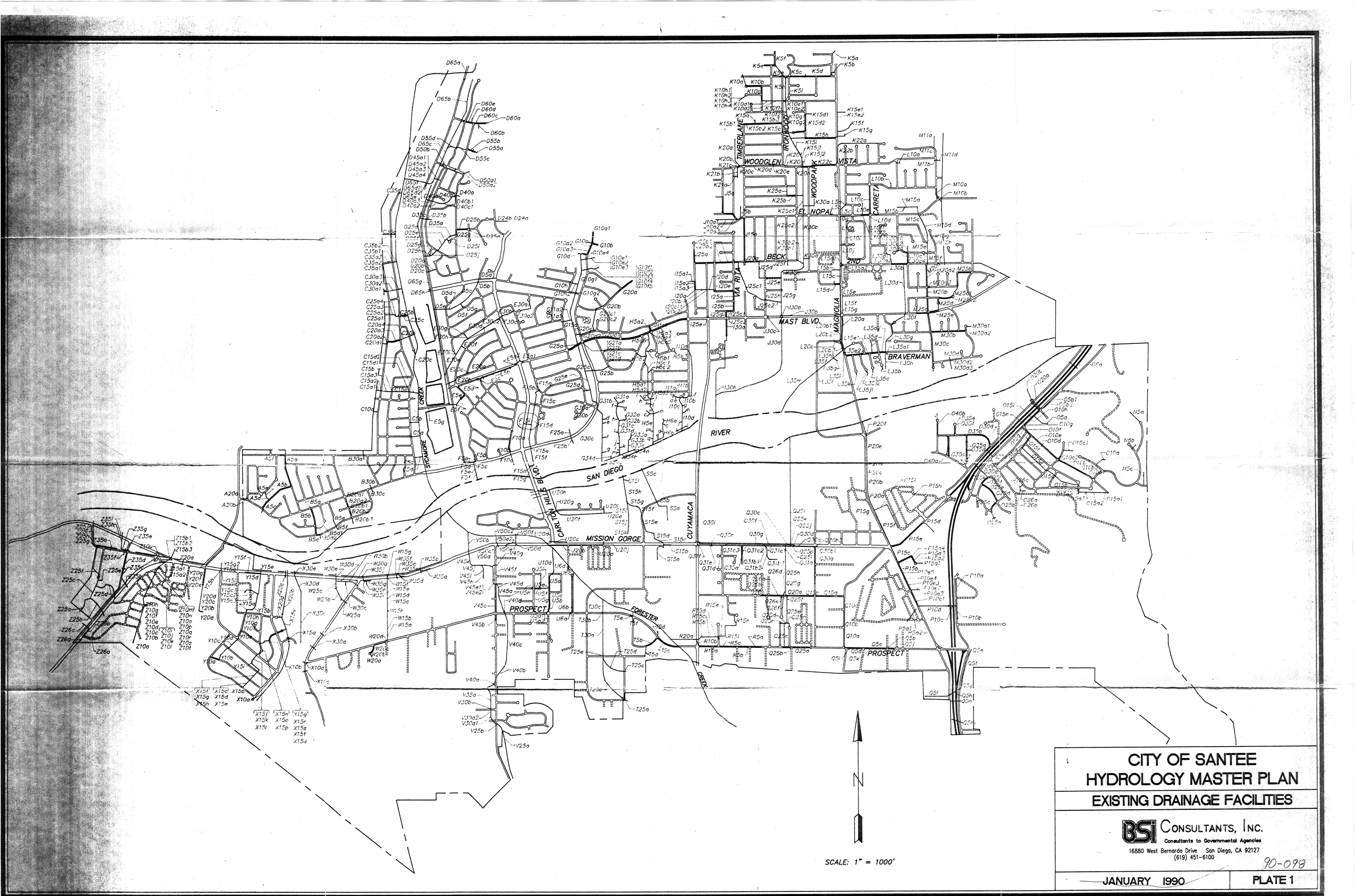
LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
* +Y15g2	24 " CMP	0.035	100	0.024	23	27	C,S		MINOR		
* +Y15h	18 " RCP	0.005	58	0.013	7	13	C		MINOR		
* Y15i	24 " CMP	0.0159	22	0.024	15	14	S				
Y20a	24 " CIP	0.0263	152	0.013	37	37					
Y20b	24 " CIP	0.0713	163	0.013	60	37					
Y20c	24 " CIP	0.0676	236	0.013	59	37					
Y20d	24 " CIP	0.0211	294	0.013	33	37	C				
Y20e	24 " CIP	0.0853	219	0.013	66	37					
Y20f	30 " CIP	0.0221	241	0.013	61	37					
Y20g	42 " x 29 " CMPA	0.0253	79	0.024	48	37	S				
Z10a	24 " CMP	0.1283	366	0.024	44	45	C,S				
Z10b	24 " CMP	0.069	210	0.024	32	55	C,S				
Z10c	30 " CMP	0.0297	54	0.024	38	66	C,S				
Z10d	30 " CMP	0.4726	61	0.024	153	70	S				
Z10e	27 " CMP	0.0441	103	0.024	35	75	C,S				
Z10f	27 " CMP	0.1017	167	0.024	53	80	C,S				
Z10g	30 " CMP	0.0098	131	0.024	22	82	C,S				
Z10h	30 " CMP	0.6462	29	0.024	179	84	S,V				
Z10i	30 " CMP	0.0116	88	0.024	24	93	C,S				
Z10j	30 " CMP	0.011	44	0.024	23	100	C,S				
Z10k	30 " CMP	0.0102	123	0.024	22	108	C,S				
Z10l	30 " CMP	0.4208	53	0.024	144	118	S				
Z10m	30 " CMP	0.0251	177	0.024	35	125	C,S				
Z10n	30 " CMP	0.018	68	0.024	30	135	C,S				
Z10o	30 " CMP	0.4639	33	0.024	151	145	S				
Z10p	30 " CMP	0.001	212	0.024	7	152	C,S				
Z10q	30 " CMP	0.379	16	0.024	137	159	C,S				
Z10r	30 " CMP	0.011	110	0.024	23	165	C,S				
Z10s1	36 " CMP	0.0086	208	0.024	33	150	C,S				
Z10s2	18 " CMP	0.0086	187	0.024	5	20	C,S				
Z10t1	36 " CMP	0.2311	37	0.024	174	155	S				
Z10t2	18 " CMP	0.2311	37	0.024	27	25	S				
Z10u	18 " RCP	0.01	1814	0.013	11	10					
Z15a1	36 " RCP	0.0326		0.013	120	40					
Z15a2	24 " RCP	0.0326		0.013	41	30					
Z15b1	36 " RCP	0.0326	115	0.013	120	186	C				
Z15b2	24 " RCP	0.0326	115	0.013	41	186	C				
Z15b3	[b=10'h=varies s=1:1]	0.005	170	0.03		186	?				
Z20a	24 " CMP	0.0051		0.024	9	45	C,S				
Z25a	54 " RCP	0.032		0.013	352	140					
Z25b	30 " RCP	0.0279		0.013	68	45					
Z25c	54 " RCP	0.032		0.013	352	266					
Z25d	24 " RCP	0.008		0.013	20	115	C				
Z25e	21 " RCP	0.017	204	0.013	21	10					
* Z25f	54 " RCP	0.0324	1032	0.013	354	286					
* Z25g	[b=14' h=2.5' s=1:1]	[0.039]		0.03	631	359	?				
* +Z25h	18 " CMP	[0.039]	[40]	0.024	11	359	C,S,?	6X3 RCB		335	13400
* +Z25i	[b=6' h=2.5' s=1:1]	[0.039]	[400]	0.03	264	359	C,?	b=6 h=4 s=1.5 n=.03		85	34000
* +Z25j	48 " RCP	0.0178	[50]	0.013	192	359	C		48	230	11500

* = MASTER DRAINAGE FACILITY + = DEFICIENT MASTER DRAINAGE FACILITY [ ] = ESTIMATED VALUE
DEFICIENCIES: C = CAPACITY E = EROSION M = MAINTENANCE S = SERVICE LIFE V = VELOCITY ? = NOT ENOUGH DATA

CITY OF SANTEE --- SUMMARY OF EXISTING CONDITIONS AND RECOMMENDED IMPROVEMENTS

LINE	SIZE	SLOPE	LENGTH (FT)	N VALUE	CAPACITY (CFS)	100-YEAR FLOW (CFS)	DEFICIENCY RATING	RECOMMENDATIONS REPLACEMENT PIPE	RECOMMENDATIONS PARALLEL PIPE	UNIT COST	COST
Z26a	30 " CMP	0.046		0.024	48	30	S				
* +Z26b	36 " CMP	0.0678	[500]	0.024	94	170	C,S	36		175	87500
* Z26c	42 " RCP	0.12		0.013	348	200	V				
* +Z26d	24 " CMP	0.03	[700]	0.024	21	140	C,S	42		200	140000
Z35a	24 " CMP	0.01		0.024	12	8	S				
Z35b	24 " RCP	0.079		0.013	64	5					
Z35c	24 " RCP	0.01		0.013	23	23					
Z35d	b=2' h=2' RECT.	0.01		0.015	30	38	C,M				
Z35e	(2) 25" X 16" CMPA	0.041		0.024	29	38	C,S				
Z35f	25 " X 16 " CMPA	0.012		0.024	8	5	S				
Z35g	30 " CMP	0.01		0.024	22	42	C,M,S				
Z35h	OPEN	N/A				42	?				
Z35i	30 " RCP	N/A		0.013		42	?				

* = MASTER DRAINAGE FACILITY + = DEFICIENT MASTER DRAINAGE FACILITY [ ] = ESTIMATED VALUE
DEFICIENCIES: C = CAPACITY E = EROSION M = MAINTENANCE S = SERVICE LIFE V = VELOCITY ? = NOT ENOUGH DATA



CITY OF SANTEE
HYDROLOGY MASTER PLAN
EXISTING DRAINAGE FACILITIES

BSI CONSULTANTS, INC.
Consultants to Governmental Agencies
16880 West Bernardo Drive San Diego, CA 92127
(619) 451-6100

90-098

JANUARY 1990

PLATE 1

APPENDIX D

HYDRAULIC ANALYSES

HYDRAULIC ANALYSES

FOR

SAN DIEGO RIVER TRAIL

CARLTON OAKS GOLF COURSE SEGMENT

May 10, 2017



Wayne W. Chang, MS, PE 46548

ChangConsultants

Civil Engineering ◦ Hydrology ◦ Hydraulics ◦ Sedimentation

P.O. Box 9496
Rancho Santa Fe, CA 92067
(858) 692-0760

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APPENDICES

A. Existing Condition and Proposed Condition HEC-RAS Analyses

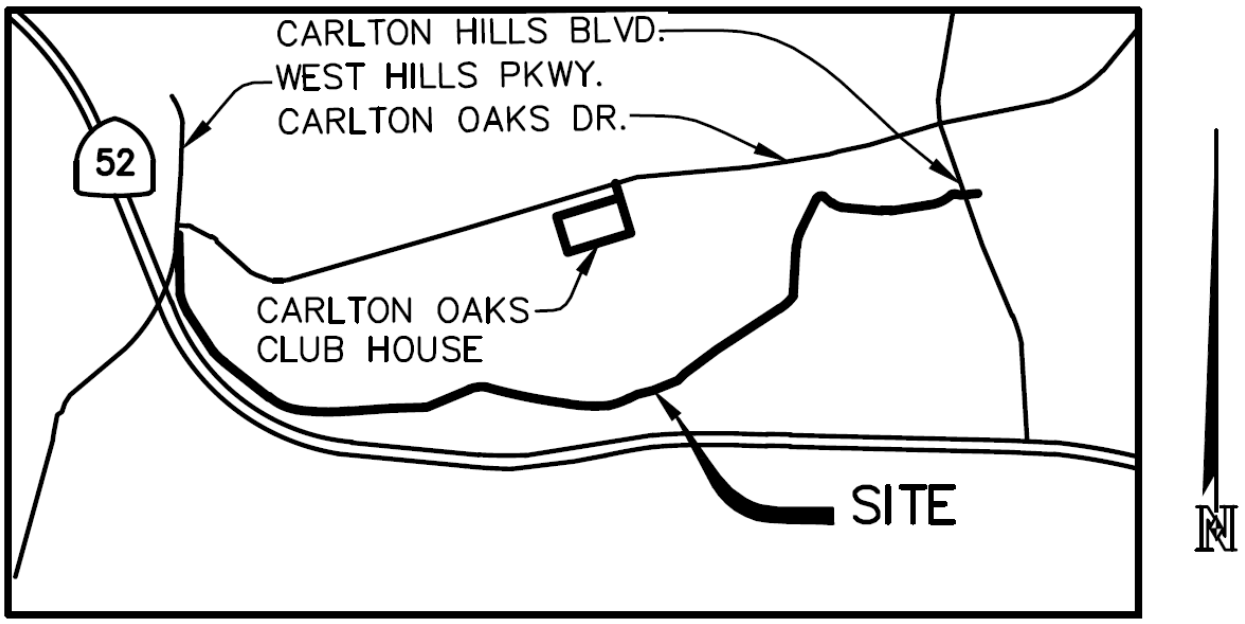
MAP POCKET

HEC-RAS Work Map

INTRODUCTION

Updates in this May 10, 2017 report revision are as follows. All text modifications are underlined. Table 1 and Appendix A are completely revised based on the addition of cross-sections 318 and 325, and the utilization of amended 100-year peak discharge flow rates in accordance with Chapter 15.52 (Flood Damage Prevention) of the city of Santee's *Municipal Code*.

The San Diego Association of Governments (SANDAG) proposes to construct the Carlton Oaks Golf Course Segment of the San Diego River Trail (SDRT) within the cities of San Diego and Santee (the proposed project). The proposed project would consist of a Class I bikeway for the exclusive use of people walking and riding bikes and related physical improvements. It would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course (see the Vicinity Map).



Vicinity Map

Specifically, the proposed project would extend westward from the Mast Park parking lot, under the Carlton Hills Boulevard bridge, and along the existing dirt trail that continues westward for approximately 0.5 mile through Mast Park West and terminates at the Carlton Oaks Golf Course. West of the terminus of the existing dirt trail, the proposed project would generally be constructed on or adjacent to the existing berm along the southern edge of the golf course for a distance of approximately 1.5 miles before its terminus at the existing sidewalk along West Hills Parkway. In general, the proposed project would include a 10-foot-wide paved bike path with 2-foot-wide decomposed granite shoulders. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek. Additional physical improvements could include installation of fencing, pedestrian-scaled lighting for safety, ~~rock~~ slope protection in slope areas south of the existing berm in which erosion is evident, removal and replacement of

low flow drainage crossings along Mast Park West, revegetation of slopes, restoration of disturbed areas within the golf course, and other minor improvements.

Construction of the project is estimated to begin in late 2018 and take approximately 12 months to complete. Construction staging is anticipated to occur within the golf course and will avoid sensitive biological resources. Access during construction could be provided from West Hills Parkway; an existing dirt road within a utility easement along the eastern boundary of the golf course accessible from Carlton Oaks Drive; and/or from the parking lot at Mast Park, which could require excavation under the Carlton Hills Boulevard bridge to provide adequate vertical clearance for construction equipment, and along the existing dirt trail in Mast Park West. Some construction access points would require a temporary construction easement or other permission/agreement from property owners before use for construction access.

The San Diego River floodplain and floodway are located within much of the site (see the HEC-RAS Work Map). The Flood Insurance Rate Maps (FIRM) encompassing the project site are Map No.'s 06073C01634G, 06073C01651G, and 06073C1653G dated May 16, 2012. The FIRMs delineate the 100-year floodplain as a Zone AE floodplain, which indicates that it is based on a detailed engineering analysis. Since a portion of the project will encroach and fill into the FEMA floodway, the project is required to avoid increasing the 100-year water surface elevations or a set of conditions must be met. This report contains the pre- (existing condition) and post-project (proposed condition) hydraulic analyses based on the 30 percent improvement plans prepared by Nasland Engineering including the existing berm and proposed berm widening. Low flow drainage improvements will be inundated in a 100-year event and, therefore, are not included in this analysis.

HYDRAULIC ANALYSES

The existing and proposed condition HEC-RAS analyses extend from FEMA effective cross-section 230 (just downstream of State Route 52) at the downstream end to FEMA effective cross-section 360 (just upstream of Carlton Hills Boulevard) at the upstream end. Both HEC-RAS analyses tie into the 100-year water surface elevation (307.25 ~~301.52~~ feet NGVD 29) at station 230 from BSI Consultants, Inc.'s July 1992, *San Diego River Flood Study*, which is based on the city of Santee's *Municipal Code* (Chapter 15.52) flow rates ~~the effective HEC-2~~. The 100-year flow rates of 36,000 to 38,000 cubic feet per second (cfs) from the effective results ~~was used~~ were not used. ~~The flow rate is 38,000 cfs from cross-section 230 to 260, 37,000 cfs from cross-section 270 to 320, and 36,000 cfs from cross-section 330 to 360.~~ The 100-year *Municipal Code* flow rates are 50,000 cfs from cross-section 230 to 260, 49,000 cfs from cross-section 270 to 310, and 48,000 cfs from cross-section 318 to 360.

The existing condition cross-sections were primarily created from the 1-foot contour interval topographic mapping (NGVD 29 vertical datum) flown for the project on May 10, 2016 (see the HEC-RAS Work Map in the map pocket). The topographic mapping was supplemented with 2014 2-foot contour interval mapping from SANDAG, where needed. The SANDAG mapping is on NAVD 88 datum, so the elevations were reduced by 2.04 feet to convert to NGVD 29 (the analyses were performed on NGVD 29). The cross-section locations are identical to the effective

cross-section locations. The proposed condition cross-sections were based on the existing condition cross-sections, but modified to reflect the bike trail grading from Nasland Engineering's CAD files.

The existing and proposed condition roughness coefficients were assigned based on a review of aerial photographs. The golf course area was assigned a roughness value of n=0.040. The densely-vegetated river channel was assigned a roughness of n=0.10. The remaining areas with moderate vegetation were assigned a roughness of n=0.050.

The existing and proposed condition 100-year HEC-RAS results are included in Appendix A and summarized in Table 1. The table shows that the project will cause a slight increase in the 100-year water surface elevations.

Cross-Section	100-Year Water Surface Elevations, feet		
	Existing Conditions	Proposed Conditions	Difference (Prop. – Exist.)
360	328.97	328.99	0.02
359	328.08	328.11	0.03
357	327.79	327.82	0.03
355	327.51	327.54	0.03
345	327.13	327.17	0.04
340	326.64	326.68	0.04
330	324.95	324.98	0.03
325	321.6	321.62	0.02
320	320.16	320.18	0.02
318	320.01	320.03	0.02
310	319.36	319.37	0.01
300	318.06	318.08	0.02
290	316.85	316.89	0.04
285	316.22	316.26	0.04
280	315.84	315.89	0.05
270	314.40	314.44	0.04
260	311.06	311.09	0.03
250	310.24	310.26	0.02
245	309.56	309.56	0.00
244	308.77	308.77	0.00
239	307.93	307.93	0.00
230	307.25	307.25	0.00

Table 1. Summary of 100-Year HEC-RAS Results

CONCLUSION

Existing and proposed condition 100-year hydraulic analyses have been performed for the San Diego River Trail, Carlton Oaks Golf Course Segment project along the San Diego River in the

city of Santee, California. A floodplain and floodway have been delineated along the river by FEMA. Since the project will encroach within the floodway, the regulations require that with a rise in the 100-year water surface elevations the conditions in the attached Section 65.12 from the *Code of Federal Regulations* must be met including a remapping of the FEMA floodway. The analyses show a maximum rise of 0.05 feet, so the existing and proposed floodplains will not have significant differences. In addition, the floodway delineations between existing and proposed conditions will also be similar.

(b)(1) through (7) of this section must be certified by a registered professional engineer. Also, certified as-built plans of the levee must be submitted. Certifications are subject to the definition given at §65.2 of this subchapter. In lieu of these structural requirements, a Federal agency with responsibility for levee design may certify that the levee has been adequately designed and constructed to provide protection against the base flood.

[51 FR 30316, Aug. 25, 1986]

§65.11 Evaluation of sand dunes in mapping coastal flood hazard areas.

(a) *General conditions.* For purposes of the NFIP, FEMA will consider storm-induced dune erosion potential in its determination of coastal flood hazards and risk mapping efforts. The criterion to be used in the evaluation of dune erosion will apply to primary frontal dunes as defined in §59.1, but does not apply to artificially designed and constructed dunes that are not well-established with long-standing vegetative cover, such as the placement of sand materials in a dune-like formation.

(b) *Evaluation criterion.* Primary frontal dunes will not be considered as effective barriers to base flood storm surges and associated wave action where the cross-sectional area of the primary frontal dune, as measured perpendicular to the shoreline and above the 100-year stillwater flood elevation and seaward of the dune crest, is equal to, or less than, 540 square feet.

(c) *Exceptions.* Exceptions to the evaluation criterion may be granted where it can be demonstrated through authoritative historical documentation that the primary frontal dunes at a specific site withstood previous base flood storm surges and associated wave action.

[53 FR 16279, May 6, 1988]

§65.12 Revision of flood insurance rate maps to reflect base flood elevations caused by proposed encroachments.

(a) When a community proposes to permit encroachments upon the flood plain when a regulatory floodway has not been adopted or to permit encroachments upon an adopted regulatory floodway which will cause base flood elevation increases in excess of those permitted under paragraphs (c)(10) or (d)(3) of §60.3 of this subchapter, the community shall apply to the Administrator for conditional approval of such action prior to permitting the encroachments to occur and shall submit the following as part of its application:

(1) A request for conditional approval of map change and the appropriate initial fee as specified by §72.3 of this subchapter or a request for exemption from fees as specified by §72.5 of this subchapter, whichever is appropriate;

(2) An evaluation of alternatives which would not result in a base flood elevation increase above that permitted under paragraphs (c)(10) or (d)(3) of §60.3 of this subchapter demonstrating why these alternatives are not feasible;

(3) Documentation of individual legal notice to all impacted property owners within and outside of the community, explaining the impact of the proposed action on their property.

(4) Concurrence of the Chief Executive Officer of any other communities impacted by the proposed actions;

(5) Certification that no structures are located in areas which would be impacted by the increased base flood elevation;

(6) A request for revision of base flood elevation determination according to the provisions of §65.6 of this part;

(7) A request for floodway revision in accordance with the provisions of §65.7 of this part;

(b) Upon receipt of the Administrator's conditional approval of map change and prior to approving the proposed encroachments, a community shall provide evidence to the Administrator of the adoption of flood plain management ordinances incorporating the increased base flood elevations and/or revised floodway reflecting the post-project condition.

(c) Upon completion of the proposed encroachments, a community shall provide as-built certifications in accordance with the provisions of §65.3 of this part. The Administrator will initiate a final map revision upon receipt

of such certifications in accordance with part 67 of this subchapter.

[53 FR 16279, May 6, 1988]

§ 65.13 Mapping and map revisions for areas subject to alluvial fan flooding.

This section describes the procedures to be followed and the types of information FEMA needs to recognize on a NFIP map that a structural flood control measure provides protection from the base flood in an area subject to alluvial fan flooding. This information must be supplied to FEMA by the community or other party seeking recognition of such a flood control measure at the time a flood risk study or restudy is conducted, when a map revision under the provisions of part 65 of this subchapter is sought, and upon request by the Administrator during the review of previously recognized flood control measures. The FEMA review will be for the sole purpose of establishing appropriate risk zone determinations for NFIP maps and shall not constitute a determination by FEMA as to how the flood control measure will perform in a flood event.

(a) The applicable provisions of §§ 65.2, 65.3, 65.4, 65.6, 65.8 and 65.10 shall also apply to FIRM revisions involving alluvial fan flooding.

(b) The provisions of § 65.5 regarding map revisions based on fill and the provisions of part 70 of this chapter shall not apply to FIRM revisions involving alluvial fan flooding. In general, elevations of a parcel of land or a structure by fill or other means, will not serve as a basis for removing areas subject to alluvial fan flooding from an area of special food hazards.

(c) FEMA will credit on NFIP maps only major structural flood control measures whose design and construction are supported by sound engineering analyses which demonstrate that the measures will effectively eliminate alluvial fan flood hazards from the area protected by such measures. The provided analyses must include, but are not necessarily limited to, the following:

(1) Engineering analyses that quantify the discharges and volumes of water, debris, and sediment movement associated with the flood that has a one-percent probability of being exceeded in any year at the apex under current watershed conditions and under potential adverse conditions (e.g., deforestation of the watershed by fire). The potential for debris flow and sediment movement must be assessed using an engineering method acceptable to FEMA. The assessment should consider the characteristics and availability of sediment in the drainage basin above the apex and on the alluvial fan.

(2) Engineering analyses showing that the measures will accommodate the estimated peak discharges and volumes of water, debris, and sediment, as determined in accordance with paragraph (c)(1) of this section, and will withstand the associated hydrodynamic and hydrostatic forces.

(3) Engineering analyses showing that the measures have been designed to withstand the potential erosion and scour associated with estimated discharges.

(4) Engineering analyses or evidence showing that the measures will provide protection from hazards associated with the possible relocation of flow paths from other parts of the fan.

(5) Engineering analyses that assess the effect of the project on flood hazards, including depth and velocity of floodwaters and scour and sediment deposition, on other areas of the fan.

(6) Engineering analyses demonstrating that flooding from scources other than the fan apex, including local runoff, is either insignificant or has been accounted for in the design.

(d) *Coordination.* FEMA will recognize measures that are adequately designed and constructed, provided that: evidence is submitted to show that the impact of the measures on flood hazards in all areas of the fan (including those not protected by the flood control measures), and the design and maintenance requirements of the measures, were reviewed and approved by the impacted communities, and also by State and local agencies that have jurisdiction over flood control activities.

(e) *Operation and maintenance plans and criteria.* The requirements for operation and maintenance of flood control measures on areas subject to alluvial

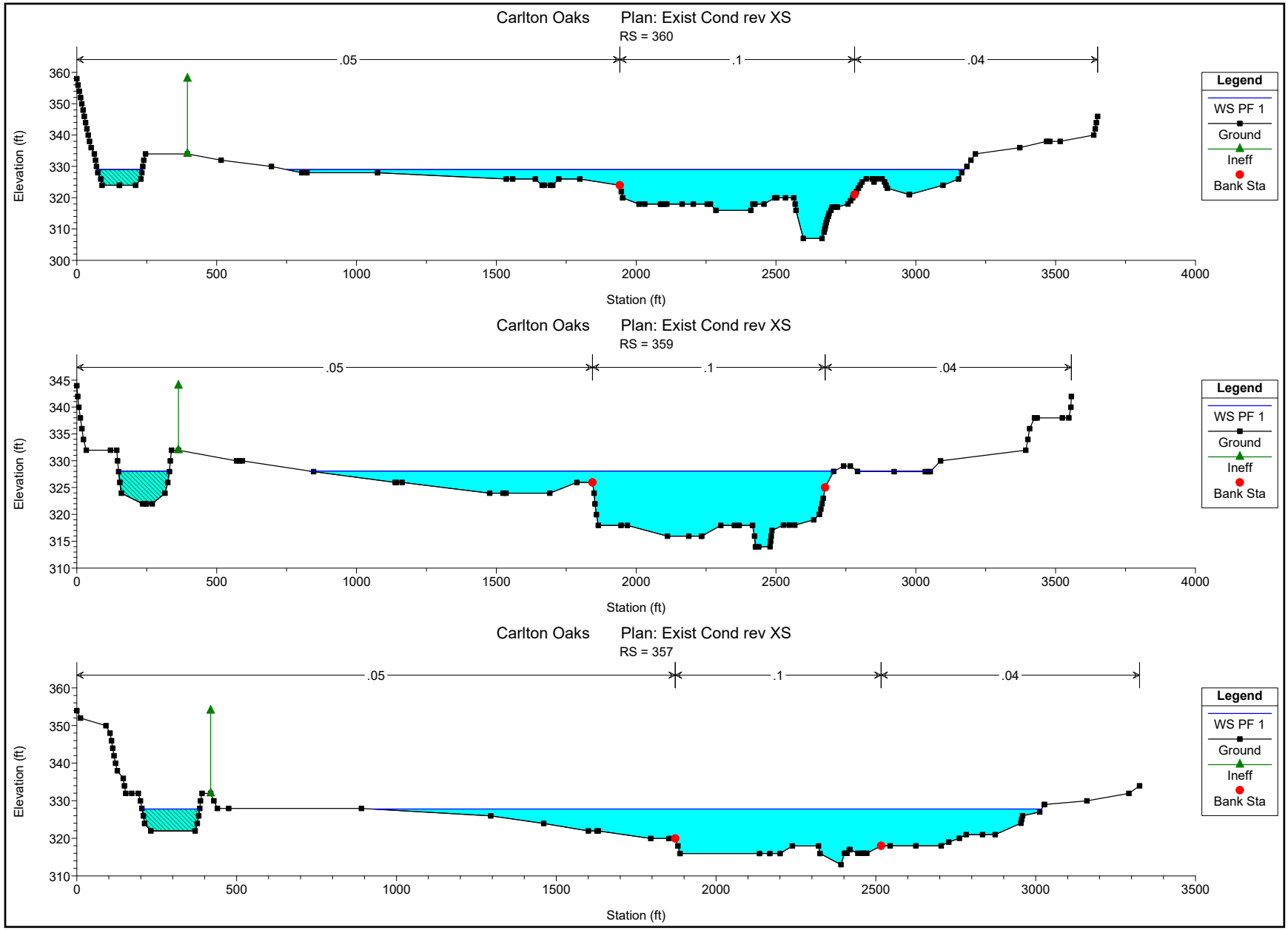
APPENDIX A

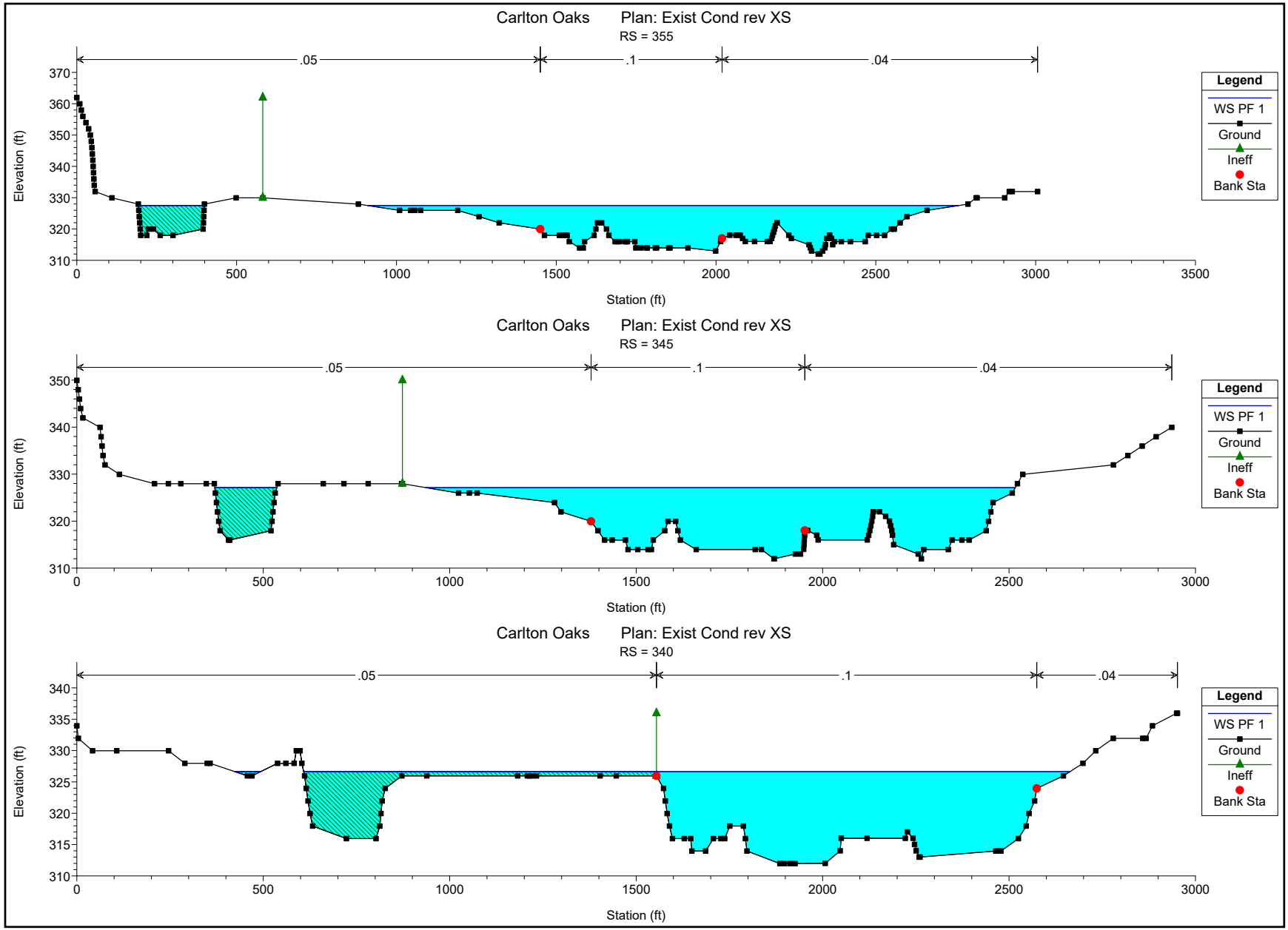
EXISTING CONDITION AND PROPOSED CONDITION HEC-RAS ANALYSES

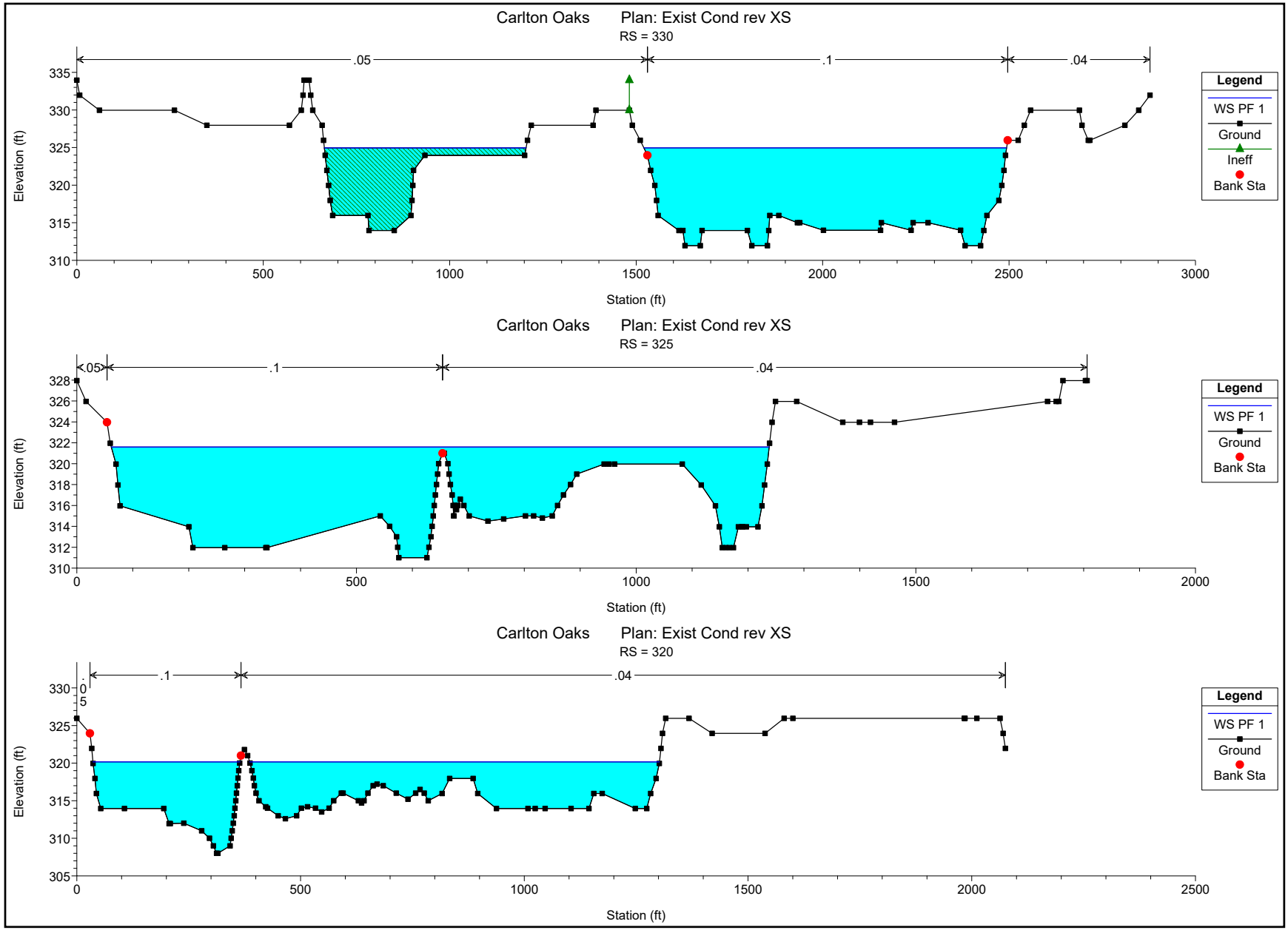
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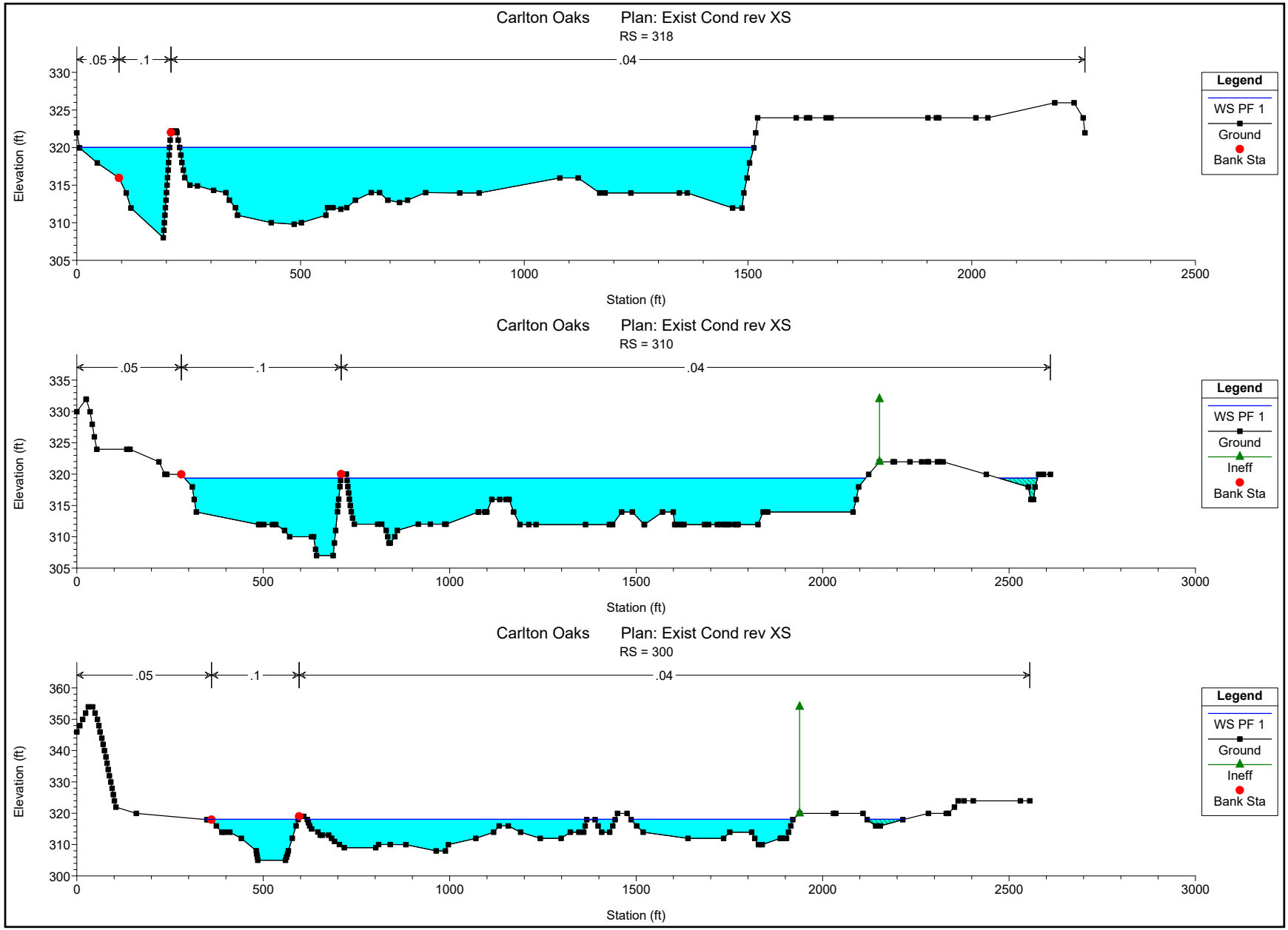
HEC-RAS Plan: EC Rev XS River: RIVER-1 Reach: Reach-1 Profile: PF 1

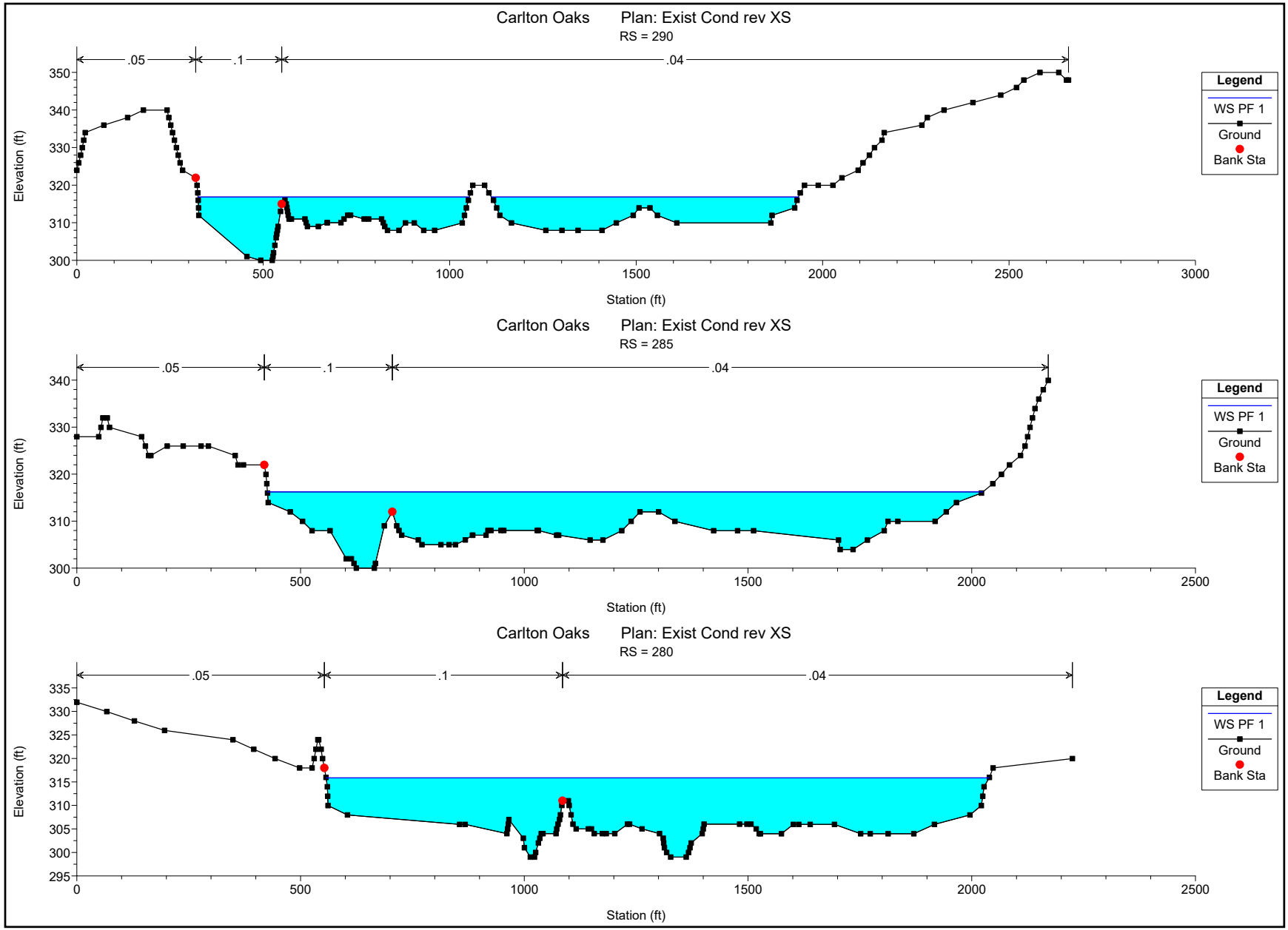
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	360	PF 1	48000.00	307.00	328.97		329.15	0.001639	3.20	15114.62	2585.32	0.16
Reach-1	359	PF 1	48000.00	313.96	328.08		328.35	0.003662	4.35	11636.70	2323.46	0.23
Reach-1	357	PF 1	48000.00	313.00	327.79		328.02	0.001364	2.80	14438.37	2274.75	0.15
Reach-1	355	PF 1	48000.00	313.00	327.51		327.74	0.000921	2.34	14642.12	2055.22	0.12
Reach-1	345	PF 1	48000.00	312.00	327.13		327.42	0.000938	2.42	13760.89	1747.82	0.12
Reach-1	340	PF 1	48000.00	311.96	326.64		326.88	0.002727	3.99	12077.74	2125.01	0.21
Reach-1	330	PF 1	48000.00	311.96	324.95		325.30	0.004537	4.77	10073.85	1513.62	0.26
Reach-1	325	PF 1	48000.00	311.00	321.60		322.39	0.007493	5.14	7435.02	1176.27	0.32
Reach-1	320	PF 1	48000.00	308.00	320.16		321.02	0.005447	4.17	7126.58	1244.50	0.27
Reach-1	318	PF 1	48000.00	308.00	320.01		320.44	0.001719	2.50	9555.97	1485.04	0.15
Reach-1	310	PF 1	49000.00	307.00	319.36		319.67	0.001346	2.07	12133.97	1913.70	0.13
Reach-1	300	PF 1	49000.00	305.00	318.06		318.56	0.002458	2.92	9189.34	1614.98	0.18
Reach-1	290	PF 1	49000.00	300.00	316.85		317.16	0.001292	2.75	11532.06	1551.04	0.14
Reach-1	285	PF 1	49000.00	300.00	316.22		316.47	0.000774	1.79	13229.41	1598.92	0.10
Reach-1	280	PF 1	49000.00	299.00	315.84		316.06	0.000496	1.50	15447.25	1481.64	0.08
Reach-1	270	PF 1	49000.00	299.00	314.40		315.07	0.001729	3.08	8471.84	1002.53	0.16
Reach-1	260	PF 1	50000.00	295.00	311.06		312.42	0.004363	4.54	5997.23	680.05	0.25
Reach-1	250	PF 1	50000.00	295.96	310.24		310.57	0.000730	2.14	12595.96	1244.04	0.11
Reach-1	245	PF 1	50000.00	291.96	309.56		309.82	0.001617	3.42	13029.04	1168.98	0.16
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Reach-1	239	PF 1	50000.00	289.96	307.93		308.38	0.002121	3.84	10184.87	1038.49	0.19
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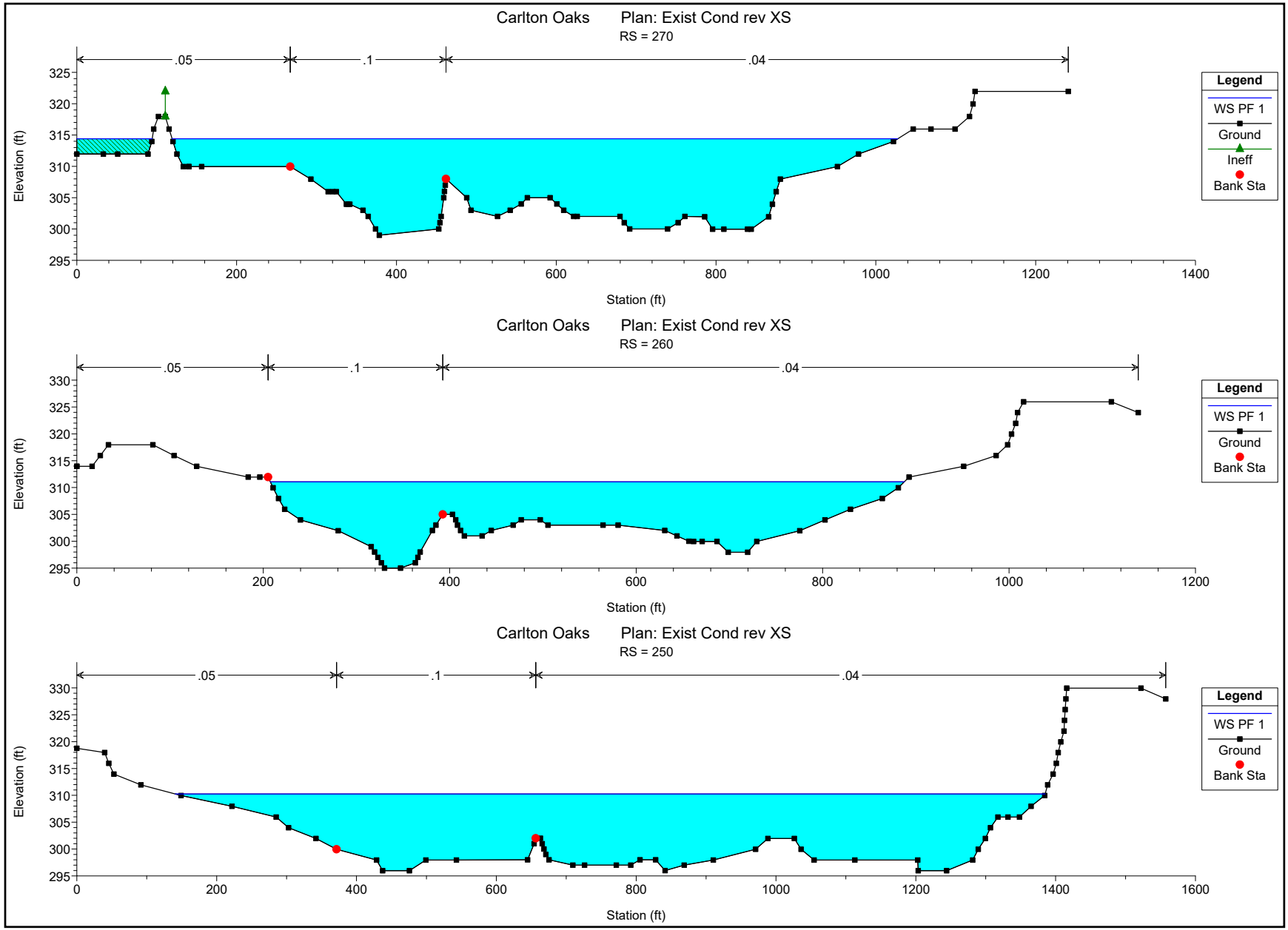

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Bank Sta
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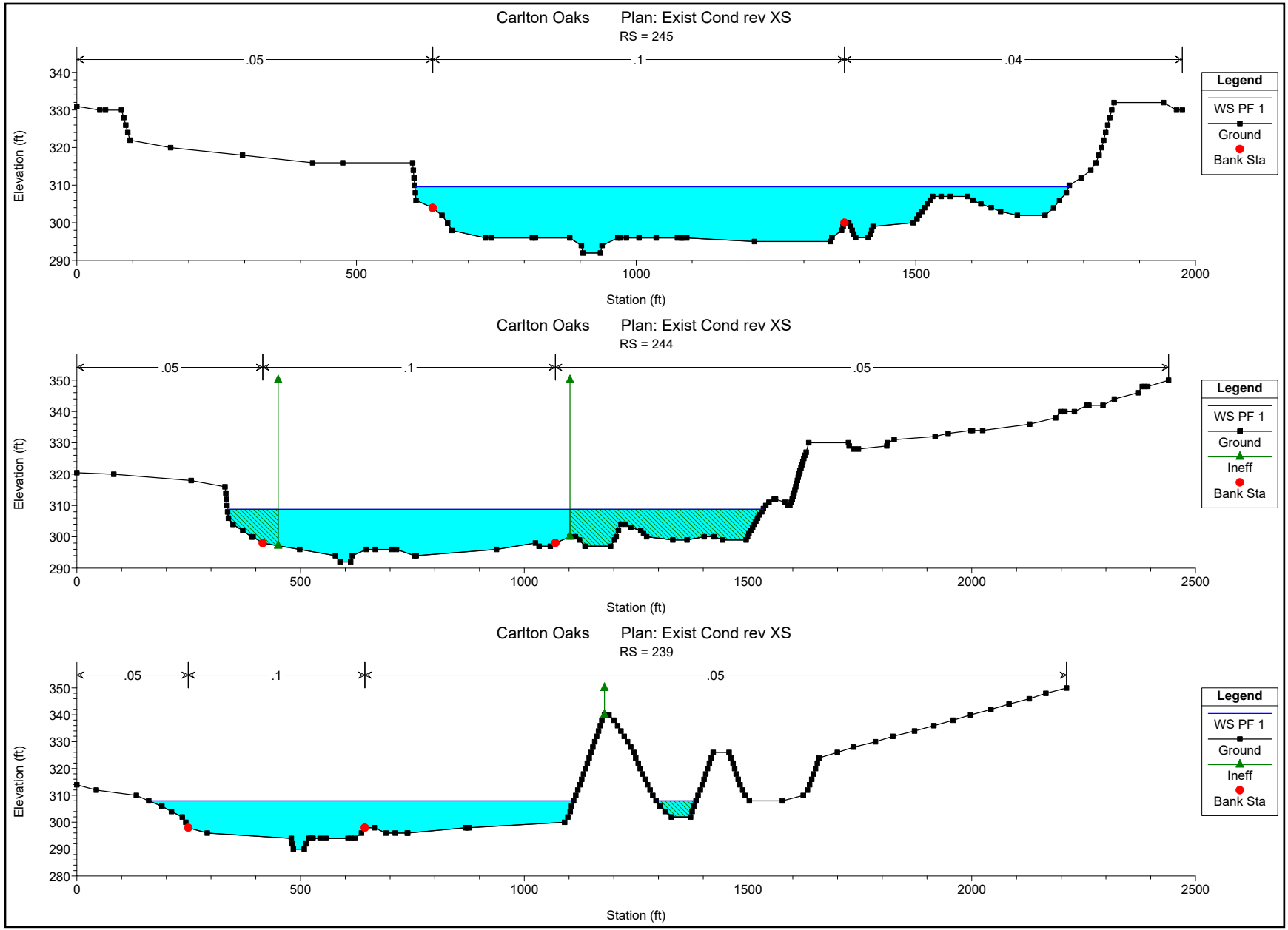

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Ineff
Bank Sta
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Station (ft)
Legend
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Ground
Ineff
Bank Sta

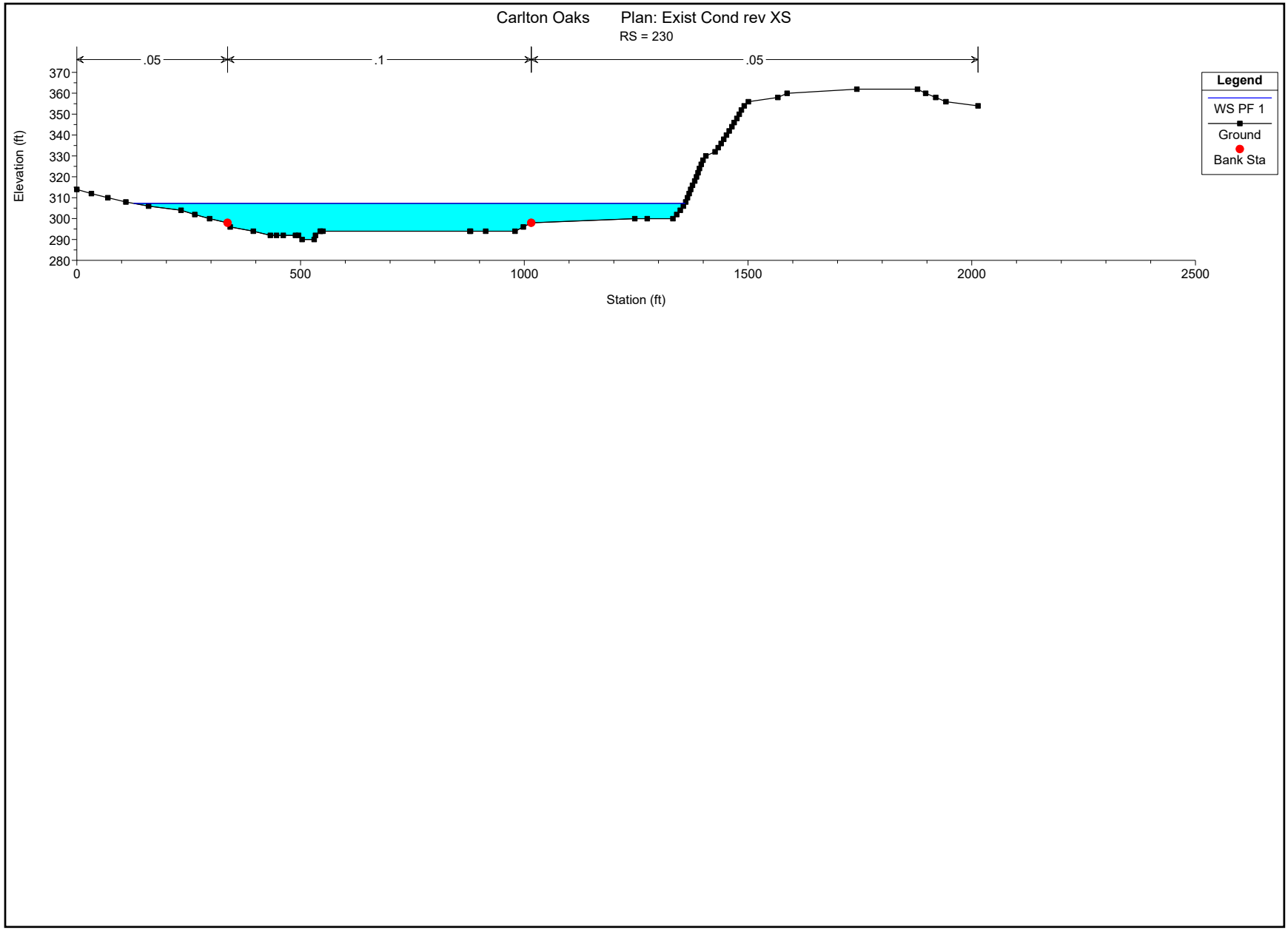

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.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
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.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 320
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


Carlton Oaks Plan: Exist Cond rev XS
RS = 318
.05
.1
.04
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 310
.05
.1
.04
Elevation (ft)
335
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 300
.05
.1
.04
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


Carlton Oaks Plan: Exist Cond rev XS
RS = 290
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 285
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 280
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


Carlton Oaks Plan: Exist Cond rev XS
RS = 270
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 260
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 250
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

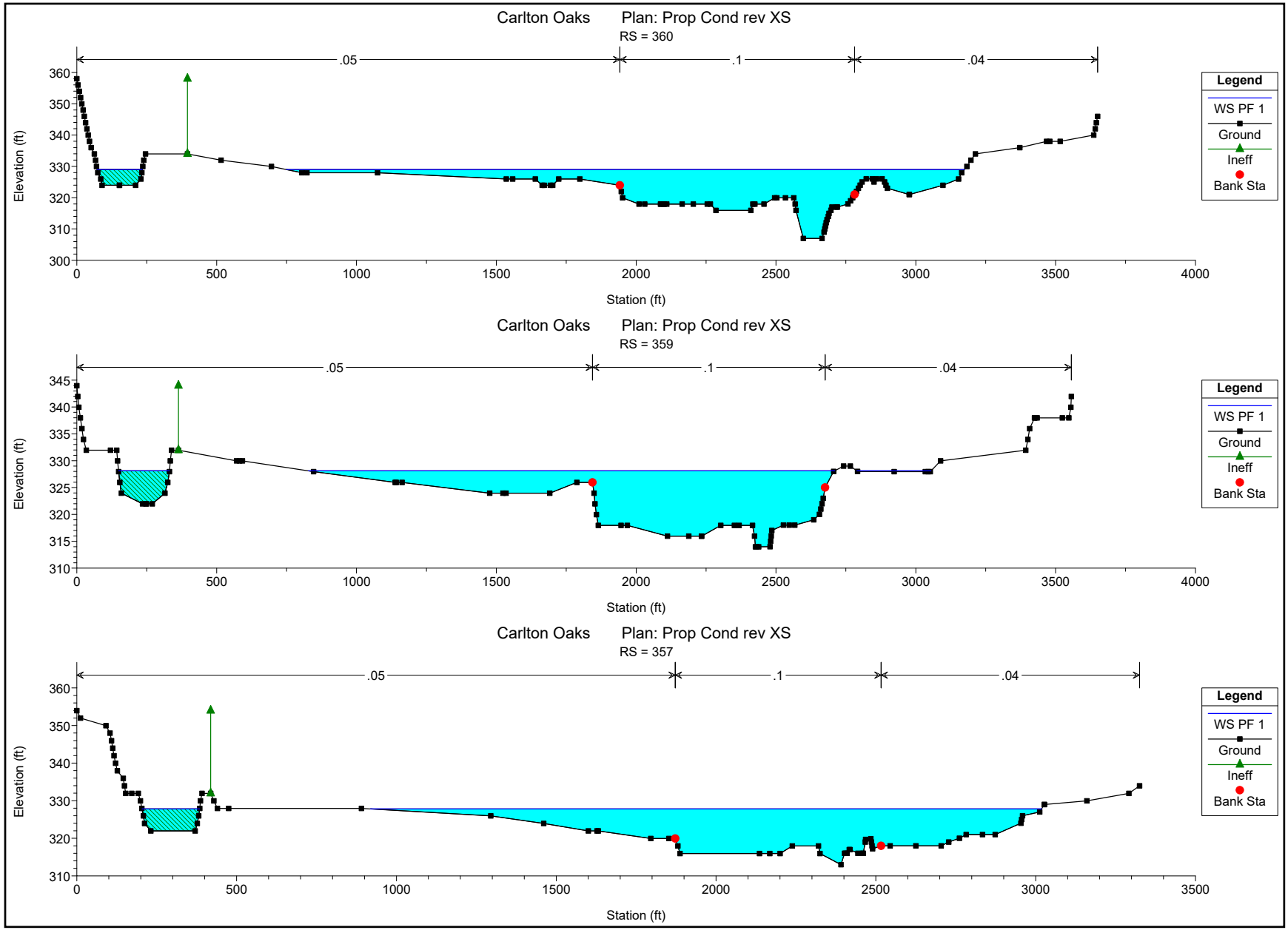

Carlton Oaks Plan: Exist Cond rev XS
RS = 245
.05
.1
.04
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 244
.05
.1
.05
Elevation (ft)
350
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Exist Cond rev XS
RS = 239
.05
.1
.05
Elevation (ft)
350
340
330
320
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280
0
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1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

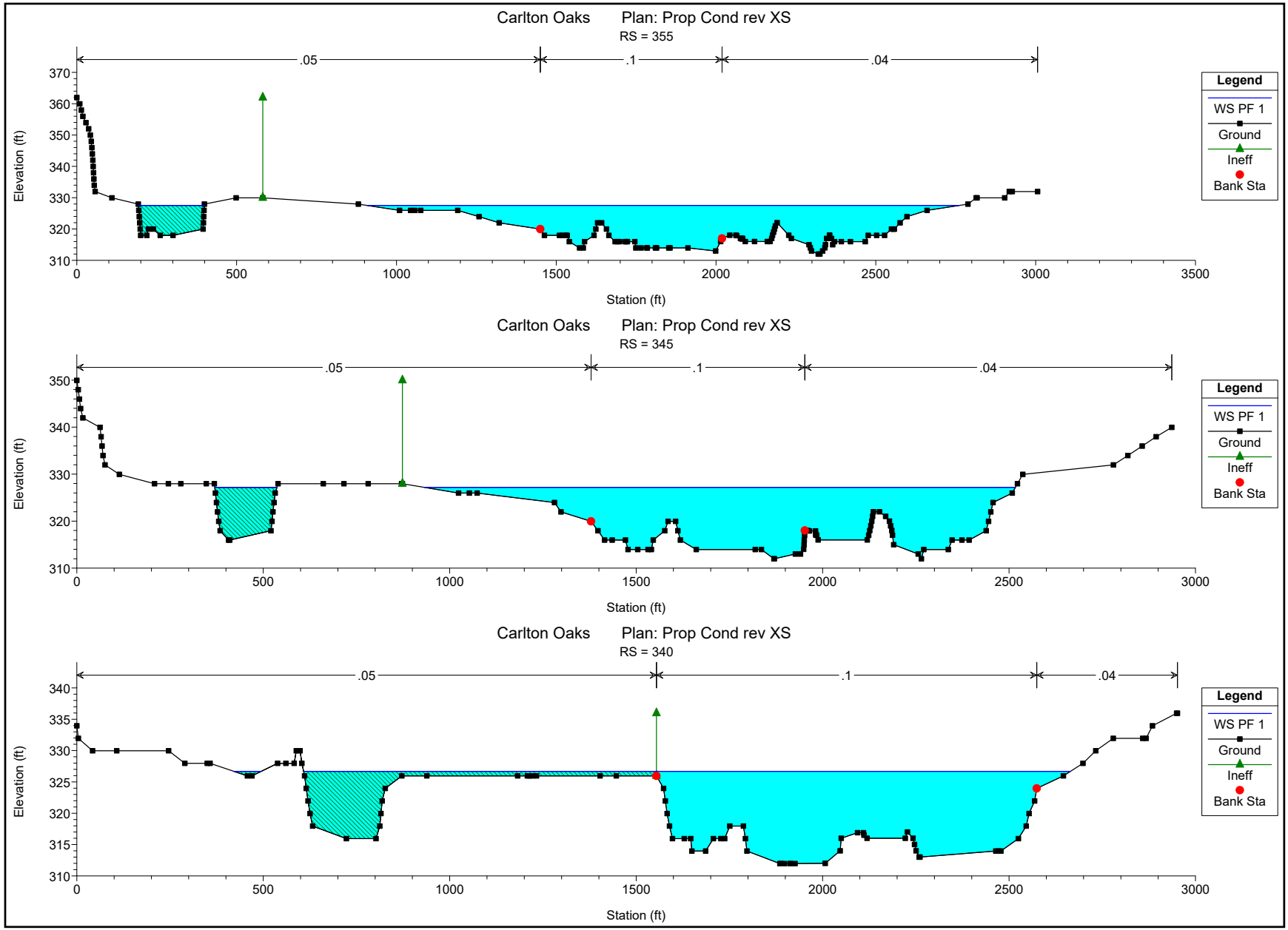

Carlton Oaks
Plan: Exist Cond rev XS
RS = 230
.05
.1
.05
Elevation (ft)
370
360
350
340
330
320
310
300
290
280
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

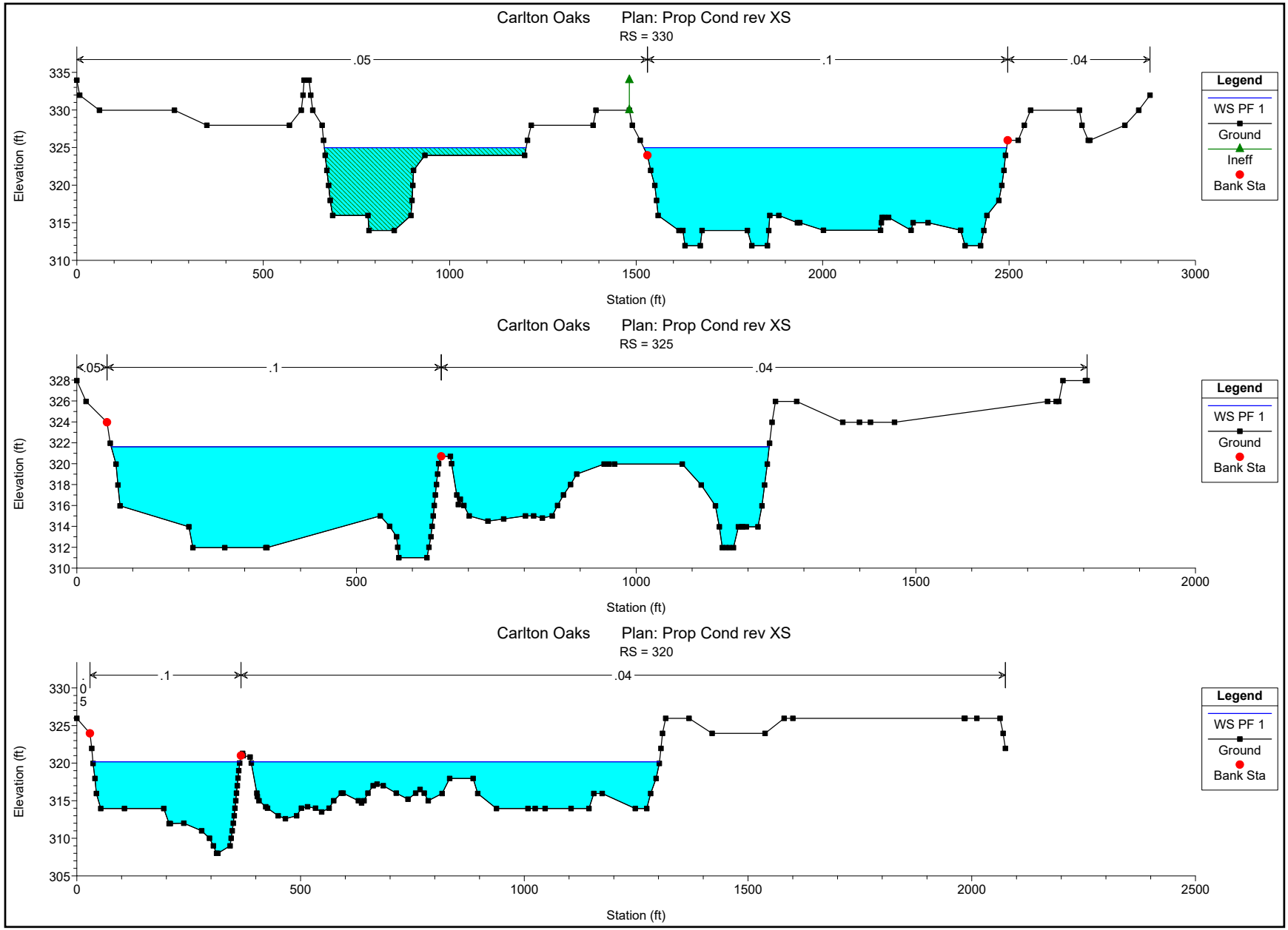
Proposed Condition Analysis

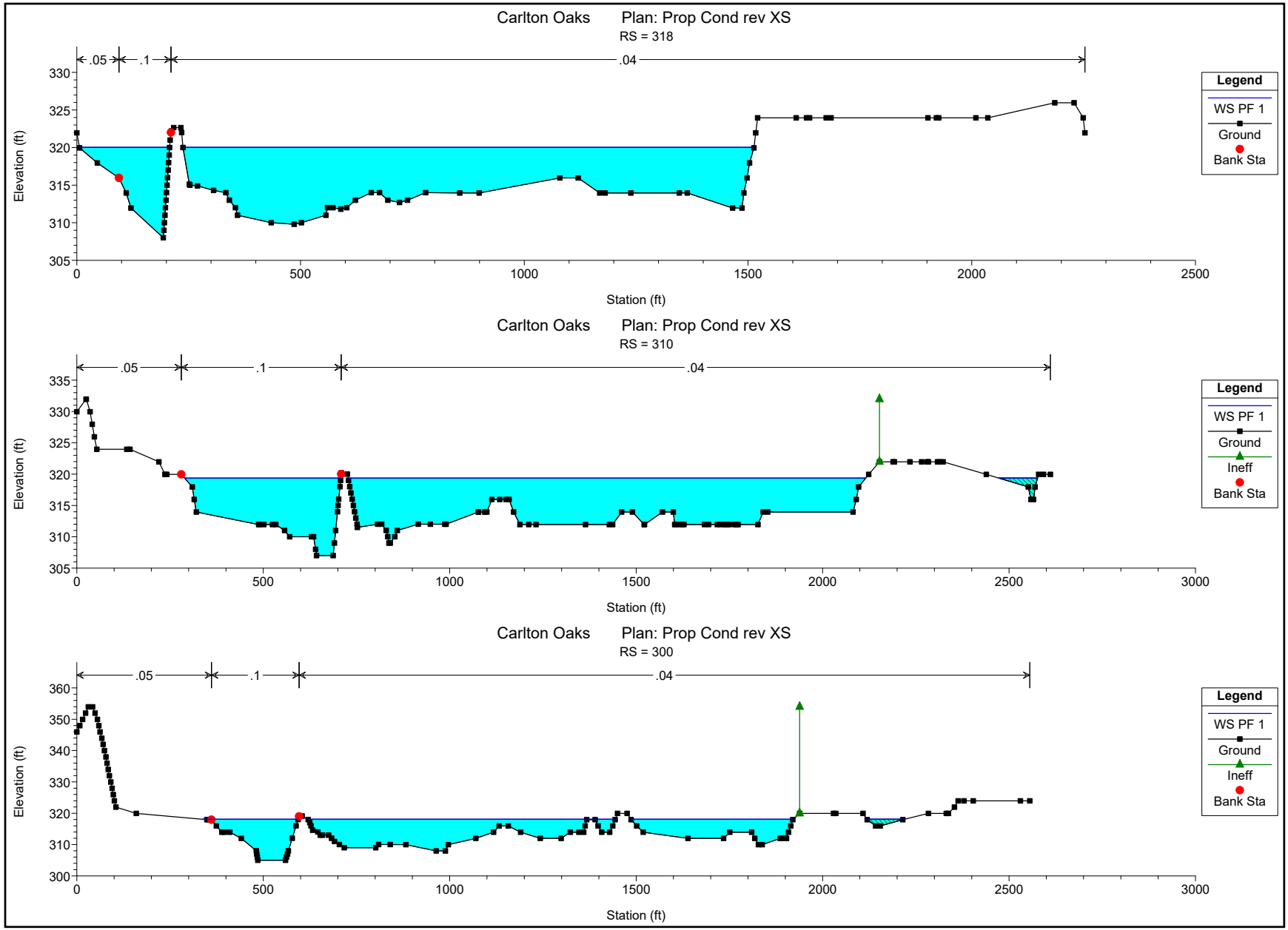
HEC-RAS Plan: PC Rev XS River: RIVER-1 Reach: Reach-1 Profile: PF 1

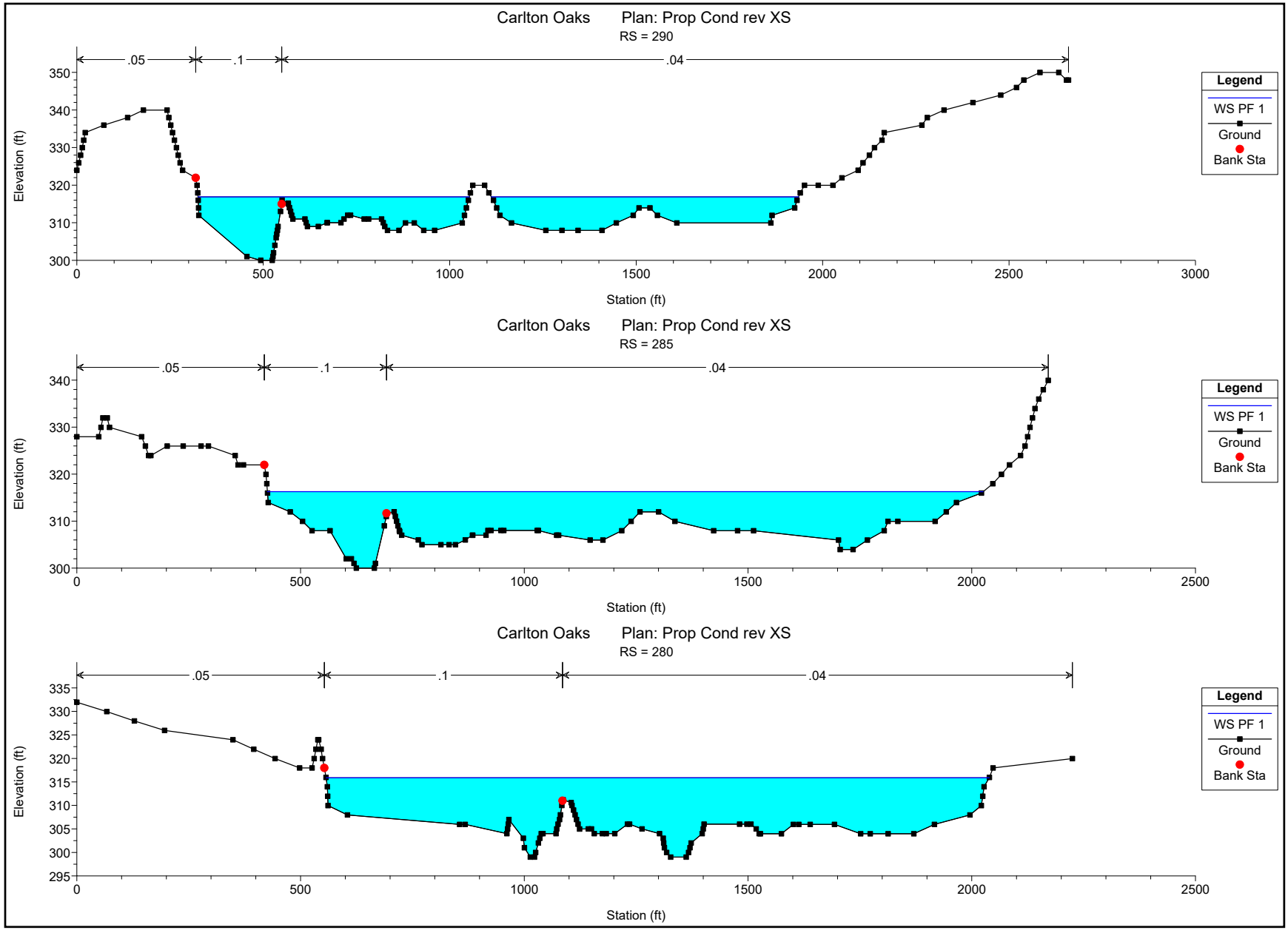
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	360	PF 1	48000.00	307.00	328.99		329.17	0.001624	3.19	15161.24	2586.62	0.16
Reach-1	359	PF 1	48000.00	313.96	328.11		328.38	0.003611	4.33	11699.86	2329.66	0.23
Reach-1	357	PF 1	48000.00	313.00	327.82		328.05	0.001374	2.79	14405.45	2280.26	0.15
Reach-1	355	PF 1	48000.00	313.00	327.54		327.77	0.000909	2.32	14712.74	2059.46	0.12
Reach-1	345	PF 1	48000.00	312.00	327.17		327.45	0.000930	2.41	13810.93	1750.99	0.12
Reach-1	340	PF 1	48000.00	311.96	326.68		326.92	0.002725	3.99	12082.83	2129.34	0.21
Reach-1	330	PF 1	48000.00	311.96	324.98		325.34	0.004554	4.77	10064.24	1514.27	0.26
Reach-1	325	PF 1	48000.00	311.00	321.62		322.41	0.007567	5.19	7421.86	1176.43	0.32
Reach-1	320	PF 1	48000.00	308.00	320.18		321.03	0.005403	4.16	7137.76	1241.46	0.27
Reach-1	318	PF 1	48000.00	308.00	320.03		320.46	0.001715	2.50	9544.74	1477.84	0.15
Reach-1	310	PF 1	49000.00	307.00	319.37		319.68	0.001347	2.07	12127.20	1912.00	0.13
Reach-1	300	PF 1	49000.00	305.00	318.08		318.58	0.002428	2.91	9221.44	1617.61	0.18
Reach-1	290	PF 1	49000.00	300.00	316.89		317.20	0.001286	2.75	11549.92	1551.52	0.14
Reach-1	285	PF 1	49000.00	300.00	316.26		316.51	0.000762	1.80	13272.77	1599.51	0.10
Reach-1	280	PF 1	49000.00	299.00	315.89		316.10	0.000496	1.51	15464.18	1481.96	0.08
Reach-1	270	PF 1	49000.00	299.00	314.44		315.11	0.001752	3.10	8455.96	1003.15	0.16
Reach-1	260	PF 1	50000.00	295.00	311.09		312.44	0.004344	4.54	6006.31	680.30	0.25
Reach-1	250	PF 1	50000.00	295.96	310.26		310.58	0.000741	2.16	12555.23	1244.37	0.11
Reach-1	245	PF 1	50000.00	291.96	309.56		309.82	0.001632	3.43	13029.93	1168.99	0.16
Reach-1	244	PF 1	50000.00	291.96	308.77		309.32	0.004699	5.71	8556.31	1197.06	0.28
Reach-1	239	PF 1	50000.00	289.96	307.93		308.38	0.002121	3.84	10184.87	1038.49	0.19
Reach-1	230	PF 1	50000.00	289.96	307.25	299.46	307.51	0.001902	3.68	12699.05	1231.28	0.18

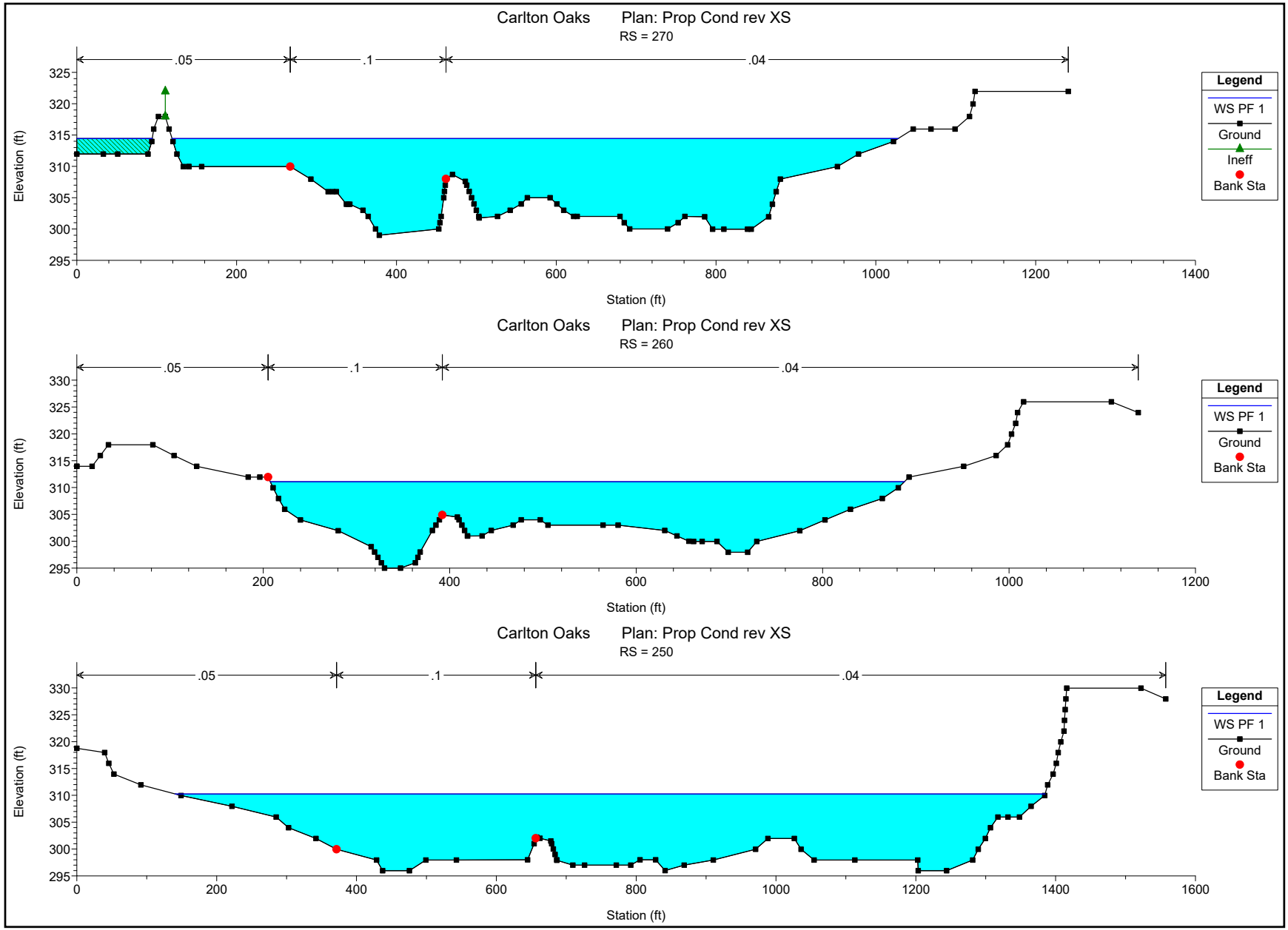

Carlton Oaks Plan: Prop Cond rev XS
RS = 360
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 359
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 357
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

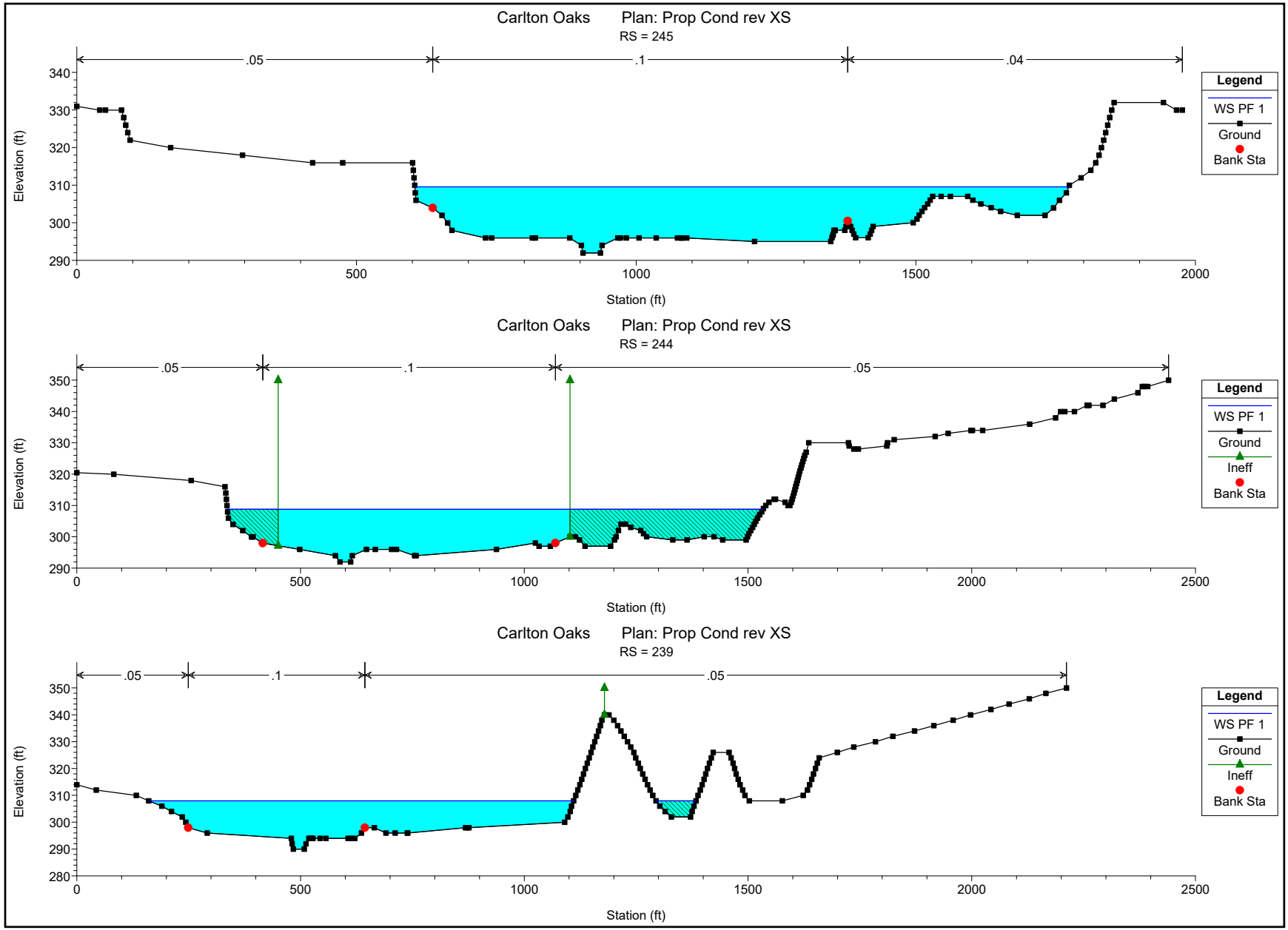

Carlton Oaks Plan: Prop Cond rev XS
RS = 355
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 345
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 340
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta

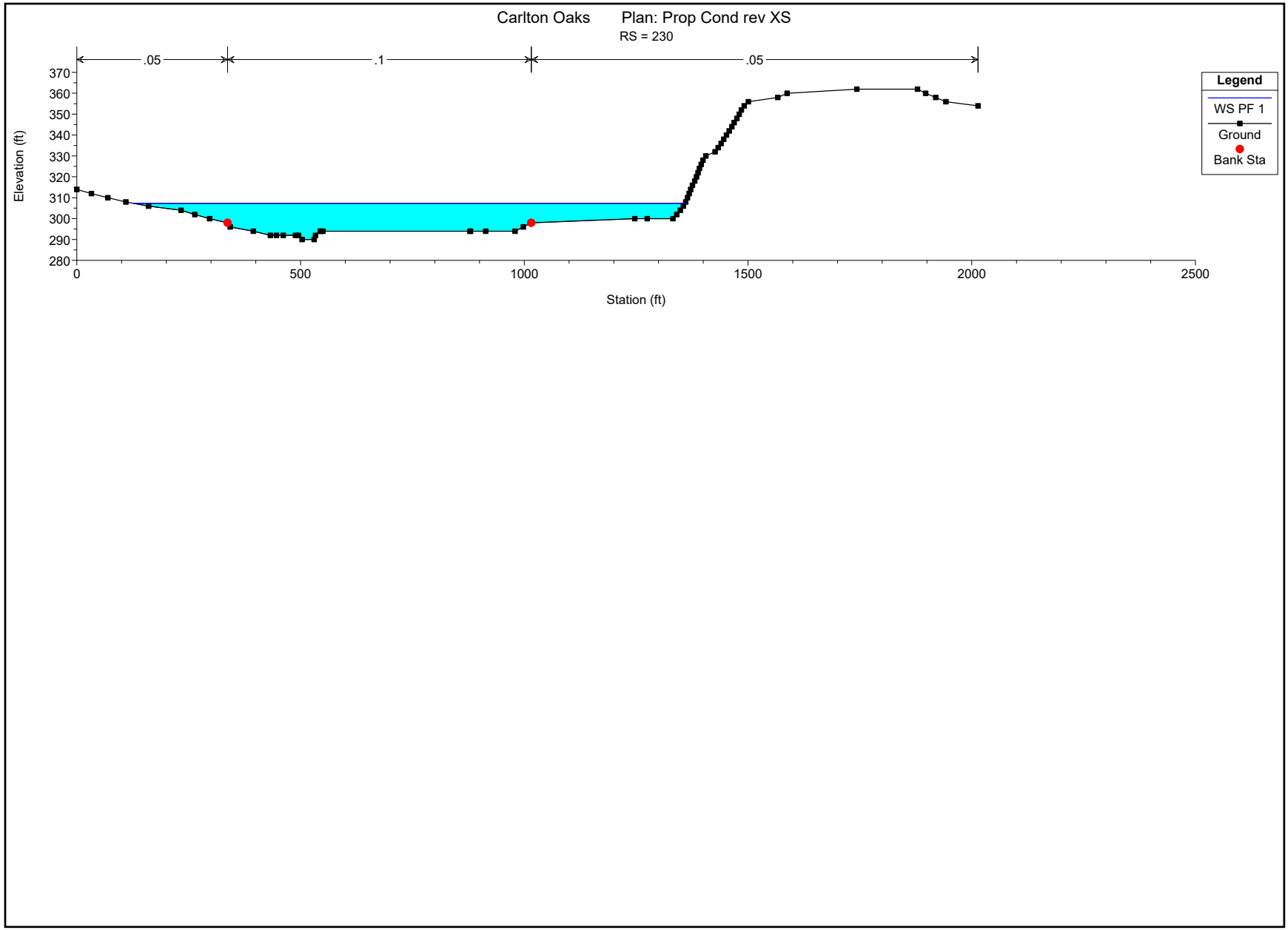

Carlton Oaks Plan: Prop Cond rev XS
RS = 330
.05
.1
.04
Elevation (ft)
335
330
325
320
315
310
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 325
.05
.1
.04
Elevation (ft)
328
326
324
322
320
318
316
314
312
310
0
500
1000
1500
2000
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 320
.1
.04
.05
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


Carlton Oaks Plan: Prop Cond rev XS
RS = 318
.05
.1
.04
Elevation (ft)
330
325
320
315
310
305
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 310
.05
.1
.04
Elevation (ft)
335
330
325
320
315
310
305
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 300
.05
.1
.04
Elevation (ft)
360
350
340
330
320
310
300
0
500
1000
1500
2000
2500
3000
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


Carlton Oaks Plan: Prop Cond rev XS
RS = 290
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 285
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 280
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


Carlton Oaks Plan: Prop Cond rev XS
RS = 270
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 260
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 250
.05
.1
.04
Elevation (ft)
Station (ft)
Legend
WS PF 1
Ground
Bank Sta


Carlton Oaks Plan: Prop Cond rev XS
RS = 245
.05
.1
.04
Elevation (ft)
340
330
320
310
300
290
0
500
1000
1500
2000
Station (ft)
Legend
WS PF 1
Ground
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 244
.05
.1
.05
Elevation (ft)
350
340
330
320
310
300
290
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta
Carlton Oaks Plan: Prop Cond rev XS
RS = 239
.05
.1
.05
Elevation (ft)
350
340
330
320
310
300
290
280
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Ineff
Bank Sta


Carlton Oaks Plan: Prop Cond rev XS
RS = 230
.05
.1
.05
Elevation (ft)
370
360
350
340
330
320
310
300
290
280
0
500
1000
1500
2000
2500
Station (ft)
Legend
WS PF 1
Ground
Bank Sta

GRAPHIC SCALE

300 0 150 300 600

1 INCH = 300 FEET

230 AR

AS 239

242

244 AT

245

250 AU

260 AV

270 AW

280 AX

285

290 AY

300 AZ

310 BA

318

320

325

330 BB

340

345

355

357

359

360

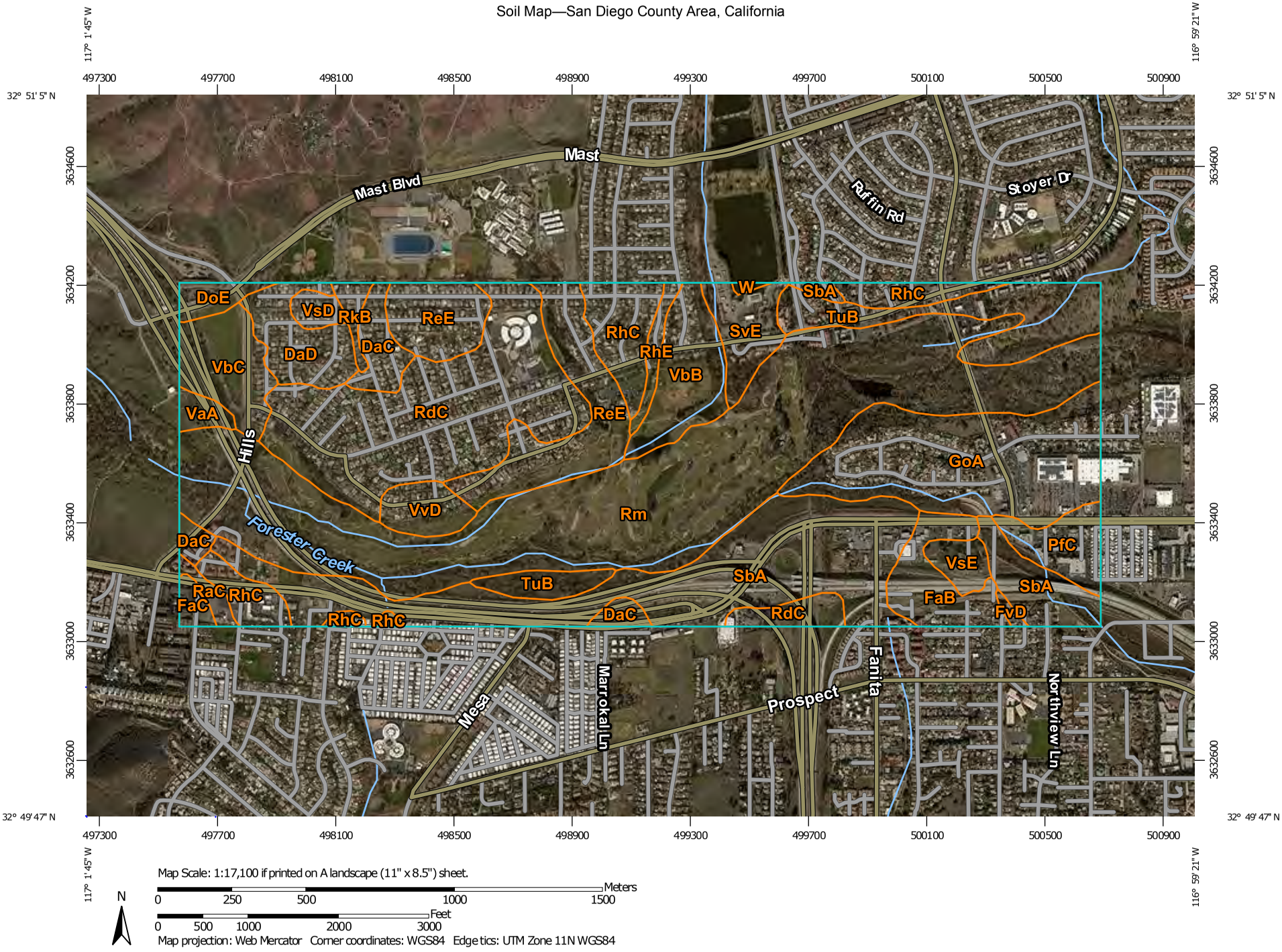
LEGEND:

- HEC-RAS CROSS-SECTION
- PROPOSED TRAIL GRADING
- FEMA 100-YEAR FLOODPLAIN
- FEMA FLOODPWAY

HEC-RAS WORK MAP

APPENDIX E

HYDROLOGY REFERENCES



Map Scale: 1:17,100 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: San Diego County Area, California
Survey Area Data: Version 9, Sep 17, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 7, 2014—Jan 4, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

San Diego County Area, California (CA638)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
DaC	Diablo clay, 2 to 9 percent slopes	17.5	2.0%
DaD	Diablo clay, 9 to 15 percent slopes	21.0	2.3%
DoE	Diablo-Olivenhain complex, 9 to 30 percent slopes	6.4	0.7%
FaB	Fallbrook sandy loam, 2 to 5 percent slopes	21.6	2.4%
FaC	Fallbrook sandy loam, 5 to 9 percent slopes	3.8	0.4%
FvD	Fallbrook-Vista sandy loams, 9 to 15 percent slopes	1.2	0.1%
GoA	Grangeville fine sandy loam, 0 to 2 percent slopes	80.6	9.0%
PfC	Placentia sandy loam, thick surface, 2 to 9 percent slo pes	15.3	1.7%
RaC	Ramona sandy loam, 5 to 9 percent slopes	3.6	0.4%
RdC	Redding gravelly loam, 2 to 9 percent slopes	110.2	12.3%
ReE	Redding cobbly loam, 9 to 30 percent slopes	58.2	6.5%
RhC	Redding-Urban land complex, 2 to 9 percent slopes	39.1	4.4%
RhE	Redding-Urban land complex, 9 to 30 percent slopes	5.2	0.6%
RkB	Reiff fine sandy loam, 2 to 5 percent slopes	4.0	0.4%
Rm	Riverwash	241.2	26.9%
SbA	Salinas clay loam, 0 to 2 percent slopes, warm MAAT, MLRA 19	127.5	14.2%
SvE	Stony land	16.6	1.9%
TuB	Tujunga sand, 0 to 5 percent slopes	43.6	4.9%
VaA	Visalia sandy loam, 0 to 2 percent slopes	4.6	0.5%
VbB	Visalia gravelly sandy loam, 2 to 5 percent slopes	26.9	3.0%
VbC	Visalia gravelly sandy loam, 5 to 9 percent slopes	23.7	2.6%
VsD	Vista coarse sandy loam, 9 to 15 percent slopes	4.7	0.5%

San Diego County Area, California (CA638)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
VsE	Vista coarse sandy loam, 15 to 30 percent slopes	7.3	0.8%
VvD	Vista rocky coarse sandy loam, 5 to 15 percent slopes	11.5	1.3%
W	Water	0.7	0.1%
Totals for Area of Interest		**896.0**	**100.0%**

County of San Diego Hydrology Manual

Rainfall Isopluvials

2 Year Rainfall Event - 6 Hours

---------- Isopluvial (inches)

Orange County

Riverside County

Imperial County

Pacific Ocean

Mexico

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

1.2

117°30' 117°15' 117°00' 116°45' 116°30' 116°15'

33°30' 33°15' 33°00' 32°45' 32°30'

DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
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3 0 3 Miles

County of San Diego Hydrology Manual

Rainfall Isopluvials

2 Year Rainfall Event - 24 Hours

---------- Isopluvial (inches)

Orange County

Riverside County

Imperial County

Pacific Ocean

Mexico

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
1.7
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

117°30' 117°15' 117°00' 116°45' 116°30' 116°15'

33°30' 33°15' 33°00' 32°45' 32°30'

DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
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N
W E
S

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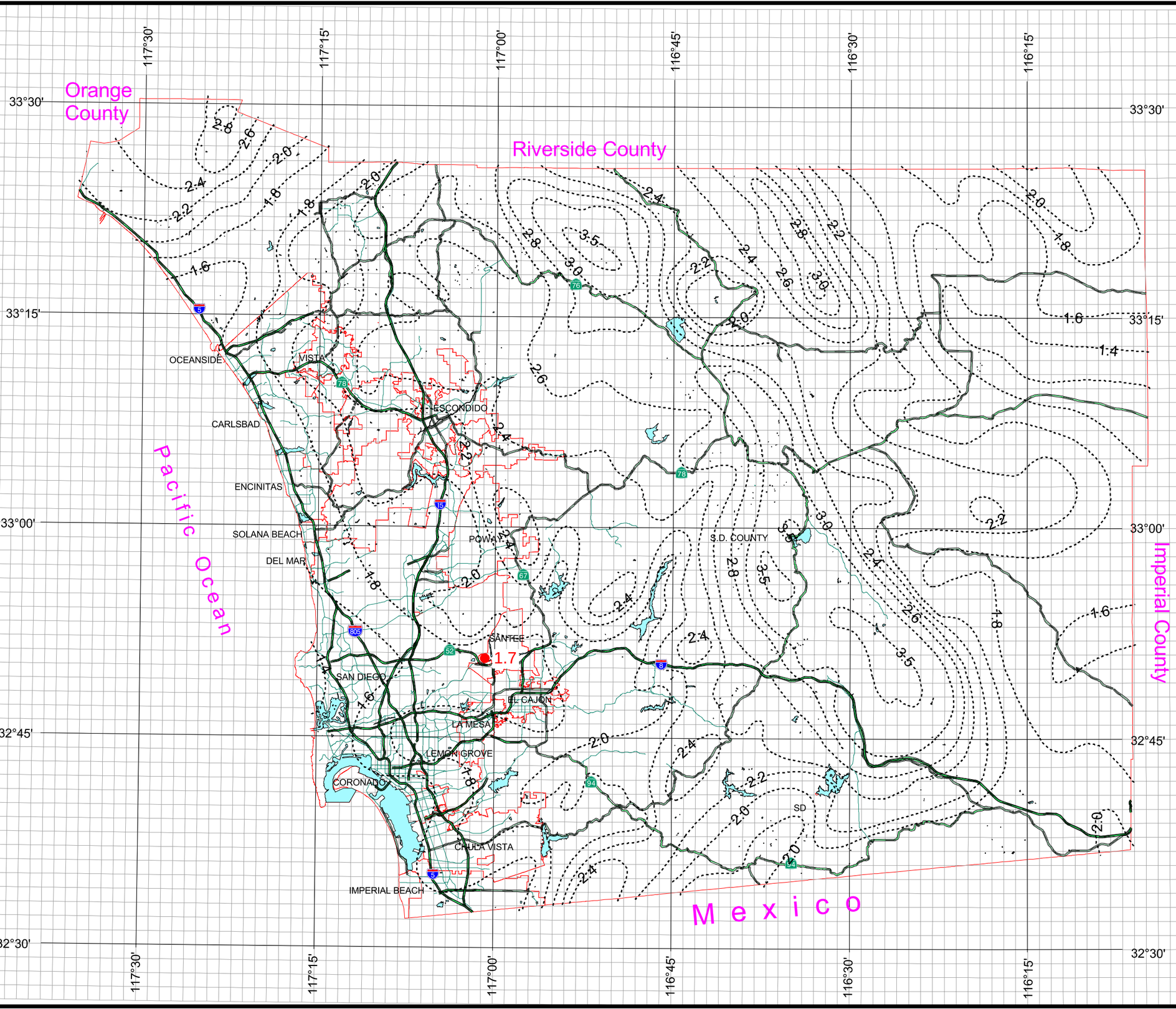
3 0 3 Miles

County of San Diego Hydrology Manual

Rainfall Isopluvials

10 Year Rainfall Event - 6 Hours

Isopluvial (inches)



DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
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N
W E
S

3 0 3 Miles

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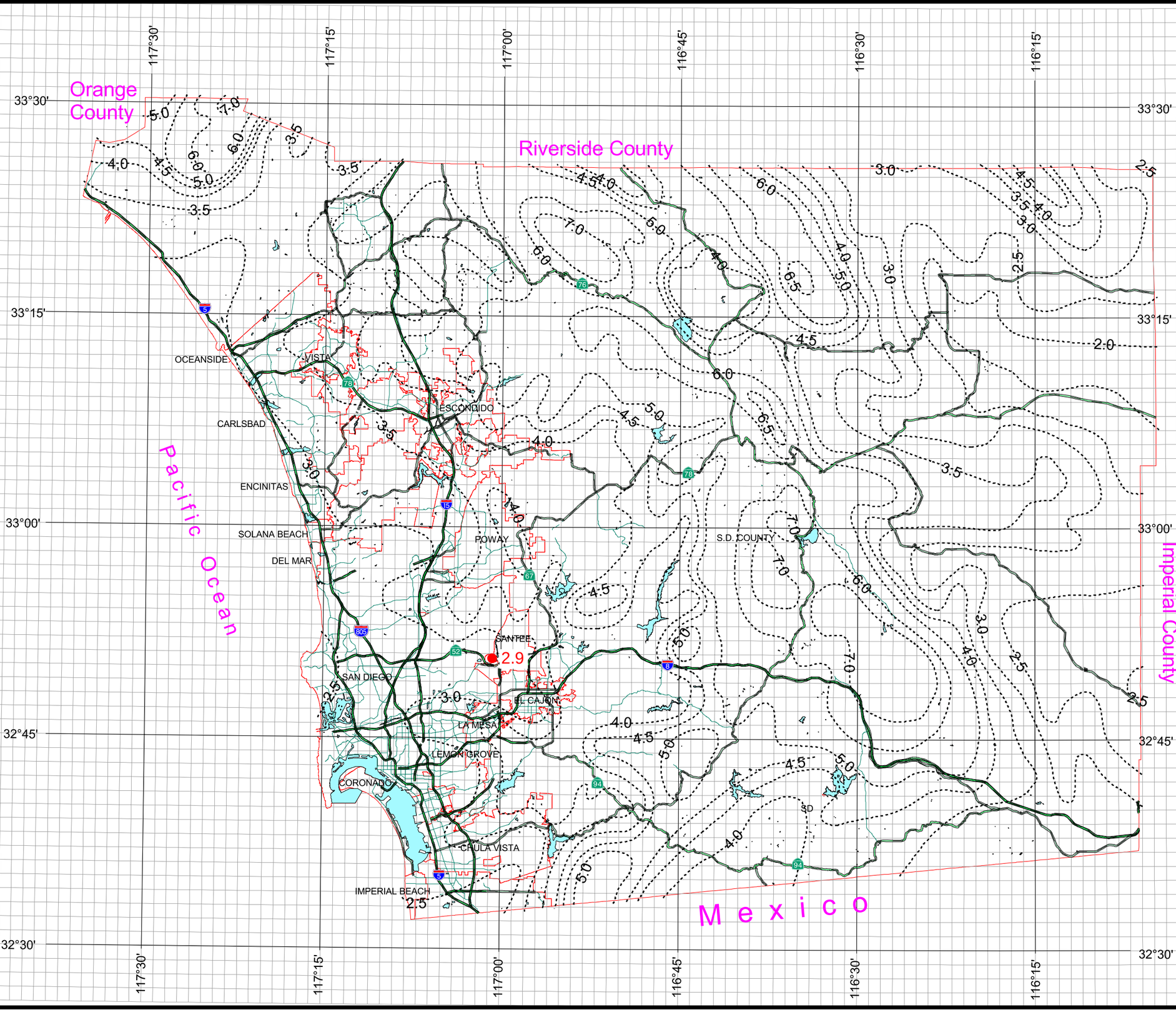
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County of San Diego Hydrology Manual

Rainfall Isopluvials

10 Year Rainfall Event - 24 Hours

Isopluvial (inches)



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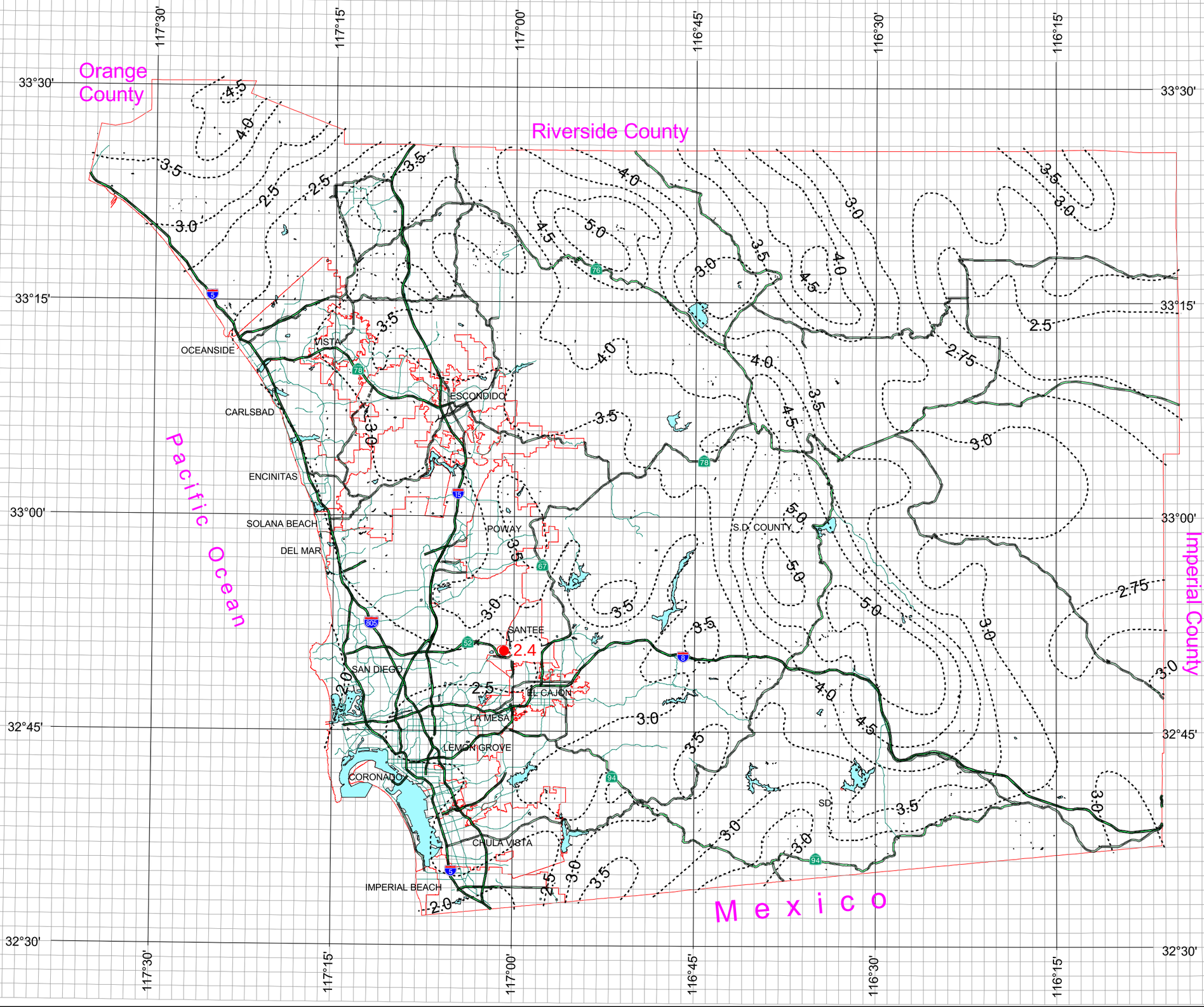
3 0 3 Miles

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 6 Hours

Isopluvial (inches)



DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
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3 0 3 Miles

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County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)

Orange County

Riverside County

Imperial County

Pacific Ocean

Mexico

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
DEL MAR
POWAY
S.D. COUNTY
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
CHULA VISTA
IMPERIAL BEACH
SD

33°30'
33°15'
33°00'
32°45'
32°30'
117°30'
117°15'
117°00'
116°45'
116°30'
116°15'

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Geographic Information Services

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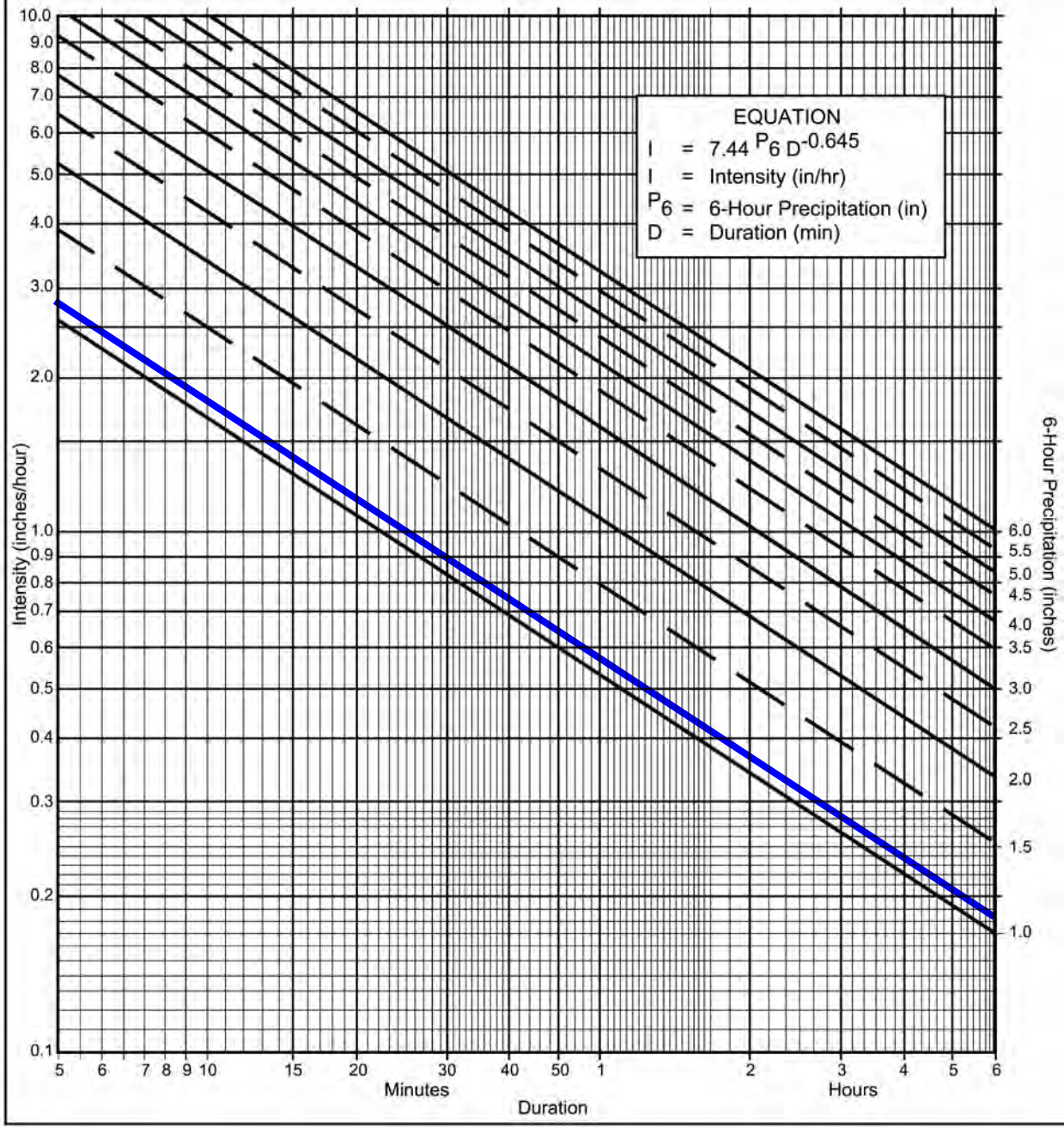
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Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 2 year

(b) P_6 = 1.2 in., P_{24} = 1.7, $\frac{P_6}{P_{24}}$ = 0.70 %(2)

(c) Adjusted $P_6^{(2)}$ = 1.1 in.

(d) t_x = _____ min.

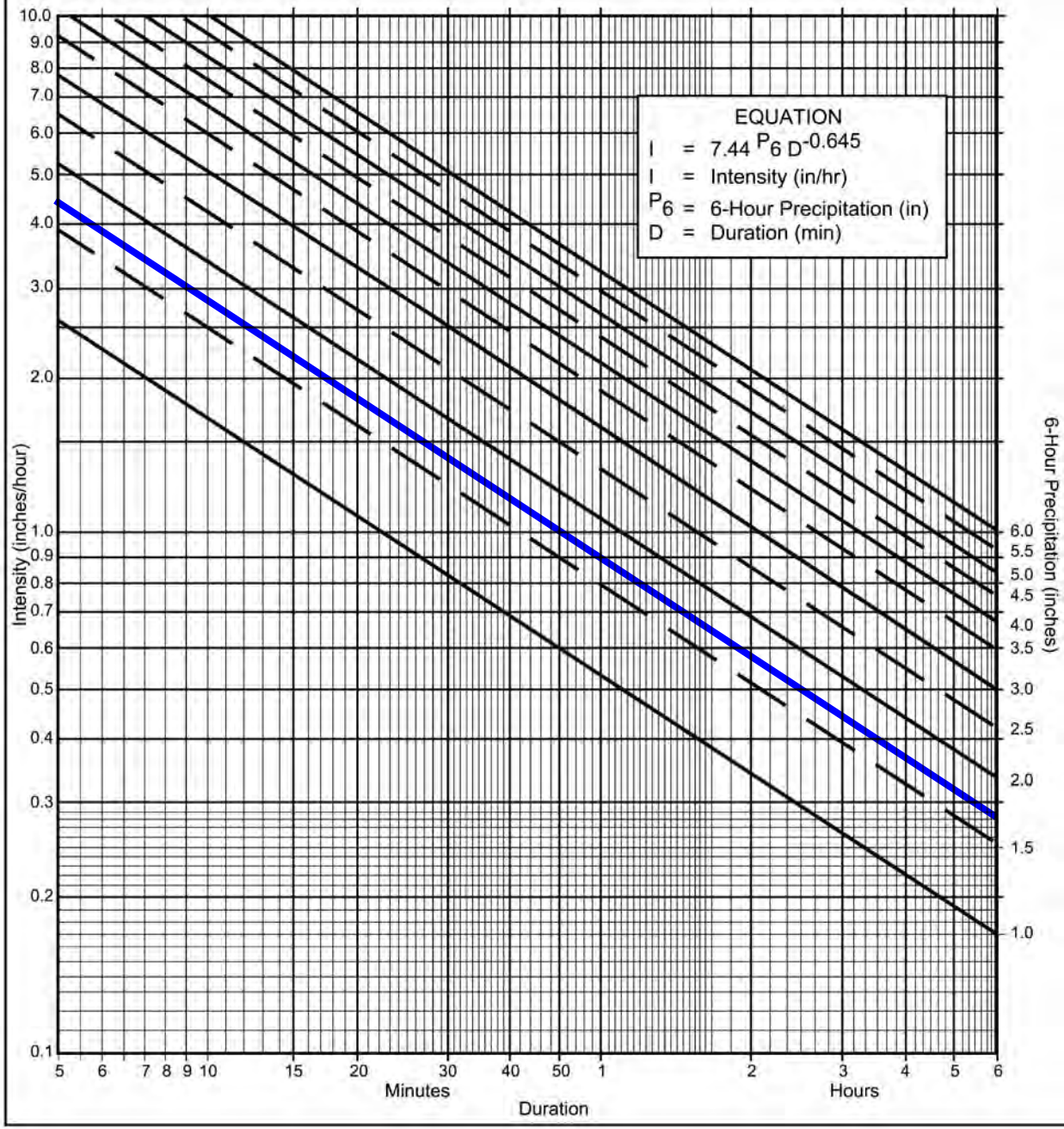
(e) I = 2.9 in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 10 year

(b) P_6 = 1.7 in., P_{24} = 2.9, $\frac{P_6}{P_{24}}$ = 0.59 %(2)

(c) Adjusted $P_6^{(2)}$ = _____ in.

(d) t_x = _____ min.

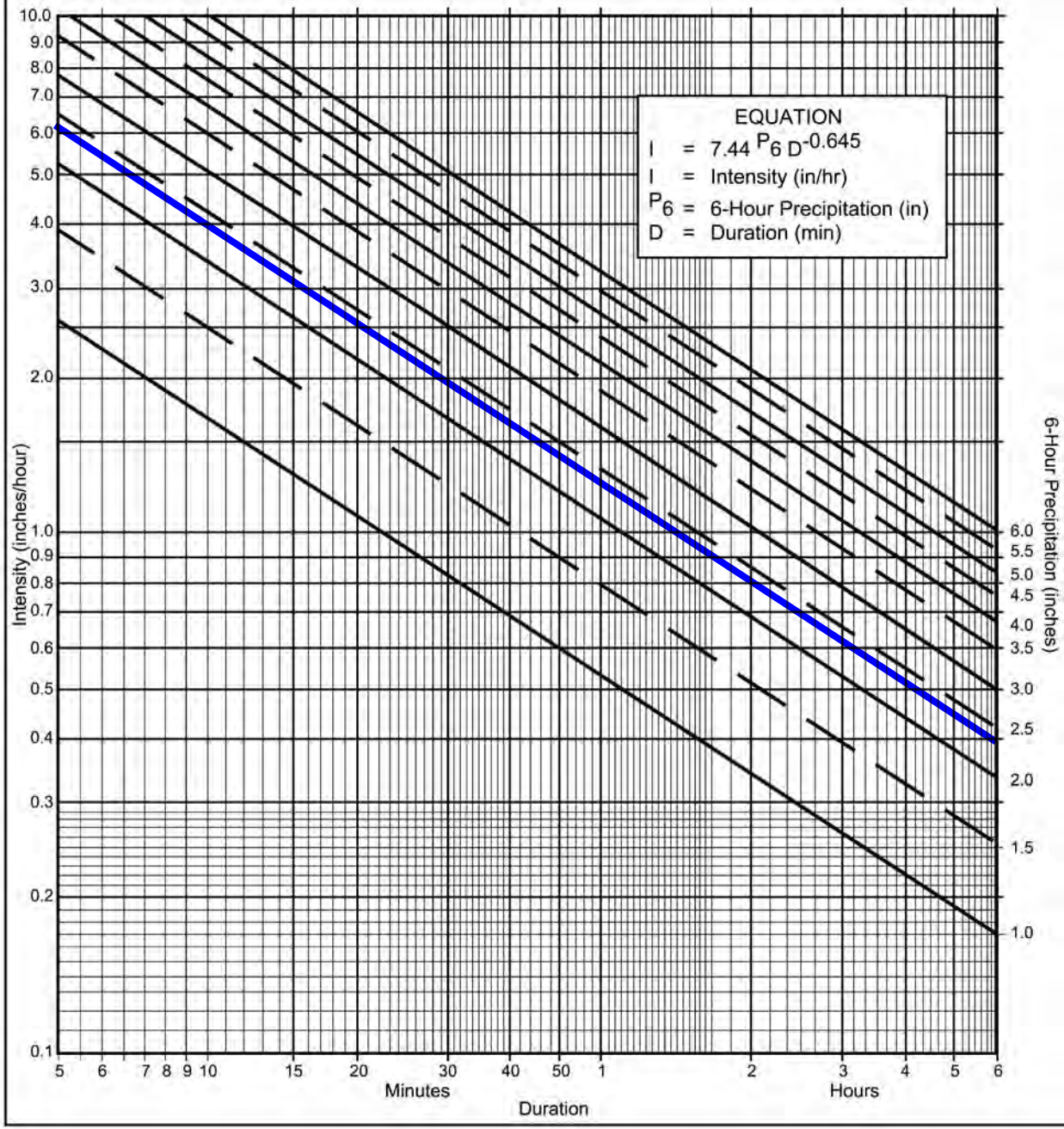
(e) I = 4.5 in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1



Directions for Application:

(1) From precipitation maps determine 6 hr and 24 hr amounts for the selected frequency. These maps are included in the County Hydrology Manual (10, 50, and 100 yr maps included in the Design and Procedure Manual).

(2) Adjust 6 hr precipitation (if necessary) so that it is within the range of 45% to 65% of the 24 hr precipitation (not applicaple to Desert).

(3) Plot 6 hr precipitation on the right side of the chart.

(4) Draw a line through the point parallel to the plotted lines.

(5) This line is the intensity-duration curve for the location being analyzed.

Application Form:

(a) Selected frequency 100 year

(b) P_6 = 2.4 in., P_{24} = 4.5, $\frac{P_6}{P_{24}}$ = 0.53 %(2)

(c) Adjusted P_6(2) = _____ in.

(d) t_x = _____ min.

(e) I = 6.1 in./hr.

Note: This chart replaces the Intensity-Duration-Frequency curves used since 1965.

P6	1	1.5	2	2.5	3	3.5	4	4.5	5	5.5	6
Duration	I	I	I	I	I	I	I	I	I	I	I
5	2.63	3.95	5.27	6.59	7.90	9.22	10.54	11.86	13.17	14.49	15.81
7	2.12	3.18	4.24	5.30	6.36	7.42	8.48	9.54	10.60	11.66	12.72
10	1.68	2.53	3.37	4.21	5.05	5.90	6.74	7.58	8.42	9.27	10.11
15	1.30	1.95	2.59	3.24	3.89	4.54	5.19	5.84	6.49	7.13	7.78
20	1.08	1.62	2.15	2.69	3.23	3.77	4.31	4.85	5.39	5.93	6.46
25	0.93	1.40	1.87	2.33	2.80	3.27	3.73	4.20	4.67	5.13	5.60
30	0.83	1.24	1.66	2.07	2.49	2.90	3.32	3.73	4.15	4.56	4.98
40	0.69	1.03	1.38	1.72	2.07	2.41	2.76	3.10	3.45	3.79	4.13
50	0.60	0.90	1.19	1.49	1.79	2.09	2.39	2.69	2.98	3.28	3.58
60	0.53	0.80	1.06	1.33	1.59	1.86	2.12	2.39	2.65	2.92	3.18
90	0.41	0.61	0.82	1.02	1.23	1.43	1.63	1.84	2.04	2.25	2.45
120	0.34	0.51	0.68	0.85	1.02	1.19	1.36	1.53	1.70	1.87	2.04
150	0.29	0.44	0.59	0.73	0.88	1.03	1.18	1.32	1.47	1.62	1.76
180	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.18	1.31	1.44	1.57
240	0.22	0.33	0.43	0.54	0.65	0.76	0.87	0.98	1.08	1.19	1.30
300	0.19	0.28	0.38	0.47	0.56	0.66	0.75	0.85	0.94	1.03	1.13
360	0.17	0.25	0.33	0.42	0.50	0.58	0.67	0.75	0.84	0.92	1.00

Intensity-Duration Design Chart - Template

FIGURE 3-1

NOAA Atlas 14, Volume 6, Version 2
Location name: Shaver Lake, California, USA*
Latitude: 37.4°, Longitude: -119.2°
Elevation: 7158.39 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.165 (0.142-0.193)	0.213 (0.184-0.250)	0.280 (0.240-0.329)	0.337 (0.287-0.401)	0.420 (0.342-0.520)	0.488 (0.387-0.620)	0.560 (0.432-0.735)	0.640 (0.476-0.868)	0.755 (0.534-1.08)	0.851 (0.577-1.27)
10-min	0.237 (0.204-0.277)	0.306 (0.263-0.358)	0.401 (0.344-0.472)	0.483 (0.411-0.574)	0.602 (0.491-0.746)	0.699 (0.555-0.889)	0.803 (0.619-1.05)	0.917 (0.682-1.24)	1.08 (0.765-1.54)	1.22 (0.827-1.82)
15-min	0.286 (0.247-0.335)	0.370 (0.318-0.433)	0.485 (0.417-0.571)	0.584 (0.497-0.695)	0.728 (0.593-0.902)	0.845 (0.671-1.07)	0.971 (0.748-1.27)	1.11 (0.825-1.50)	1.31 (0.926-1.87)	1.48 (1.00-2.20)
30-min	0.391 (0.337-0.457)	0.505 (0.435-0.592)	0.663 (0.569-0.780)	0.799 (0.679-0.949)	0.995 (0.811-1.23)	1.16 (0.917-1.47)	1.33 (1.02-1.74)	1.51 (1.13-2.06)	1.79 (1.26-2.55)	2.02 (1.37-3.00)
60-min	0.509 (0.439-0.596)	0.658 (0.567-0.771)	0.863 (0.741-1.01)	1.04 (0.884-1.24)	1.29 (1.06-1.60)	1.50 (1.19-1.91)	1.73 (1.33-2.27)	1.97 (1.47-2.68)	2.33 (1.65-3.33)	2.63 (1.78-3.91)
2-hr	0.757 (0.653-0.886)	0.960 (0.827-1.13)	1.24 (1.07-1.46)	1.49 (1.26-1.77)	1.84 (1.50-2.28)	2.13 (1.69-2.71)	2.45 (1.89-3.21)	2.79 (2.08-3.79)	3.29 (2.33-4.70)	3.71 (2.52-5.53)
3-hr	0.948 (0.818-1.11)	1.19 (1.03-1.40)	1.53 (1.31-1.80)	1.82 (1.55-2.17)	2.25 (1.83-2.79)	2.60 (2.07-3.31)	2.98 (2.29-3.91)	3.39 (2.52-4.60)	3.99 (2.82-5.70)	4.49 (3.05-6.69)
6-hr	1.41 (1.22-1.65)	1.76 (1.52-2.06)	2.24 (1.93-2.64)	2.66 (2.26-3.16)	3.26 (2.66-4.04)	3.76 (2.98-4.78)	4.29 (3.30-5.62)	4.87 (3.62-6.60)	5.70 (4.03-8.14)	6.39 (4.34-9.52)
12-hr	2.09 (1.80-2.44)	2.65 (2.29-3.11)	3.42 (2.94-4.03)	4.08 (3.47-4.85)	5.02 (4.09-6.22)	5.78 (4.59-7.35)	6.58 (5.07-8.63)	7.44 (5.54-10.1)	8.68 (6.14-12.4)	9.69 (6.57-14.4)
24-hr	2.89 (2.57-3.33)	3.79 (3.35-4.36)	4.99 (4.42-5.76)	6.01 (5.28-6.98)	7.44 (6.36-8.87)	8.58 (7.21-10.4)	9.78 (8.06-12.1)	11.1 (8.91-14.0)	12.9 (10.0-16.9)	14.4 (10.9-19.4)
2-day	3.85 (3.41-4.42)	5.13 (4.55-5.91)	6.87 (6.07-7.92)	8.32 (7.31-9.66)	10.4 (8.87-12.4)	12.0 (10.1-14.6)	13.7 (11.3-17.0)	15.5 (12.5-19.7)	18.1 (14.1-23.8)	20.2 (15.3-27.3)

3-day	4.42 (3.93-5.09)	5.97 (5.29-6.87)	8.04 (7.11-9.27)	9.78 (8.59-11.4)	12.2 (10.5-14.6)	14.2 (11.9-17.2)	16.2 (13.4-20.1)	18.4 (14.8-23.3)	21.5 (16.7-28.1)	23.9 (18.1-32.3)
4-day	4.87 (4.32-5.60)	6.58 (5.83-7.57)	8.87 (7.85-10.2)	10.8 (9.49-12.5)	13.5 (11.5-16.1)	15.6 (13.1-19.0)	17.9 (14.7-22.1)	20.2 (16.3-25.6)	23.6 (18.4-30.9)	26.3 (19.9-35.5)
7-day	5.89 (5.23-6.78)	7.89 (6.99-9.08)	10.6 (9.34-12.2)	12.8 (11.2-14.8)	15.9 (13.6-19.0)	18.4 (15.4-22.3)	20.9 (17.2-25.9)	23.6 (19.0-29.9)	27.4 (21.3-35.9)	30.5 (23.0-41.1)
10-day	6.67 (5.92-7.67)	8.88 (7.88-10.2)	11.8 (10.5-13.6)	14.3 (12.5-16.6)	17.7 (15.1-21.1)	20.3 (17.1-24.7)	23.1 (19.0-28.6)	26.0 (20.9-32.9)	30.1 (23.4-39.4)	33.3 (25.2-44.9)
20-day	8.72 (7.74-10.0)	11.6 (10.3-13.4)	15.3 (13.6-17.7)	18.4 (16.2-21.4)	22.5 (19.3-26.9)	25.7 (21.6-31.2)	28.9 (23.9-35.8)	32.3 (26.0-40.9)	36.9 (28.7-48.3)	40.4 (30.6-54.5)
30-day	10.7 (9.51-12.3)	14.2 (12.6-16.4)	18.7 (16.6-21.6)	22.3 (19.6-25.9)	27.1 (23.2-32.4)	30.7 (25.9-37.3)	34.4 (28.3-42.6)	38.1 (30.7-48.2)	43.1 (33.5-56.4)	46.9 (35.5-63.3)
45-day	13.4 (11.9-15.4)	17.7 (15.7-20.3)	23.0 (20.4-26.6)	27.3 (24.0-31.7)	32.8 (28.0-39.1)	36.8 (31.0-44.7)	40.9 (33.7-50.6)	44.9 (36.2-56.9)	50.2 (39.1-65.8)	54.2 (41.0-73.1)
60-day	15.9 (14.1-18.3)	20.9 (18.5-24.0)	27.0 (23.9-31.1)	31.7 (27.9-36.8)	37.8 (32.3-45.1)	42.2 (35.5-51.2)	46.5 (38.3-57.6)	50.8 (40.9-64.3)	56.3 (43.8-73.8)	60.4 (45.7-81.4)

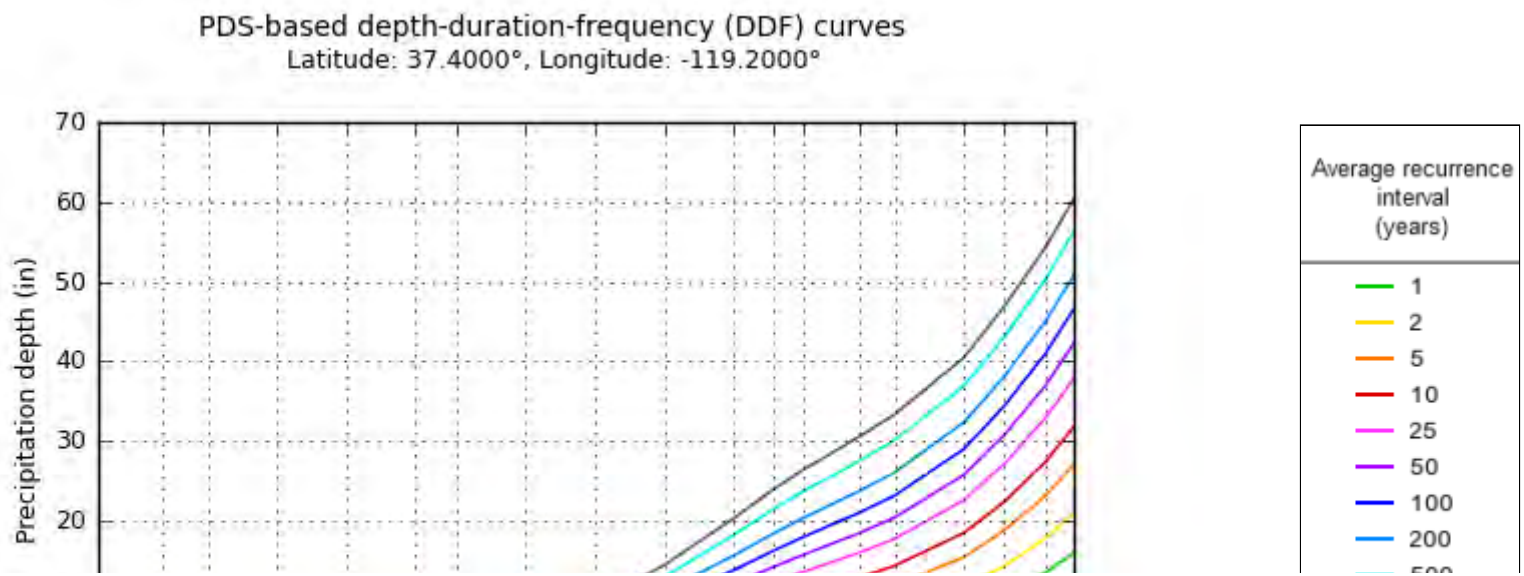
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

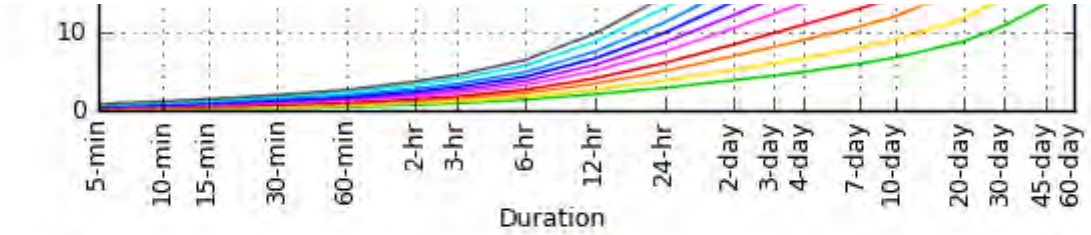
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

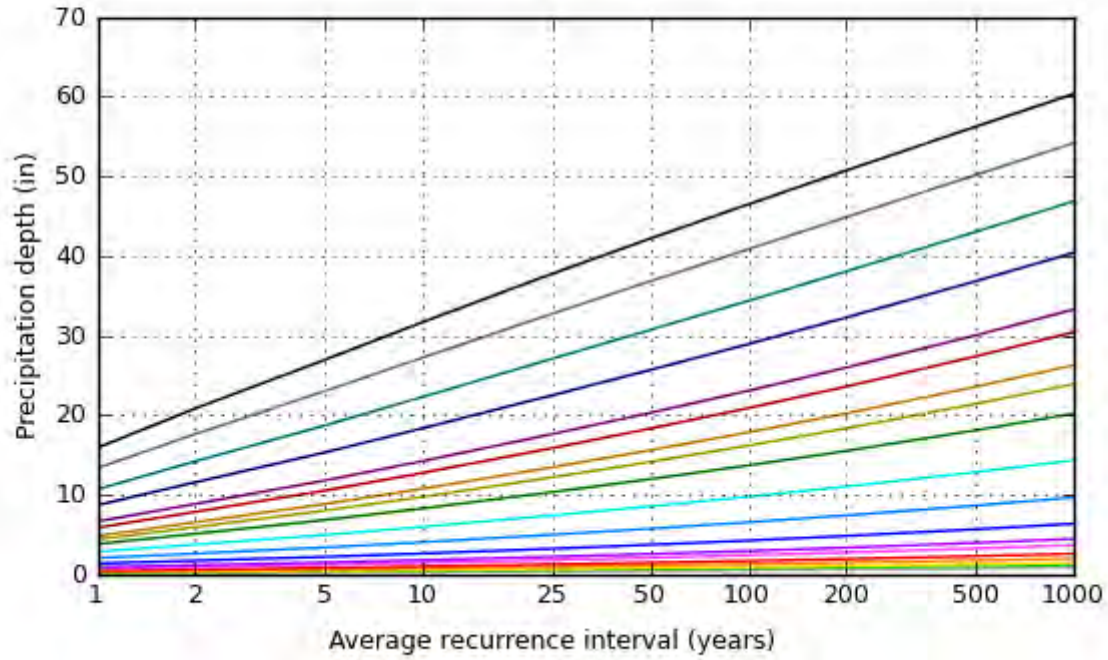
Please refer to NOAA Atlas 14 document for more information.

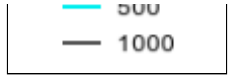
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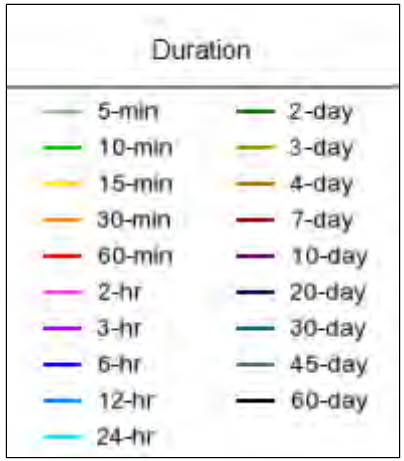
PF graphical









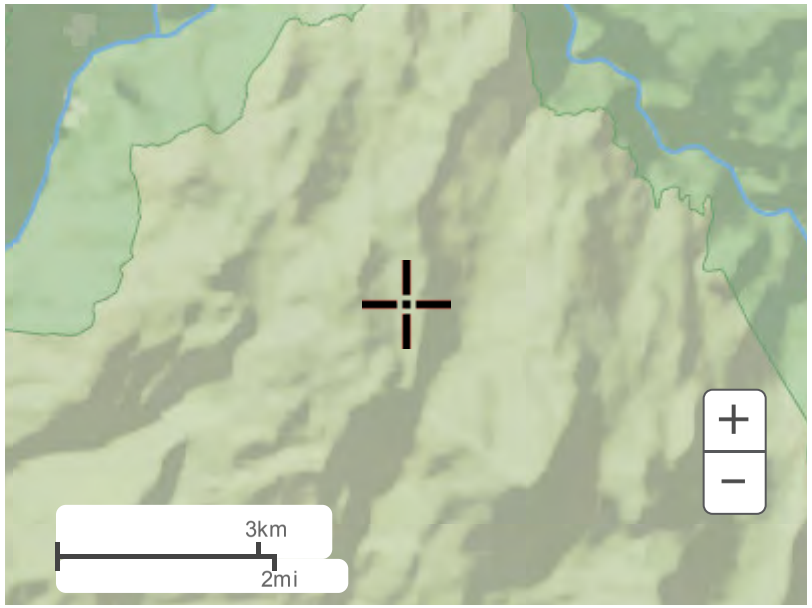


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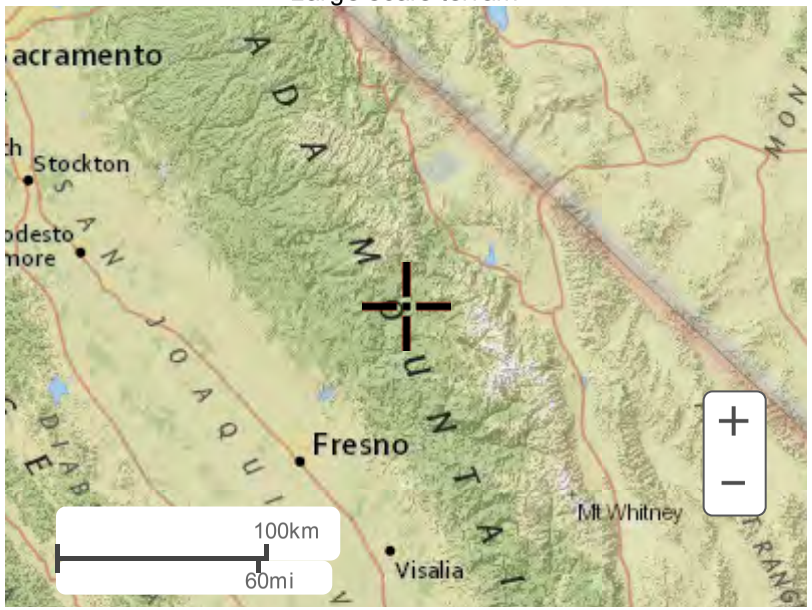
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Maps & aerials

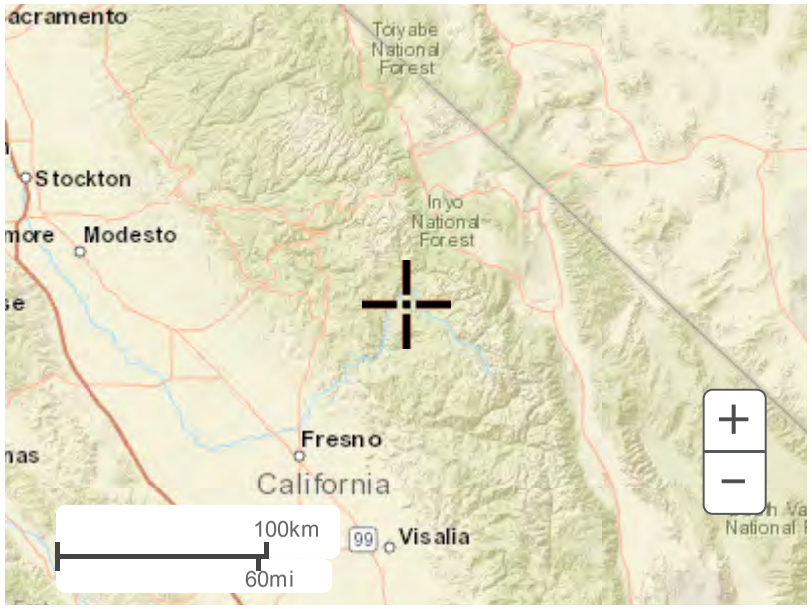
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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NOAA Atlas 14, Volume 6, Version 2
Location name: Santee, California, USA*
Latitude: 32.8393°, Longitude: -117.0079°
Elevation: 310.45 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.40 (1.18-1.68)	1.78 (1.49-2.14)	2.27 (1.90-2.74)	2.66 (2.22-3.25)	3.22 (2.58-4.06)	3.64 (2.86-4.69)	4.07 (3.11-5.39)	4.51 (3.35-6.16)	5.12 (3.64-7.30)	5.59 (3.83-8.26)
10-min	1.00 (0.846-1.21)	1.27 (1.07-1.53)	1.63 (1.36-1.96)	1.91 (1.58-2.33)	2.30 (1.85-2.91)	2.61 (2.05-3.37)	2.92 (2.23-3.86)	3.24 (2.40-4.42)	3.67 (2.60-5.23)	4.01 (2.74-5.92)
15-min	0.808 (0.680-0.972)	1.02 (0.860-1.24)	1.31 (1.10-1.58)	1.54 (1.28-1.88)	1.86 (1.49-2.34)	2.10 (1.65-2.71)	2.35 (1.80-3.12)	2.61 (1.93-3.56)	2.96 (2.10-4.22)	3.23 (2.21-4.77)
30-min	0.562 (0.472-0.676)	0.712 (0.598-0.856)	0.908 (0.760-1.10)	1.07 (0.888-1.30)	1.29 (1.03-1.63)	1.46 (1.14-1.88)	1.63 (1.25-2.16)	1.81 (1.34-2.47)	2.05 (1.46-2.92)	2.24 (1.53-3.31)
60-min	0.398 (0.334-0.478)	0.504 (0.423-0.607)	0.644 (0.539-0.777)	0.758 (0.629-0.923)	0.914 (0.731-1.15)	1.03 (0.809-1.33)	1.16 (0.882-1.53)	1.28 (0.950-1.75)	1.45 (1.03-2.07)	1.59 (1.08-2.34)
2-hr	0.274 (0.230-0.330)	0.346 (0.291-0.417)	0.441 (0.369-0.532)	0.518 (0.430-0.631)	0.622 (0.498-0.785)	0.702 (0.550-0.906)	0.784 (0.598-1.04)	0.867 (0.642-1.18)	0.980 (0.694-1.40)	1.07 (0.730-1.58)
3-hr	0.219 (0.184-0.264)	0.277 (0.233-0.334)	0.353 (0.295-0.426)	0.415 (0.344-0.505)	0.498 (0.399-0.628)	0.562 (0.440-0.724)	0.626 (0.478-0.829)	0.692 (0.513-0.944)	0.782 (0.554-1.11)	0.850 (0.581-1.26)
6-hr	0.147 (0.124-0.177)	0.187 (0.157-0.225)	0.239 (0.200-0.288)	0.281 (0.233-0.342)	0.337 (0.270-0.425)	0.380 (0.298-0.490)	0.424 (0.323-0.561)	0.469 (0.347-0.639)	0.529 (0.375-0.753)	0.575 (0.393-0.849)
12-hr	0.097 (0.081-0.116)	0.124 (0.104-0.150)	0.160 (0.134-0.193)	0.189 (0.157-0.230)	0.228 (0.183-0.288)	0.258 (0.202-0.333)	0.288 (0.220-0.382)	0.319 (0.236-0.435)	0.361 (0.256-0.514)	0.393 (0.269-0.580)
24-hr	0.061 (0.053-0.070)	0.079 (0.069-0.092)	0.103 (0.090-0.119)	0.122 (0.106-0.143)	0.148 (0.124-0.178)	0.167 (0.138-0.206)	0.187 (0.151-0.236)	0.207 (0.164-0.268)	0.235 (0.178-0.316)	0.256 (0.188-0.355)
2-day	0.038 (0.033-0.044)	0.049 (0.043-0.057)	0.065 (0.057-0.075)	0.077 (0.067-0.090)	0.093 (0.079-0.113)	0.106 (0.087-0.130)	0.118 (0.096-0.149)	0.131 (0.103-0.169)	0.148 (0.112-0.199)	0.161 (0.118-0.223)

3-day	0.028 (0.024-0.032)	0.037 (0.032-0.043)	0.049 (0.043-0.057)	0.058 (0.050-0.068)	0.070 (0.059-0.085)	0.080 (0.066-0.098)	0.089 (0.072-0.113)	0.099 (0.078-0.128)	0.112 (0.085-0.150)	0.122 (0.089-0.169)
4-day	0.023 (0.020-0.026)	0.030 (0.027-0.035)	0.040 (0.035-0.047)	0.048 (0.042-0.056)	0.058 (0.049-0.070)	0.066 (0.055-0.081)	0.074 (0.060-0.093)	0.082 (0.064-0.106)	0.092 (0.070-0.124)	0.101 (0.074-0.140)
7-day	0.016 (0.014-0.018)	0.021 (0.018-0.024)	0.027 (0.024-0.032)	0.033 (0.028-0.038)	0.040 (0.034-0.048)	0.045 (0.037-0.056)	0.051 (0.041-0.064)	0.056 (0.044-0.073)	0.064 (0.048-0.086)	0.069 (0.051-0.096)
10-day	0.012 (0.011-0.014)	0.016 (0.014-0.019)	0.021 (0.019-0.025)	0.025 (0.022-0.030)	0.031 (0.026-0.038)	0.035 (0.029-0.044)	0.040 (0.032-0.050)	0.044 (0.035-0.057)	0.050 (0.038-0.067)	0.055 (0.040-0.076)
20-day	0.007 (0.006-0.008)	0.010 (0.009-0.011)	0.013 (0.011-0.015)	0.016 (0.014-0.018)	0.019 (0.016-0.023)	0.022 (0.018-0.027)	0.024 (0.020-0.031)	0.027 (0.021-0.035)	0.031 (0.024-0.042)	0.034 (0.025-0.047)
30-day	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.010 (0.009-0.012)	0.012 (0.011-0.015)	0.015 (0.013-0.019)	0.018 (0.014-0.022)	0.020 (0.016-0.025)	0.022 (0.017-0.028)	0.025 (0.019-0.034)	0.027 (0.020-0.038)
45-day	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.008 (0.007-0.009)	0.010 (0.008-0.011)	0.012 (0.010-0.014)	0.014 (0.011-0.017)	0.015 (0.012-0.019)	0.017 (0.014-0.022)	0.020 (0.015-0.026)	0.022 (0.016-0.030)
60-day	0.004 (0.003-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.010)	0.010 (0.009-0.012)	0.012 (0.010-0.015)	0.013 (0.011-0.017)	0.015 (0.012-0.019)	0.017 (0.013-0.023)	0.019 (0.014-0.026)

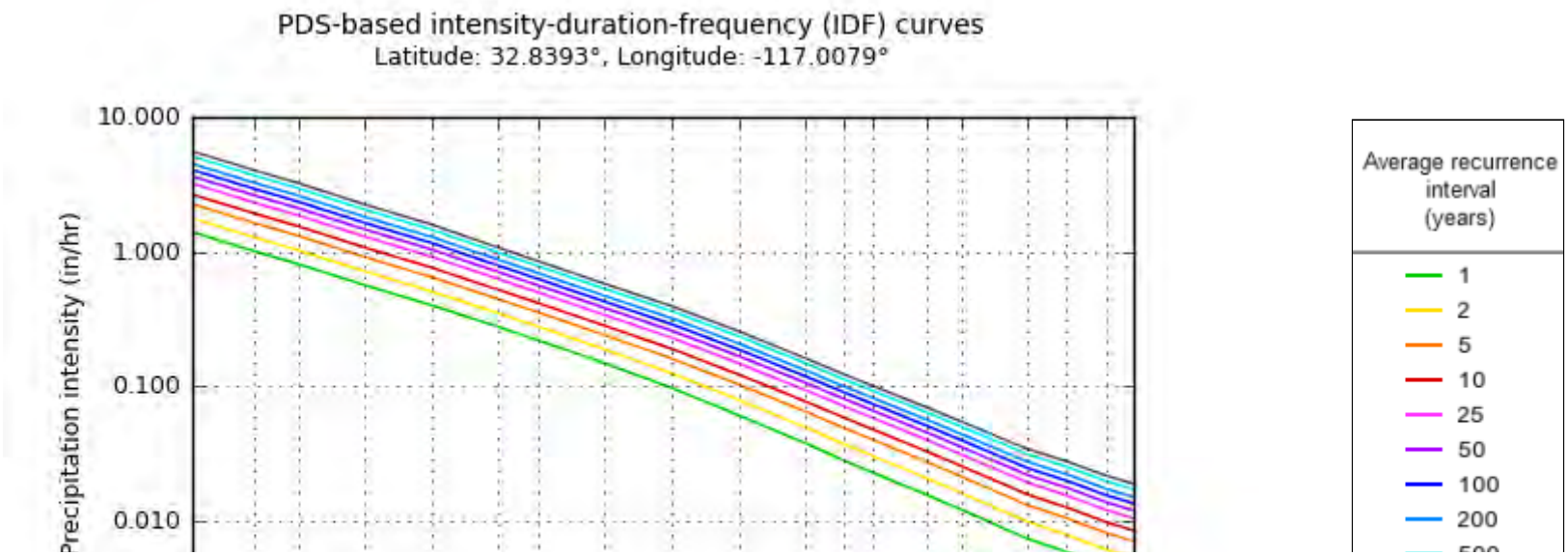
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

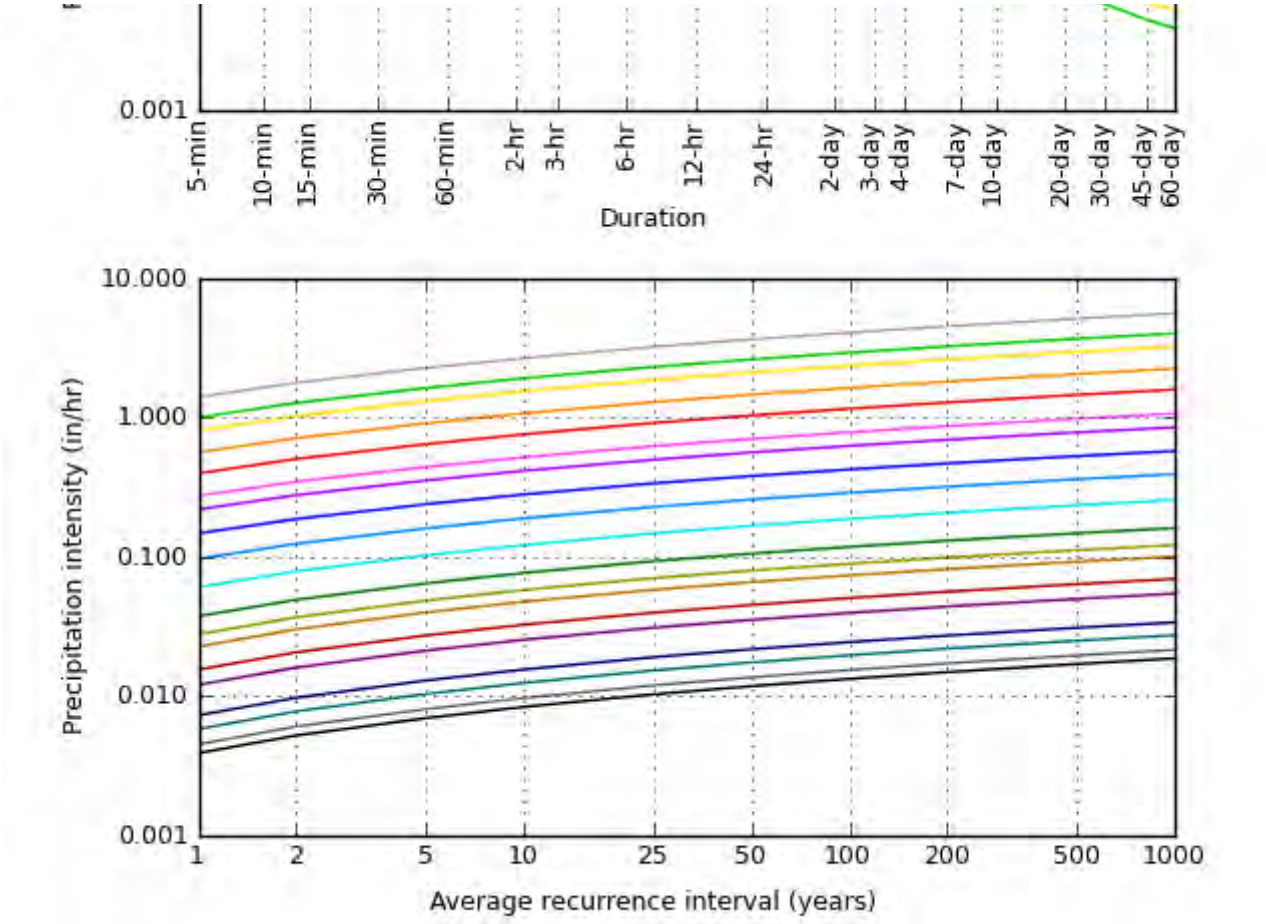
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

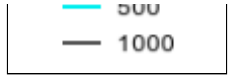
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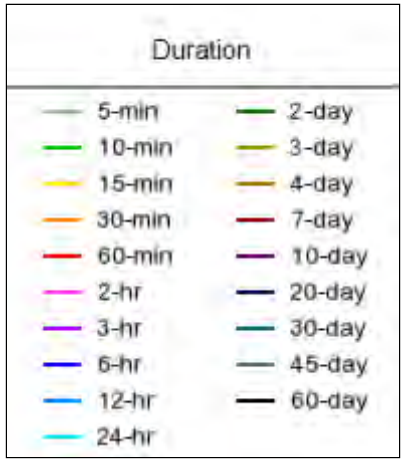
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PF graphical







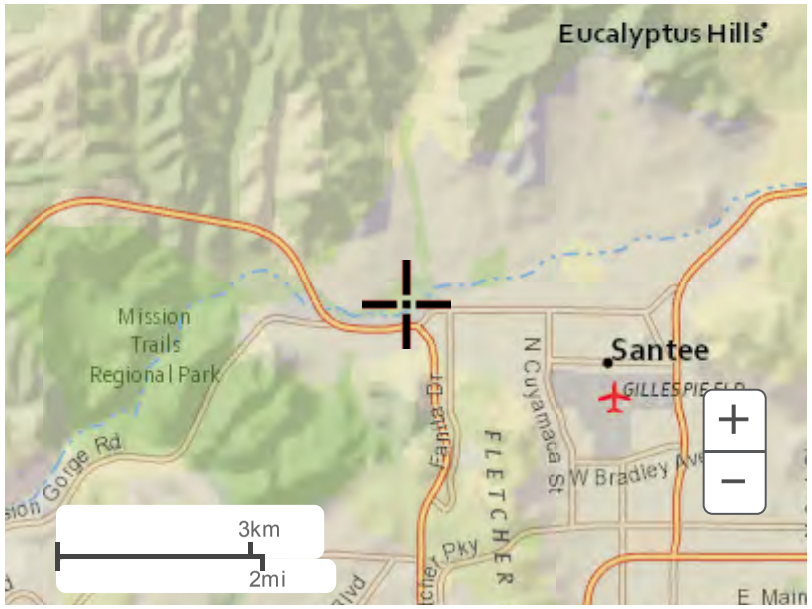


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Maps & aerials

Small scale terrain



Large scale terrain



Large scale map



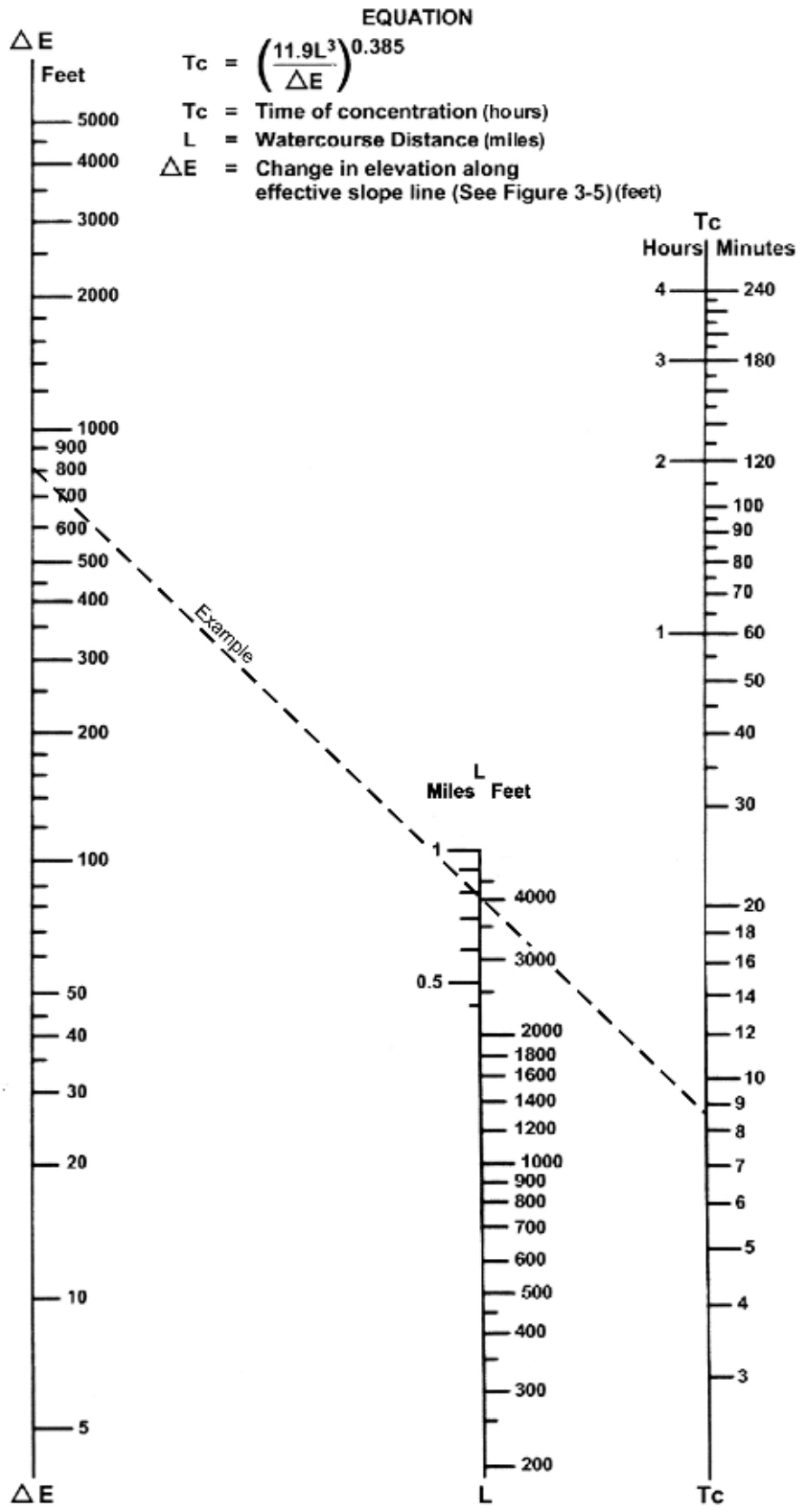
Large scale aerial



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National Oceanic and Atmospheric Administration
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1325 East West Highway
Silver Spring, MD 20910
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SOURCE: California Division of Highways (1941) and Kirpich (1940)

FIGURE 3-4

Nomograph for Determination of
Time of Concentration (Tc) or Travel Time (Tt) for Natural Watersheds

7

RECORDING REQUESTED BY
STEWART TITLE OF CALIFORNIA

~~RECORDING REQUESTED BY AND~~
WHEN RECORDED MAIL TO:

State of California
Wildlife Conservation Board
1807 13th Street, Suite 103
Sacramento, CA 95811

2259-
01-0248666

DOC # 2009-0694057

DEC 16, 2009 8:00 AM
OFFICIAL RECORDS
SAN DIEGO COUNTY RECORDER'S OFFICE
DAVID L. BUTLER, COUNTY RECORDER
FEES: 0.00
OC: NA

6920

PAGES: 21

Space Above Line for Recorder's Use Only

CONSERVATION EASEMENT DEED

THIS CONSERVATION EASEMENT DEED is made this 15 day of OCTOBER, 2009, by The Environmental Trust, Inc., a California nonprofit public benefit corporation ("Grantor"), in favor of THE STATE OF CALIFORNIA ("Grantee"), acting by and through its Department of Fish and Game, a subdivision of the California Resources Agency, with reference to the following facts:

RECITALS

A. Grantor is the sole owner in fee simple of certain real property containing approximately 43 acres, located in the County of San Diego, State of California, designated Assessor's Parcel Number 383-071-08 and more particularly described in Exhibit "A" attached hereto and incorporated herein by this reference (the "Property");

B. The Property possesses wildlife and habitat values (collectively, "conservation values") of great importance to Grantee and the people of the State of California;

C. The Property provides high quality habitat for least Bell's vireo (Vireo bellii pusillus), Southern California rufous-crowned sparrow (Aimophila ruficeps canescens), yellow-breasted chat (Icteria virens), yellow warbler (Dendroica petechia brewsteri) and the southwestern pond turtle (Actinemys marmorata pallida) and contains southern cottonwood-willow riparian forest, fresh water pond, and non-native vegetation habitats;

D. Grantor acquired the Property as mitigation or compensation for certain impacts of the project(s) described in Exhibit "B" attached hereto and incorporated herein by this reference.

E. The Department of Fish and Game ("CDFG") has jurisdiction, pursuant to Fish and Game Code Section 1802, over the conservation, protection, and management of fish, wildlife, native plants and the habitat necessary for biologically sustainable populations of those species, and CDFG is authorized to hold conservation easements for these purposes pursuant to Civil Code Section 815.3, Fish and Game Code Section 1348, and other provisions of California law.

F. This Conservation Easement is a "protective conservation easement" granted pursuant to the Combined Disclosure Statement and Liquidating Plan of Reorganization dated as of December 20, 2005 (the "Plan"), in United States Bankruptcy Court, Southern District of California, Bankruptcy No. 05-12321-LA11, In Re The Environmental Trust, Inc., Debtor. 6921

G. Also pursuant to the Plan, concurrently with this Conservation Easement, Grantor is granting and conveying the Property to the City of Santee which will acquire the Property subject to this Conservation Easement. As Section 10 of this Conservation Easement requires, Grantor shall incorporate the terms of this Conservation Easement by reference in the deed(s) or other legal instrument(s) by which Grantor so divests itself of the Property.

COVENANTS, TERMS, CONDITIONS AND RESTRICTIONS

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and pursuant to California law, including Civil Code Section 815, et seq., Grantor hereby voluntarily grants and conveys to Grantee a conservation easement in perpetuity over the Property.

1. Purposes. The purposes of this Conservation Easement are to ensure the Property will be retained forever in its natural condition and to prevent any use of the Property that will impair or interfere with the conservation values of the Property. Grantor intends that this Conservation Easement will confine the use of the Property to such activities that are consistent with those purposes, including, without limitation: those involving the preservation, restoration and enhancement of native species and their habitats; any use consistent with the requirements of the City of Santee Multiple Species Conservation Plan Subarea Plan for the Property and not inconsistent with any express prohibition of this Conservation Easement; the operation, and use by the public of existing pedestrian, equestrian and biking trails, as of the date of recording of this Conservation Easement, as shown in Exhibit "C"; the establishment, operation, and use by the public of a trailhead as described in Exhibit C hereto; and the construction, operation, and public use of future pedestrian and other trails, subject to CDFG approval.

2. Grantee's Rights. To accomplish the purposes of this Conservation Easement, Grantor hereby grants and conveys the following rights to Grantee:

(a) To preserve and protect the conservation values of the Property;

(b) To enter upon the Property at reasonable times in order to monitor compliance with and otherwise enforce the terms of this Conservation Easement, and for scientific research and interpretive purposes by Grantee or its designees, provided that Grantee shall not unreasonably interfere with Grantor's authorized use and quiet enjoyment of the Property;

(c) To prevent any activity on or use of the Property that is inconsistent with the purposes of this Conservation Easement and to require the restoration of such

areas or features of the Property that may be damaged by any act, failure to act, or any use that is inconsistent with the purposes of this Conservation Easement;

(d) All mineral, air and water rights necessary to protect and to sustain the biological resources of the Property; and

(e) All present and future development rights allocated, implied, reserved or inherent in the Property; such rights are hereby terminated and extinguished, and may not be used on or transferred to any portion of the Property, nor any other property adjacent or otherwise.

3. Prohibited Uses. Any activity on or use of the Property inconsistent with the purposes of this Conservation Easement is prohibited. Without limiting the generality of the foregoing, the following uses and activities by Grantor, Grantor's agents, and third parties, are expressly prohibited:

(a) Unseasonal watering; use of fertilizers, pesticides, biocides, herbicides or other agricultural chemicals except as necessary to protect habitat values; weed abatement activities, except as provided for in Section 3(l) herein; incompatible fire protection activities; and any and all other activities and uses which may adversely affect the purposes of this Conservation Easement;

(b) Use of off-road vehicles and use of any other motorized vehicles except on existing roadways;

(c) Agricultural activity of any kind, except that grazing is permitted if done in accordance with a CDFG-approved grazing or management plan;

(d) Recreational activities including, but not limited to, horseback riding, biking, hunting or fishing, except as may be specifically permitted under this Conservation Easement described in Exhibit "C";

(e) Commercial or industrial uses;

(f) Any legal or de facto division, subdivision or partitioning of the Property;

(g) Construction, reconstruction or placement of any building, billboard or sign, except trail markers, nature interpretive signs and regulatory signs, or any other structure or improvement of any kind, except trails and trailhead as permitted under this Conservation Easement described in Exhibit "C";

(h) Depositing or accumulation of soil, trash, ashes, refuse, waste, bio-solids or any other materials;

(i) Planting, introduction or dispersal of non-native or exotic plant or animal species;

(j) Filling, dumping, excavating, draining, dredging, mining, drilling, removing or exploring for or extraction of minerals, loam, soil, sands, gravel, rocks or other material on or below the surface of the Property;

(k) Altering the surface or general topography of the Property, including building of roads, except for the purpose of maintaining existing foot trail and constructing the trailhead, as shown in Exhibit "C", consistent with this Conservation Easement;

(l) Removing, destroying, or cutting of native vegetation, except as required by law for (1) fire breaks, (2) maintenance of existing foot trails or roads and future trailhead consistent with this Conservation Easement, or (3) prevention or treatment of disease; and

(m) Manipulating, impounding or altering any natural water course, body of water or water circulation on the Property, and activities or uses detrimental to water quality, including but not limited to degradation or pollution of any surface or sub-surface waters.

4. Grantor's Duties. Grantor shall undertake all reasonable actions to prevent the unlawful entry and trespass by persons whose activities may degrade or harm the conservation values of the Property, except for use of trails as permitted by this Conservation Easement. To the extent Grantor is unable to control unlawful entry to or use of the Property by persons causing degradation or harm to the conservation values of the Property using reasonable measures, the Grantee and Grantor shall endeavor in good faith to enter into a cooperative mitigation agreement for the mitigation of the adverse effects of such activity.

5. Reserved Rights. Grantor reserves to itself, and to its personal representatives, heirs, successors, and assigns, all rights accruing from its ownership of the Property, including the right to engage in or to permit or invite others to engage in all uses of the Property that are not expressly prohibited or limited by, and are consistent with the purposes of, this Conservation Easement.

6. Grantee's Remedies. If Grantee determines that a violation of the terms of this Conservation Easement has occurred or is threatened, Grantee shall give written notice to Grantor of such violation and demand in writing the cure of such violation. If Grantor fails to cure the violation within thirty (30) days after receipt of written notice and demand from Grantee, or if the cure reasonably requires more than thirty (30) days to complete and Grantor fails to begin the cure within the thirty (30)-day period or fails to continue diligently to complete the cure, Grantee may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Conservation Easement, to recover any damages to which Grantee may be entitled for violation of the terms of this Conservation Easement or for any injury to the conservation values of the Property, to enjoin the violation, ex parte as necessary, by temporary or permanent injunction without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies, or for other equitable relief, including, but not limited to, the restoration of the Property to the condition in which it existed prior to any such violation or injury. Without limiting Grantor's liability therefore, Grantee may apply any damages recovered to the cost of undertaking any corrective action on the Property.

If Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate damage to the conservation values of the Property, Grantee may pursue its remedies under this Section 6 without prior notice to Grantor or without waiting for the period provided for cure to expire. Grantee's rights under this section apply equally to actual or threatened violations of the terms of this Conservation Easement. Grantor agrees that Grantee's remedies at law for any violation of the terms of this Conservation Easement are inadequate and that Grantee shall be entitled to the injunctive relief described in this section, both prohibitive and mandatory, in addition to such other relief to which Grantee may be entitled, including specific performance of the terms of this Conservation Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Grantee's remedies described in this section shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity, including but not limited to, the remedies set forth in Civil Code Section 815, et seq., inclusive. The failure of Grantee to discover a violation or to take immediate legal action shall not bar Grantee from taking such action at a later time.

If at any time in the future Grantor or any subsequent transferee uses or threatens to use the Property for purposes inconsistent with this Conservation Easement then, notwithstanding Civil Code Section 815.7, the California Attorney General or any entity or individual with a justifiable interest in the preservation of this Conservation Easement has standing as interested parties in any proceeding affecting this Conservation Easement.

6.1. Costs of Enforcement. Any costs incurred by Grantee, where Grantee is the prevailing party, in enforcing the terms of this Conservation Easement against Grantor, including, but not limited to, costs of suit and attorneys' and experts' fees, and any costs of restoration necessitated by Grantor's negligence or breach of this Conservation Easement shall be borne by Grantor.

6.2. Grantee's Discretion. Enforcement of the terms of this Conservation Easement by Grantee shall be at the discretion of Grantee, and any forbearance by Grantee to exercise its rights under this Conservation Easement in the event of any breach of any term of this Conservation Easement shall not be deemed or construed to be a waiver by Grantee of such term or of any subsequent breach of the same or any other term of this Conservation Easement or of any of Grantee's rights under this Conservation Easement. No delay or omission by Grantee in the exercise of any right or remedy shall impair such right or remedy or be construed as a waiver.

6.3. Acts Beyond Grantor's Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from (i) any natural cause beyond Grantor's control, including, without limitation, fire not caused by Grantor, flood, storm, and earth movement, or any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes; or (ii) acts by Grantee or its employees.

6.4. Department of Fish and Game Right of Enforcement. All rights and remedies conveyed to Grantee under this Conservation Easement Deed shall extend to and

are enforceable by CDFG. These rights are in addition to, and do not limit, the rights of enforcement under any permit or agreement described in Exhibit "B".

7. Access. This Conservation Easement does not convey a general right of access to the public, except for recreational use of existing trails and future trails as approved by CDFG.

8. Costs and Liabilities. Grantor retains all responsibilities and shall bear all costs and liabilities of any kind related to the ownership, operation, upkeep, and maintenance of the Property. Grantor agrees that Grantee shall have no duty or responsibility for the operation, upkeep or maintenance of the Property, the monitoring of hazardous conditions thereon, or the protection of Grantor, the public or any third parties from risks relating to conditions on the Property. Grantor remains solely responsible for obtaining any applicable governmental permits and approvals for any activity or use permitted by this Conservation Easement Deed, and any activity or use shall be undertaken in accordance with all applicable federal, state, local and administrative agency statutes, ordinances, rules, regulations, orders and requirements.

8.1. Taxes; No Liens. Grantor shall pay before delinquency all taxes, assessments, fees, and charges of whatever description levied on or assessed against the Property by competent authority (collectively "taxes"), including any taxes imposed upon, or incurred as a result of, this Conservation Easement, and shall furnish Grantee with satisfactory evidence of payment upon request. Notwithstanding the foregoing, should the Property be transferred to a public entity exempt from payment of taxes, this obligation shall not incur any additional liability of any nature on such transferee. Grantor shall keep the Property free from any liens, including those arising out of any obligations incurred by Grantor for any labor or materials furnished or alleged to have been furnished to or for Grantor at or for use on the Property.

8.2. Hold Harmless. Grantor shall hold harmless, protect and indemnify Grantee and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them (each an "Indemnified Party" and, collectively, "Indemnified Parties") from and against any and all liabilities, penalties, costs, losses, damages, expenses (including, without limitation, reasonable attorneys' fees and experts' fees), causes of action, claims, demands, orders, liens or judgments (each a "Claim" and, collectively, "Claims"), arising from or in any way connected with: (1) injury to or the death of any person, or physical damage to any property, resulting from any act, omission, condition, or other matter related to or occurring on or about the Property, regardless of cause, unless due to the negligence or misconduct of Grantee, its governing board, officers, contractors, agents, employees or volunteers; (2) the obligations specified in Sections 4, 8, and 8.1; and (3) the existence or administration of this Conservation Easement. If any action or proceeding is brought against any of the Indemnified Parties by reason of any such Claim, Grantor shall, at the election of and upon written notice from Grantee, defend such action or proceeding by counsel reasonably acceptable to the Indemnified Party or

reimburse Grantee for all charges incurred for services of the Attorney General in defending the action or proceeding. Grantee shall hold harmless, protect and indemnify Grantor and its directors, officers, employees, agents, contractors, and representatives and the heirs, personal representatives, successors and assigns of each of them from and against any and all Claims connected with or arising from the negligence or misconduct of Grantee, its governing board, officers, contractors, agents, employees or volunteers.

8.3. Extinguishment. If circumstances arise in the future that render the purposes of this Conservation Easement impossible to accomplish, this Conservation Easement can only be terminated or extinguished, in whole or in part, by judicial proceedings in a court of competent jurisdiction.

8.4. Condemnation. This Conservation Easement is a "wildlife conservation easement" acquired by a State agency, the condemnation of which is prohibited except as provided in Fish and Game Code Section 1348.3.

9. Transfer of Easement. This Conservation Easement is transferable by Grantee, but Grantee may assign this Conservation Easement only to an entity or organization authorized to acquire and hold conservation easements pursuant to Civil Code Section 815.3 (or any successor provision then applicable) or the laws of the United States and Government Code Section 65965. Grantee shall require the assignee to record the assignment in the county where the Property is located.

10. Transfer of Property. Grantor agrees to incorporate the terms of this Conservation Easement by reference in any deed or other legal instrument by which Grantor divests itself of any interest in all or any portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee of the intent to transfer any interest at least thirty (30) days prior to the date of such transfer. Grantee shall have the right to prevent subsequent transfers in which prospective subsequent claimants or transferees are not given notice of the covenants, terms, conditions and restrictions of this Conservation Easement. The failure of Grantor or Grantee to perform any act provided in this section shall not impair the validity of this Conservation Easement or limit its enforceability in any way.

11. Notices. Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and be served personally or sent by recognized overnight courier that guarantees next-day delivery or by first class mail, postage fully prepaid, addressed as follows:

To Grantor: The Environmental Trust Inc.
P.O. Box 3107
La Mesa, CA 91944
Attn: Brad Thornburgh

To Grantee: Department of Fish and Game
South Coast Regional Office
4949 Viewridge Avenue
San Diego, CA 92123
Attn: Regional Manager

With a copy to: Department of Fish and Game
Office of the General Counsel
1416 Ninth Street, 12th Floor
Sacramento, California 95814-2090
Attn: General Counsel

or to such other address as either party shall designate by written notice to the other. Notice shall be deemed effective upon delivery in the case of personal delivery or delivery by overnight courier or, in the case of delivery by first class mail, five (5) days after deposit into the United States mail.

12. Amendment. This Conservation Easement may be amended by Grantor and Grantee only by mutual written agreement. Any such amendment shall be consistent with the purposes of this Conservation Easement and California law governing conservation easements and shall not affect its perpetual duration. Any such amendment shall be recorded in the official records of San Diego County, State of California.

13. General Provisions.

(a) Controlling Law. The interpretation and performance of this Conservation Easement shall be governed by the laws of the State of California, disregarding the conflicts of law principles of such state.

(b) Liberal Construction. Despite any general rule of construction to the contrary, this Conservation Easement shall be liberally construed to effect the purposes of this Conservation Easement and the policy and purpose of Civil Code Section 815, et seq. If any provision in this instrument is found to be ambiguous, an

interpretation consistent with the purposes of this Conservation Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) Severability. If a court of competent jurisdiction voids or invalidates on its face any provision of this Conservation Easement Deed, such action shall not affect the remainder of this Conservation Easement Deed. If a court of competent jurisdiction voids or invalidates the application of any provision of this Conservation Easement Deed to a person or circumstance, such action shall not affect the application of the provision to other persons or circumstances.

(d) Entire Agreement. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Conservation Easement. No alteration or variation of this instrument shall be valid or binding unless contained in an amendment in accordance with Section 12.

(e) No Forfeiture. Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

(f) Successors. The covenants, terms, conditions, and restrictions of this Conservation Easement Deed shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors, and assigns and shall constitute a servitude running in perpetuity with the Property.

(g) Termination of Rights and Obligations. A party's rights and obligations under this Conservation Easement terminate upon transfer of the party's interest in the Conservation Easement or Property, except that liability for acts or omissions occurring prior to transfer shall survive transfer.

(h) Captions. The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon its construction or interpretation.

(i) No Hazardous Materials Liability. Grantor represents and warrants that it has no knowledge or notice of any Hazardous Materials (defined below) or underground storage tanks existing, generated, treated, stored, used, released, disposed of, deposited or abandoned in, on, under, or from the Property, or transported to or from or affecting the Property.

Despite any contrary provision of this Conservation Easement Deed, the parties do not intend this Conservation Easement to be, and this Conservation Easement shall not be, construed such that it creates in or gives to Grantee any of the following:

(1) The obligations or liability of an "owner" or "operator," as those terms are defined and used in Environmental Laws (defined below), including, without limitation, the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (42 U.S.C. Section 9601 et seq.; hereinafter, "CERCLA"); or

(2) The obligations or liabilities of a person described in 42 U.S.C. Section 9607(a)(3) or (4); or

(3) The obligations of a responsible person under any applicable Environmental Laws; or

(4) The right to investigate and remediate any Hazardous Materials associated with the Property; or

(5) Any control over Grantor's ability to investigate, remove, remediate or otherwise clean up any Hazardous Materials associated with the Property.

The term "Hazardous Materials" includes, without limitation, (a) material that is flammable, explosive or radioactive; (b) petroleum products, including by-products and fractions thereof; and (c) hazardous materials, hazardous wastes, hazardous or toxic substances, or related materials defined in CERCLA, the Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.; hereinafter "RCRA"); the Hazardous Materials Transportation Act (49 U.S.C. Section 6901 et seq.; hereinafter "HTA"); the Hazardous Waste Control Law (California Health & Safety Code Section 25100 et seq.; hereinafter "HCL"); the Carpenter-Presley-Tanner Hazardous Substance Account Act (California Health & Safety Code Section 25300 et seq.; hereinafter "HSA"), and in the regulations adopted and publications promulgated pursuant to them, or any other applicable Environmental Laws now in effect or enacted after the date of this Conservation Easement Deed.

The term "Environmental Laws" includes, without limitation, CERCLA, RCRA, HTA, HCL, HSA, and any other federal, state, local or administrative agency statute, ordinance, rule, regulation, order or requirement relating to pollution, protection of human health or safety, the environment or Hazardous Materials. Grantor represents, warrants and covenants to Grantee that activities upon and use of the Property by Grantor, its agents, employees, invitees and contractors will comply with all Environmental Laws.

(j) Warranty. Grantor represents and warrants that there are no outstanding mortgages, liens, encumbrances or other interests in the Property

(including, without limitation, mineral interests) which have not been expressly subordinated to this Conservation Easement Deed, and that the Property is not subject to any other inconsistent conservation easement.

(k) Additional Easements. Grantor shall not grant any additional easements, rights of way or other interests in the Property (other than a security interest that is subordinate to this Conservation Easement Deed), or grant or otherwise abandon or relinquish any water agreement relating to the Property, without first obtaining the written consent of Grantee. Grantee may withhold such consent if it determines that the proposed interest or transfer is inconsistent with the purposes of this Conservation Easement or will impair or interfere with the conservation values of the Property. This Section 13(k) shall not prohibit transfer of a fee or leasehold interest in the Property that is subject to this Conservation Easement Deed and complies with Section 10.

(l) Recording. Grantee shall record this Conservation Easement Deed in the Official Records of San Diego County, California, and may re-record it at any time as Grantee deems necessary to preserve its rights in this Conservation Easement.

IN WITNESS WHEREOF Grantor has executed this Conservation Easement Deed the day and year first above written.

[SIGNATURES ON FOLLOWING PAGE]

GRANTOR:

Approved as to form:

The Environmental Trust, Inc., a
California nonprofit public benefit corporation

By: _____, Pres.
Brad T. Thornburgh, President

Date: October 1, 2009

ACKNOWLEDGED:

Approved as to form:

City of Santee, a public entity

BY: _____

NAME: Keith Till

TITLE: City Manager

DATE: September 28, 2009

City Attorney
City of Santee

BY: _____
Shawn Hagerty

STATE OF CALIFORNIA)
)
COUNTY OF SAN DIEGO)

On October 1, 2009, before me, Susan G. Viloria, a Notary Public, personally appeared Brad T. Thornburgh, who proved to me on the basis of satisfactory evidence to be the person~~(s)~~ whose name~~(s)~~ is~~/are~~ subscribed to the within instrument and acknowledged to me that he~~/she/they~~ executed the same in his~~/her/their~~ authorized capacity~~(ies)~~, and that by his~~/her/their~~ signature~~(s)~~ on the instrument the person~~(s)~~, or the entity upon behalf of which the person~~(s)~~ acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

SUSAN G. VILORIA
Commission # 1833709
Notary Public - California
San Diego County
My Comm. Expires Jan 27, 2013

Susan J. Viloria (Seal)
Signature

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of San Diego }
On Sept 28, 09 (Date) before me, Patricia R Bell Notary Public (Here Insert Name and Title of the Officer)
personally appeared Keith Till (Name(s) of Signer(s))

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/~~are~~ subscribed to the within instrument and acknowledged to me that he/~~she/they~~ executed the same in his/~~her/their~~ authorized capacity(~~ies~~), and that by his/~~her/their~~ signature(~~s~~) on the instrument the person(~~s~~), or the entity upon behalf of which the person(~~s~~) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS ~~my hand~~ and official seal.

Signature Patricia R Bell (Signature of Notary Public)

PATRICIA R. BELL
Commission No. 1678120
NOTARY PUBLIC - CALIFORNIA
SAN DIEGO COUNTY
My Comm. Expires June 28, 2010

Place Notary Seal Above

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Conservation Easement Deed

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name:	Signer's Name:
☐ Individual	☐ Individual
☐ Corporate Officer — Title(s):	☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact	☐ Attorney In Fact
☐ Trustee	☐ Trustee
☐ Guardian or Conservator	☐ Guardian or Conservator
☐ Other:	☐ Other:
Signer Is Representing:	Signer Is Representing:
Top of thumb here	Top of thumb here

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EXHIBIT A

LEGAL DESCRIPTION
CARLTON OAKS

THE LAND REFERRED TO HEREIN IS SITUATED IN THE STATE OF CALIFORNIA, COUNTY OF SAN DIEGO AND IS DESCRIBED AS FOLLOWS:

PARCEL 3 OF PARCEL MAP NO. 16978, IN THE CITY OF SANTEE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, FILED IN THE OFFICE OF THE COUNTY RECORDED, OCTOBER 19, 1992 AS FILE NO. 1992-665040 OF OFFICIAL RECORDS.

EXHIBIT B

The Carlton Oaks Country Club restoration and enhancement project located in the City of Santee, County of San Diego, State of California, pursuant to the U.S. Army Corps of Engineers Order for Restoration, Notice of Violation of the Clean Water Act Enforcement Case No. 9321251000-TCD and the California Department of Fish & Game Streambed Alteration Agreement 5-631-93 and the Restoration and Enhancement Plans created thereunder.

EXHIBIT "C"
TO
CONSERVATION DEED

EXHIBIT AND DESCRIPTION OF PROJECT TO IMPROVE EXISTING TRAILS AND TO CONSTRUCT A TRAILHEAD

[ATTACHED BEHIND THIS COVER PAGE]

The project is comprised of park improvements within the 43-acre Mast Park West, as depicted in Exhibit "C" hereto. The Project goals are to enhance public access along the San Diego River (river parkway) while also providing protection of the site's wetland conservation values. All work would occur outside of the bird-nesting season to avoid disturbance to the Least bell's vireo, migratory birds, and raptors. The project will design, permit, and construct enhancements for river access (trailhead) and recreational trails, and educational signage about the habitat and its wildlife. As such, the project's physical enhancements fall into three basic components:

1) **Trails**: 2,500 feet of improved trails (decomposed granite surface)
2) **Trailhead**: 4,200 square feet in area, at Carlton Hills Boulevard; and
3) **Signage**: interpretive, educational and access control.

Trails

A network of paths exists on the property. The proposed trail improvements adhere to the alignment of existing trails (shown in red in Exhibit C hereto). The widest existing trail (varies from 10 to 12 feet in width) is the east-west trail that aligns with the San Diego River. The trail location utilizes an existing maintenance road, therefore eliminating the need for significant grading. Improvements to these trails include minor grubbing and grading to excavate a bed for stabilized decomposed granite. The trail would be edged with header boards to keep the decomposed granite in place.

Three pet waste stations would be installed at intervals along the trail. Vegetation overgrowth adjacent to the trails would be trimmed, as necessary. Removable bollards are also proposed at the west terminus of the trail, where the property abuts a privately-owned golf club.

The east-west trail surface would be 10 feet in width, and the secondary trails, which are generally north-south in their alignment, would retain a narrower width of four (4) feet. Peeler log fencing is proposed along both sides of the trails to discourage encroachment into adjacent riparian areas.

The proposed trail would extend the current trail in Mast Park westward, to terminate at a private golf course (Carlton Hills Golf Course). The trail could be extended further west in the future when the golf course is redeveloped, thereby linking the trail to the Mission trails Regional Park.

The secondary terminus, at the property line of a multiple-family residential development, is included with the project because it is currently used and has the potential to provide a connection to Carlton Oaks Drive and beyond to the Santee Lakes Regional Park and Preserve.

Trailhead
The trailhead will use an existing cleared area at Carlton Hills Boulevard (adjacent to an existing commercial center) to provide a very visible improved public access to Mast Park – West. The picture below is taken from Carlton Hills Boulevard looking west toward the proposed trailhead. First, the chain link fencing and gate would be removed and replaced with peeler log fencing. This area would be cleared of overgrown vegetation, and then re-graded to establish a level surface for decomposed granite and concrete pads (combined 280 square feet) to support a picnic table with benches and four bicycle racks. Removable bollards (three) would be installed at the existing Carlton Hills Boulevard driveway to control vehicular access, while allowing access for pedestrians and cyclists. The trailhead would be further enhanced by adding the following:

- ✓ Sign kiosk (manufactured and installed by Coast Recreation, Inc.)
- ✓ Bicycle rack
- ✓ Picnic table with benches
- ✓ Trash and recycling receptacles
- ✓ Pet waste station
- ✓ State Resources Agency sign highlighting the funding source for the park improvements (one of three).

Signage
Interpretive displays in the kiosk structure would contain information about environmental resources and rules for trail use. The picture is representative of this project feature. It is a rectangular (5 feet by 10 feet) hip kiosk with a double column design, and a standing seam powder-coated metal roof. Included are four interpretive signs, 3 feet by 2 feet in size, to consist of the aluminum frames, porcelain panels, and high grade pressure laminate. Graphic design services are included with the project.

Three additional free-standing regulatory signs would also be installed along the trail to inform users of the park rules. Other signs include the posting of three State Resources Agency signs, per grant specifications.

EXHIBIT C (Map) 6939

Omitted for recording purposes.

The Environmental Trust Bankruptcy
(Carlton Oaks project – APN 383-071-08)
San Diego County

6940

CERTIFICATE OF ACCEPTANCE

THIS IS TO CERTIFY that the interest in real property conveyed by the conservation easement deed, dated DATE from The Environmental Trust to the STATE OF CALIFORNIA, is hereby accepted by the undersigned officer on behalf of the State of California, pursuant to authority conferred by authorization of the Wildlife Conservation Board, Department of Fish and Game, Natural Resources Agency, State of California, adopted on November 20, 2008. and the grantee consents to the recordation thereof by its duly authorized officer.

I hereby certify that all conditions for exemption have been complied with and this document is exempt from Department of General Services approval.

WILDLIFE CONSERVATION BOARD

By: _____
(authorized signatory)

STATE OF CALIFORNIA
Resources Agency
Department of Fish and Game

By: _____
John P. Donnelly
Executive Director
Wildlife Conservation Board

Date: 12/1/09



WRT WALLACE ROBERTS & TODD, inc

Environmental Trust Property
City of Santee

North

0 125FT 250FT 375FT 500FT

Appendix L
Responses to Comments on the
Draft Initial Study/Mitigated Negative Declaration

The Draft Initial Study/Mitigated Negative Declaration (IS/MND) for the San Diego River Trail - Carlton Oaks Golf Course Segment Project was distributed for public review on March 15, 2017, initiating a 30-day public review period ending on April 14, 2017. The document was made available online, at public libraries in the project area, and at SANDAG's office. A total of eight letters and emails were received before the close of the public comment period. Pursuant to California Environmental Quality Act (CEQA) Guidelines §15088(a), "the lead agency shall evaluate comments on environmental issues received from persons who reviewed the Draft EIR and shall prepare a written response." All comment letters received on the Draft IS/MND were evaluated for environmental issues, and written responses to comments on environmental issues were prepared.

Table 1 provides a list of the comment letters received, including details on the agency, organization, or individual that submitted the letter and the date of the letter. This appendix presents written responses to comments on environmental issues raised in these letters. The written responses describe the disposition of significant environmental issues raised, as required by CEQA Guidelines §15088(c).

Table 1
COMMENT LETTERS RECEIVED ON THE DRAFT IS/MND FOR THE SAN DIEGO RIVER TRAIL – CARLTON OAKS SEGMENT PROJECT

Comment Letter	Public Agency, Organization, of Individual	Date of Letter
A	State Clearinghouse	April 14, 2017
B	California Department of Transportation	March 22, 2017
C	California Department of Fish and Wildlife	April 14, 2017
D	City of Santee	April 13, 2017
E	Padre Dam Municipal Water District	April 14, 2017
F	Preserve Wild Santee	April 8, 2017
G	Save Mission Trails	March 21, 2017
H	Alexandria Lowry	April 13, 2014

STATE OF CALIFORNIA
GOVERNOR'S OFFICE of PLANNING AND RESEARCH
STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

April 14, 2017

Andrew Martin
San Diego Association of Governments
401 B Street, Suite 800
San Diego, CA 92101

Subject: San Diego River Trail Carlton Oaks Golf Course Segment
SCH#: 2017031037

Dear Andrew Martin:

A-1

The State Clearinghouse submitted the above named Mitigated Negative Declaration to selected state agencies for review. The review period closed on April 13, 2017, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

Please call the State Clearinghouse at (916) 445-0613 if you have any questions regarding the environmental review process. If you have a question about the above-named project, please refer to the ten-digit State Clearinghouse number when contacting this office.

Sincerely,

Scott Morgan
Director, State Clearinghouse

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

A-1 This comment letter confirms receipt and distribution of the Draft IS/MND and documents the proposed project's compliance with State Clearinghouse review requirements for the Draft IS/MND pursuant to CEQA. No further response is required.

Document Details Report
State Clearinghouse Data Base

SCH#	2017031037
Project Title	San Diego River Trail Carlton Oaks Golf Course Segment
Lead Agency	San Diego Association of Governments
Type	MND Mitigated Negative Declaration
Description	SANDAG proposes to construct the Carlton Oaks Golf Course Segment of the SDRT as a Class I bikeway for the exclusive use of people walking and riding bikes. The proposed bike path would extend a distance of approx two miles between Carlton Hills Blvd and West Hills Parkway through Mast Park, Mast Park West, and the Carlton Oaks Golf Course. The proposed project consists of two segments.

Lead Agency Contact

Name	Andrew Martin
Agency	San Diego Association of Governments
Phone	619 595-5375 *Fax*
email	
Address	401 B Street, Suite 800
City	San Diego *State* CA *Zip* 92101

Project Location

County	San Diego
City	San Diego, Santee
Region	
Lat / Long	32° 50' 16" N / 117° 0' 30" W
Cross Streets	West Hills Parkway and Carlton Hills Blvd
Parcel No.	
Township	*Range* *Section* *Base*

Proximity to:

Highways	52
Airports	Gillespie Field
Railways	
Waterways	San Diego River, Forester Creek, Santee Lakes
Schools	Mult
Land Use	

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Cumulative Effects; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Landuse; Minerals; Noise; Other Issues; Population/Housing Balance; Public Services; Recreation/Parks; Septic System; Sewer Capacity; Social; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian

Reviewing Agencies Resources Agency; Department of Fish and Wildlife, Region 5; Department of Parks and Recreation; Department of Water Resources; Caltrans, Division of Aeronautics; California Highway Patrol; Caltrans, District 11; Native American Heritage Commission; Regional Water Quality Control Board, Region 9

Date Received 03/15/2017 *Start of Review* 03/15/2017 *End of Review* 04/13/2017

DEPARTMENT OF TRANSPORTATION
DISTRICT 11, DIVISION OF PLANNING
4050 TAYLOR ST, M.S. 240
SAN DIEGO, CA 92110
PHONE (619) 688-6960
FAX (619) 688-4299
TTY 711
www.dot.ca.gov

*Serious Drought.
Help save water!*

March 22, 2017

11-SD-52
PM 13.6
San Diego River Trail
MND

Mr. Andrew Martin
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

Dear Mr. Martin:

Thank you for including the California Department of Transportation (Caltrans) in the review process for the San Diego River Trail, Carlton Oaks Golf Segment project located adjacent to State Route 52 at West Hills Drive. Caltrans has received the Mitigated Negative Declaration (MND) for this project and have the following comments:

Any work performed within Caltrans right-of-way (R/W) will require discretionary review and approval by Caltrans and an encroachment permit will be required for any work within the Caltrans R/W prior to construction.

B-1

Additional information regarding encroachment permits may be obtained by contacting the Caltrans Permits Office at (619) 688-6158. Early coordination with Caltrans is strongly advised for all encroachment permits.

If you have any questions, please contact Roy Abboud at (619) 688-6968 or by email at roy.abboud@dot.ca.gov.

Sincerely,

JACOB M. ARMSTRONG, Branch Chief
Developement Review Branch

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

B-1 The proposed project would not extend into the Caltrans right-of-way. If it is determined during the final design phase that work would be required within Caltrans right-of-way, SANDAG would coordinate with Caltrans to obtain an encroachment permit and any other required reviews and approvals from Caltrans.

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

April 14, 2017

Andrew Martin, Senior Regional Planner
San Diego Association of Governments
401 B Street Suite 800
San Diego, California 92101
Andrew.martin@sandag.org

Subject: Comments on the Mitigated Negative Declaration for the San Diego River Trail Carlton Oaks Golf Course Segment, City of Santee, San Diego County, California (SCH # 2017031037)

Dear Mr. Martin:

The California Department of Fish and Wildlife (Department) has reviewed the above-referenced draft Mitigated Negative Declaration (MND) for the San Diego River Trail (SDRT) Carlton Oaks Golf Course Segment (proposed project). The following statements and comments have been prepared pursuant to the Department's authority as Trustee Agency with jurisdiction over natural resources affected by the project (California Environmental Quality Act, [CEQA] Guidelines § 15386) and pursuant to our authority as a Responsible Agency under CEQA Guidelines section 15381 over those aspects of the proposed project that come under the purview of the California Endangered Species Act (CESA; Fish and Game Code [FGC] § 2050 *et seq.*) and FGC section 1600 *et seq.* The Department also administers the Natural Community Conservation Planning (NCCP) program. The City of San Diego participates in the NCCP by implementing its Multiple Species Conservation Plan (MSCP) Subarea Plan (SAP); the City of Santee (City) participates in the NCCP program in preparing its MSCP SAP.

C-1

The proposed project is located in the cities of San Diego and Santee in the area bounded by West Hills Parkway to the west, Mast Park to the east, Carlton Oaks Golf Course to the north, and the San Diego River to the south. The San Diego Association of Governments (SANDAG) proposes to construct a Class I bikeway as a transportation corridor for the exclusive use of walking and bike riding. The transportation corridor would extend a distance of approximately two miles between Carlton Hills Boulevard and West Hills Parkway through Mast Park, Mast Park West, the San Diego River, and the Carlton Oaks Golf Course. The proposed project consists of two segments, the Mast Park/Mast Park West Segment and the Golf Course Segment.

Mast Park/Mast Park West Segment

The Mast Park/Mast Park West Segment begins at the proposed project's eastern terminus in the Mast Park parking lot and extends west under the Carlton Hills Boulevard bridge and through Mast Park West to the Carlton Oaks Golf Course. The portion of this segment generally between the Carlton Hills Boulevard Bridge and the Carlton Oaks Golf Course is subject to a conservation easement (CE) held by the Department. The proposed project would begin at the southeastern corner of the paved parking lot in Mast Park and extend southwest down a vegetated slope and adjacent to a driveway that leads to an overflow parking area with a decomposed granite (DG) surface. At the bottom of the slope, the proposed project would

C-1 This comment provides introductory statements about the roles and responsibilities of the California Department of Fish and Wildlife (CDFW) and summarizes the project description contained in the Draft IS/MND. No further response is required.

continue westward under the Carlton Hills Boulevard Bridge across a small drainage, then it would follow the alignment of an existing DG trail that extends east-west and northeast-southwest through Mast Park West for approximately 0.5 mile to the edge of the Carlton Oaks Golf Course. This existing trail consists of an eight- to 14-foot-wide DG trail lined with split-rail fencing, interpretive signage, benches at select locations, and a trailhead at Carlton Hills Boulevard. The east-west portion of the existing trail is approximately 14 feet wide with split-rail fencing placed approximately two feet inside the DG trail on both sides. The northeast-southwest portion of the existing trail is approximately eight feet wide and lined with split-rail fencing on both sides. The proposed project would be constructed along this existing trail alignment. The portion of the dirt trail between the trailhead and the Carlton Hills Boulevard Bridge would not be improved. Existing interpretive signage, benches, and bike racks along the existing trail would not be affected and would remain in their current location.

This segment of the transportation corridor is proposed to be a 10-foot-wide, all-weather, paved surface with two-foot-wide pervious shoulders on each side. Split-rail fencing would be installed along both sides of the bike path, although in some areas the existing split-rail fencing along the existing trail would be relocated and incorporated into the project. Along the east-west portion, the existing fencing on both sides of the existing trail would be moved to the outer edges of new bike path.

Along the northeast-southwest portion, the existing trail would be widened on the west side and the existing fencing along the eastern edge of the trail would remain while the existing fencing along the western edge of the existing trail would be moved to the outer edge of the new bike path. The drainage crossing just west of the Carlton Hills Boulevard Bridge is proposed as a ford with a natural bottom. Slope protection or similar measures to control erosion is also proposed at locations on the east side of the bike path in slope areas along the northeast-southwest portion of the bike. Manufactured slopes would be created to accommodate the bike path at a 2:1 or 3:1 gradient, where erosion is evident and vegetated with native plant species prior to completion of project construction.

C-1 cont.

Golf Course Segment

The Golf Course Segment begins at the eastern end of the Carlton Oaks Golf Course at the terminus of the Mast Park/Mast Park West Segment and extends west along a portion of the southern edge of the golf course to its western terminus at West Hills Parkway. This segment would be constructed on, or adjacent to, the existing berm along the southern edge of the golf course and northern edge of the river for a distance of approximately 1.5 miles. It would consist of a 10-foot-wide, all-weather, paved surface with two-foot-wide pervious shoulders and split-rail fencing on each side. The existing berm is proposed to be expanded, rebuilt, and/or reinforced. Slope protection or similar measures is proposed to control erosion. Manufactured slopes would be created at a 2:1 or 3:1 gradient and would be vegetated with native species prior to completion of project construction. Near the west end, the proposed project would install a bridge or similar structure to cross Sycamore Creek.

Other Project Features

In select areas where the proposed project would abut the golf course in close proximity to the playing field area, protective fencing would be installed along short sections on the north side (golf course side) of the project to protect path users from errant golf balls. Trees removed from

the golf course would be replaced at a 1:1 ratio with native or locally appropriate tree species that match the current golf course tree palette. Several retaining walls up to seven feet high would be constructed in certain locations along the north side of the project alignment within the golf course to reduce the proposed project's encroachment into the existing golf course. Additional retaining walls may be constructed in conjunction with the options for the West Hills Parkway connection. Pedestrian-scaled lighting may be provided at select locations along the proposed bike path to provide safety and security consistent with the San Diego River Park Master Plan.

Options for Connecting to West Hills Parkway

C-1 cont.

At the proposed project's western end, SANDAG is considering three options for a connection to West Hills Parkway. The environmental effects of these options are analyzed in the draft MND. Each of these options would include a staircase at the bottom of the ramp that would connect to the existing West Hills Parkway sidewalk. The Switchback Ramp Option would construct a switchback ramp that would ascend north and then south along the slope adjacent to the roadway, with a connection point to the existing sidewalk near the westbound SR-52 overcrossing structure. The Curvilinear Ramp Option would include construction of a curvilinear ramp that would ascend northward along the slope and then curve west to connect perpendicularly to the existing sidewalk. While the Linear Ramp Option consists of a linear ramp along the western edge of the golf course that would gradually ascend northward and connect to the existing sidewalk just south of the intersection of West Hills Parkway and Carlton Oaks Drive.

We offer our comments and recommendations to assist SANDAG in avoiding, minimizing, and adequately mitigating project-related impacts to biological resources.

Existing Conservation Easement Compatibility

C-2

As identified by the draft MND, implementing the project within the existing CE would be inconsistent with its terms. While the CE allowed for the construction and operation of two trails through the property, the proposed project is two to four feet wider than that specified by the CE. This proposal would impact sensitive species and habitats the CE is intended to protect. Provisions within the CE allowed the City of Santee to construct the current trails, which include edged DG surfaces with split-rail fences. The City of Santee previously constructed the DG trails as envisioned by the CE. However, the proposed project would widen the existing surfaces with impervious surfaces—the CE does not contemplate impervious surfaces. The Department believes that impervious surfaces were specifically identified within the CE to reduce potential impacts related to water quality, erosion, hydrologic considerations, and aesthetics. While the draft MND states that an amendment to the CE is necessary, it should analyze how the proposed project would accomplish the goals of the CE.

C-3

C-4

C-5

Based on our review of the wildlife conservation easement (San Diego County Recorder's Office Document No. 2009-0694057) recorded over 43 acres (Assessor's Parcel Number 383-071-08) on December 16, 2009, and held by the Department for the benefit of wildlife, we disagree with the draft MND's conclusion that "based on an initial study, the Draft MND concludes that the project would not have a significant effect on the environment." (SANDAG, 2017; p. 6.) The project proposes to expand the physical dimensions of the existing trail to accommodate a transportation corridor, impact the City of San Diego's Multi-Habitat Planning Area (MHPA),

C-2 The Draft IS/MND notes in Section 4.0, Other Agency Permits and Approvals (page 14), that the project would require an amendment to the 2009 Mast Park Conservation Easement (included as Appendix K of the Final IS/MND) held by CDFW. In addition, SANDAG acknowledges that the Conservation Easement (Exhibit C, page 18) called for the east-west trail to have a width of 10 feet, and for the generally north-south trails to have a narrower width of 4 feet. The Conservation Easement called for both trails to consist of a decomposed granite (DG) surface, and for peeler log fencing along sides of the trails to discourage encroachment into adjacent riparian areas.

SANDAG further acknowledges that the project proposes trail widths that are wider than the widths called for in the Conservation Easement. However, CDFW is incorrect when it asserts that, "The City of Santee previously constructed the DG trails as envisioned by the CE." In order to understand and evaluate how the project would affect biological resources within the Conservation Easement, it is necessary to consider the *actual* conditions of the existing trails, which are different than what was called for in the Conservation Easement. The DG surface of the existing east-west trail is approximately 14 feet wide, with existing lodge pole fencing located about two feet inside the edge of trail on either side. Thus, the existing east-west trail is already approximately 4 feet wider

C-2 cont. than the 10 foot-wide trail called for in the Conservation Easement. The DG surface of the existing north-south trail is approximately 8 feet wide with lodge pole fencing along both sides, which is approximately 4 feet wider than the 4 foot-wide trails called for in the Conservation Easement.

The proposed project through the Mast Park West Conservation Easement would be constructed along the existing alignment of the existing DG trails that extend generally east-west and north-south through Mast Park West for approximately 0.5 mile. The project would construct a 10-foot-wide all-weather surface with two-foot-wide unpaved shoulders and lodge pole fencing on each side, for a total width of approximately 14 feet. For the east-west segment, the all-weather surface and unpaved shoulders would be located within the existing 14-foot-wide DG trail, and the lodge pole fencing would edge the shoulders. For the north-south segment, the project would utilize the existing 8-foot-wide trail, and the additional approximately 6 feet of width would be located on either side of the existing trail (three feet on either side).

SANDAG has designed the proposed project to utilize existing trails in order to avoid adverse impacts to habitat and sensitive species within Mast Park West to the greatest extent feasible. Where there are adverse impacts to biological resources within Mast Park West (such as the widening of the north-south trail, the drainage improvements to low-flow crossings near Carlton Hills Boulevard, and temporary noise levels during construction) and elsewhere in the project area, the Draft IS/MND identified 12 feasible mitigation measures (BIO-1 through BIO-12) that would avoid these impacts or substantially lessen them to below a level of significance. As documented in the Draft IS/MND, implementation of mitigation measures BIO-1 through BIO-12 would ensure there are no significant impacts to sensitive species and habitats within Mast Park West and throughout the project area.

C-3 SANDAG acknowledges that the Conservation Easement called for DG trails, and as described and analyzed in the Draft IS/MND, proposes to provide a multi-use path with an all-weather surface for the proposed project. SANDAG agrees with CDFW that it is important to analyze potential impacts of impervious surfaces related to "water quality, erosion, hydrologic considerations, and aesthetics," and included a detailed analysis of each issue in the Draft IS/MND. As summarized below, the Draft IS/MND analysis demonstrates that constructing the project with impervious surfaces would not result in significant impacts related to water quality, erosion, hydrology, or aesthetics. CDFW does not present any facts or evidence supporting its assertion that impervious surfaces are inconsistent with the purposes of the Conservation Easement because such surfaces would have impacts related to water quality, erosion, hydrologic considerations, and aesthetics.

C-3 cont. **Water Quality:** As discussed in Section 7.9 (a) of the Draft IS/MND (page 63), source control and site design Best Management Practices identified in the Water Quality Analysis prepared for the project (Appendix I) would be incorporated into the project to avoid water quality impacts related to discharge of pollutants into the San Diego River and downstream receiving waters. The proposed project would be used by people walking and biking, and therefore it would not collect pollutants that would be transported into nearby water bodies or habitats during storm events. Additionally, the project would be subject to conditions contained in the Section 401 Clean Water Act Water Quality Certification that is required for the project to protect water quality, such as implementation of source control and site design Best Management Practices. Examples include, but are not limited to, spill prevention and control, sediment/erosion control, and materials/storage measures; vehicle and equipment cleaning protocols; maintaining natural drainage pathways and hydrologic features; and minimize soil compaction.

Erosion: The project has been designed to minimize erosion potential, as discussed in Section 7.6(b) and Section 7.9(c) in the Draft IS/MND. For the portion of the proposed project within Mast Park West, runoff would be directed to three existing low-flow drainage crossings with surrounding rip-rap or similar erosion prevention design. Within the golf course segment, portions of the proposed project would be constructed on, or adjacent to, the existing berm, and some areas along the existing berm have been subject to erosion. The project would reinforce and widen the berm to accommodate the proposed project. In certain areas where erosion is evident, slope protection would be installed on the south side of the berm to provide erosion control. Manufactured slopes on both sides of the berm would also be vegetated to control erosion. Runoff would be conveyed toward the golf course to existing localized collection areas that would infiltrate into landscaped areas or continue to direct flows into the river through existing culverts and the existing storm drain system.

Hydrology: As discussed in Section 7.9(c) and (d) in the Draft IS/MND, the project would increase the 100-year on site storm flow within the localized basins within the golf course by approximately 4.74 cubic feet per second (cfs) and by approximately 0.38 cfs east of the golf course (within Mast Park West). This change of about 4.74 cfs is negligible compared to the overall flowrate for the San Diego River of approximately 36,000 to 38,000 cfs according to FEMA and 48,000 to 50,000 cfs according to the City of Santee. Therefore, the proposed project would not adversely affect the hydrologic conditions of the project area or downstream areas associated with substantial erosion, siltation, or flooding.

C-3 cont. **Aesthetics:** The proposed all-weather surface would be at ground level and the project occurs in an area that is not highly visible from surrounding public vantage points, as discussed in Section 7.1(a) in the Draft IS/MND (page 18). Moreover, the project would be constructed along the alignments existing trails where previous disturbance has occurred within the visual context of this portion of the San Diego River corridor. The project proposes to incorporate design treatments into the bike path surface such as use of earth-toned colors and textures during final design to further visually blend project elements with the existing visual environment.

C-4 SANDAG acknowledges that the Mast Park West property includes the following wildlife and habitat values ("conservation values"): high quality habitat for least Bell's vireo, Southern California rufous-crowned sparrow, yellow-breasted chat, yellow warbler, and the southwestern pond turtle, and contains southern cottonwood-willow riparian forest, fresh water pond, and non-native vegetation habitats, and that the Conservation Easement seeks to "prevent any use of the (Mast Park West) property that will impair or interfere with the conservation values of the Property." (Conservation Easement, Page 2, #1) The analysis of the Draft IS/MND and responses to comments C-2 through C-22 demonstrate that the proposed project including mitigation measures would not result in significant impacts to any of these high quality habitats or sensitive species, and therefore, the proposed project would not impair or interfere with the conservation values of the Property. In addition, prior to construction, SANDAG would be required by state and federal resource agencies (including CDFW) that are responsible for protecting these habitats and species to obtain permit approvals and implement compensatory and other mitigation measures to fully offset impacts to these habitats and species. The proposed project would also require an amendment to the existing Conservation Easement, as explained in the Draft IS/MND.

C-5 CDFW expresses disagreement with the Draft IS/MND conclusion that the proposed project would not have a significant effect on the environment for several alleged reasons, each of which are addressed below. As explained below, CDFW does not present any facts or other evidence supporting its assertion that the proposed project would have a significant effect on the environment.

"The project proposes to expand the physical dimensions of the existing trail to accommodate a transportation corridor"

Please also see response to comment C-2 explaining that the proposed project has been designed to utilize existing trails in order to avoid and minimize impacts to sensitive habitat and species within Mast Park West as much as is feasible. As also explained in the response to comment C-2,

C-5 cont. the Draft IS/MND identifies 12 feasible mitigation measures (BIO-1 to BIO-12) to avoid or substantially lessen impacts to biological resources to a level less than significant. It also identifies one feasible mitigation measure for the protection of cultural resources. CDFW does not provide any facts or evidence demonstrating that the physical dimensions of the proposed project (or any other aspects of the proposed project) would result in a significant and unavoidable effect on the environment.

"The project proposes to impact the City of San Diego's Multi-Habitat Planning Area (MHPA)"

The proposed project is partially located within the City of San Diego MHPA, and Section 7.4(f) of the Draft IS/MND included a detailed analysis demonstrating that the proposed project would not conflict with the City of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan or any other adopted or approved habitat conservation plan. CDFW does not present any facts or evidence supporting its assertion that the project would "impact" the City of San Diego's MHPA and therefore have a significant and unavoidable effect on the environment.

"The project proposes to deposit fill within the San Diego River"

Section 7.4(c) of the Draft IS/MND included a detailed analysis demonstrating that the proposed project would implement mitigation measures BIO-4, BIO-5, and BIO-11 to ensure that it would not have a significant impact related to filling or other effects to the San Diego River and other wetlands and non-wetland water resources protected by state and federal laws and regulations. Implementation of mitigation measures BIO-4, BIO-5, and BIO-11, among other things, would require SANDAG to perform mitigation for impacts to water resources and habitats associated with San Diego River, subject to the approval of CDFW and other resource agencies. Section 7.9(c) and (d) of the Draft IS/MND included detailed analysis showing that the design of the proposed project, including the import of approximately 10,000 cubic yards of fill (net) into the San Diego River floodplain, would not result in any significant impacts related to on- or off-site flooding or erosion. CDFW does not present any facts or evidence that the mitigation measures are inadequate or infeasible or otherwise support its assertion that the project's depositing of fill within the San Diego River would result in a significant and unavoidable environmental effect.

"The project proposes to increase the anthropogenic exposure to species listed under CESA and the federal Endangered Species Act (ESA) and other sensitive species"

Section 7.4(b) of the Draft IS/MND (page 40) provided an analysis demonstrating that potential indirect impacts of the project to sensitive

C-5 cont.

deposit fill within the San Diego River, and increase the anthropogenic exposure to species listed under CESA and the federal Endangered Species Act (ESA) and other sensitive species. The project-proposed expansion and increase is not contemplated by the original CE and is contrary to the purpose and intent (biological mitigation) for which the CE was established. The Department believes that the proposed project has the potential to significantly affect the environment based on the potential impacts to biological resources and impacts to an existing mitigation site.

C-6

Potential Take of Listed Species

The project is proposed to be constructed within sensitive habitats (e.g., cottonwood-southern willow forest, and fresh water pond) that support resident and migratory sensitive species including least Bell's vireo (*Vireo bellii pusillus*), southwestern pond turtle (*Emys marmorata*), and yellow-breasted chat (*Icteria virens*) among others. The draft MND does not provide an analysis substantiating its conclusion that protected species "...would not be directly affected by the proposed project...." (SANDAG, 2017; p. 48). The Department's review of the draft MND suggests the proposed project may result in direct and/or indirect loss of habitat (e.g., trail widening, increased anthropogenic presence, noise and light pollution, and construction activities) supporting sensitive species and could result in direct and/or indirect take (as defined by FGC § 86) of CESA-listed species or species of special concern (SSC). Take of CESA-listed species is prohibited unless authorized through an incidental take permit, NCCP permit or equivalent. Currently SANDAG does not participate in an NCCP. Accordingly, we recommend that the final MND include an analysis of the proposed project's potential to directly and indirectly impact (e.g., noise, lighting, increased anthropogenic presence, etc.) CESA-listed and SSC species, and that an incidental take permit pursuant to FGC section 2080 *et seq.* is pursued to avoid unauthorized take of CESA-listed species.

C-7

Furthermore, the draft MND identified that white-tailed kite (*Icteria virens*) utilized the biological study area. White-tailed kite is a Fully Protected Species pursuant to FGC section 3511. No mechanism exists to permit take of Fully Protected Species unless authorized pursuant to a NCCP. Accordingly, any potential impacts to Fully Protected Species must be thoroughly analyzed to ensure take of the species is completely avoided.

C-8

Increased Anthropogenic Presence

The draft MND does not analyze the number, type, frequency, or intensity of land uses associated with replacing the current trail with a transportation corridor. Of particular concern are impacts to the existing mitigation area conserved for the benefit of sensitive species and their habitats. Additionally, the draft MND does not fully analyze the impacts from these activities on the San Diego River corridor, nor does it provide mitigation measures to address these impacts.

C-9

Human habitation and recreational uses have been demonstrated to impact a suite of avian, mammalian, amphibian, and reptile species; for example, Bosakowski *et al.* (1992) found that nest site location in Cooper's hawks appeared to be significantly more tolerant of car traffic than sources of human habitation. Similarly, Knight and Skagen (1988) observed that the effects of recreation activities on raptor species include: (1) altering the distribution of raptors; (2) disrupting nest attentiveness; (3) causing abandonment of breeding territories; (4) reducing productivity; and (5) altering foraging behavior. Miller *et al.* (2001) found that natural land

C-5 cont. habitat and species, including impacts related to potential increases in human activity in the project area, would not result in significant effects to sensitive species of habitat. The project would include a fence along both sides to discourage people from entering sensitive habitat areas adjacent to the proposed project. Moreover, the existing habitats and species in the project area already experience anthropogenic exposure due to the pedestrians and bicyclists using the existing trails and users of the existing golf course. CDFW does not present any facts or evidence supporting its assertion that anthropogenic exposure would increase to such an extent under the proposed project, and that the species present in the project area would be so vulnerable to such an increase in anthropogenic exposure, that it would result in one or more significant and unavoidable impacts to a species listed under CESA, ESA, or otherwise considered sensitive. Please also see response to comment C-8.

C-6 The comment incorrectly asserts that the Draft IS/MND does not provide analysis to substantiate the conclusion that protected species would not be directly affected by the project. In fact, Section 7.4 of the Draft IS/MND provided a detailed analysis of potential direct and indirect project impacts to special status species based on empirical data and field surveys of the project area conducted for the project in accordance with applicable protocols. Section 7.4 analyzes in detail the potential for impacts to special status species associated with "trail widening, increased anthropogenic presence, noise and light pollution, and construction activities," contrary to CDFW's assertion that analysis of these topics was not included in the Draft IS/MND.

The Draft IS/MND concluded that the project could result in potentially significant direct and indirect impacts to special status animal species, including Cooper's hawk, least Bells' vireo, white-tailed kite, yellow-breasted chat, and yellow warbler. Feasible mitigation measures identified in the Draft IS/MND (BIO-1 through BIO-4) and MMRP (Appendix M) are proposed by SANDAG that would avoid or substantially lessen impacts to below a level of significance. The analysis contained in Section 7.4(a) notes on page 31 that the project would permanently impact approximately 5.7 acres of USFWS-designated critical habitat for the least Bell's vireo, of which approximately 0.52 acre would be to wetland or riparian habitats that are potentially suitable for least Bell's vireo. As such, SANDAG anticipates that a Section 7 consultation under the Endangered Species Act with the USFWS will be required. If it is determined during the Section 7 consultation that a take of vireo or other listed species would occur, then an Incidental Take Permit pursuant to

C-6 cont. Section 2080 of the Fish and Game Code may also be required from CDFW. Section 4.0 of the Final IS/MND (page 14) has been revised to add a Section 7 consultation with USFWS and an Incidental Take Permit from CDFW to the list of permits and approvals from other agencies that SANDAG may need for project implementation.

C-7 Section 7.4(a) of the Draft IS/MND included a detailed analysis of potential direct and indirect project impacts to special status species, including the white-tailed kite and concludes that the project could result in potentially significant direct and indirect impacts to the white-tailed kite. Mitigation measures identified in the Final IS/MND (BIO-1 through BIO-4) and MMRP (Appendix M) are proposed by SANDAG that would avoid or substantially lessen impacts to this special status species to below a level of significance.

C-8 Please see response to comment C-5 explaining that the Draft IS/MND did include an analysis of indirect impacts to biological resources associated with increased human activity (anthropogenic exposure) in the project area. The Draft IS/MND did not analyze "the number, type, frequency, or intensity of land uses" associated with the proposed project because the proposed project does not propose any land use changes; the Draft IS/MND does provide a detailed, 10-page description of the proposed project in Chapter 2.0, and a comprehensive analysis of the indirect and direct environmental impacts associated with all aspects of construction and operation of the proposed project as required by CEQA.

C-9 This comment cites several studies that have examined the effects of human habitation and recreational uses on various avian, mammalian, amphibian, and reptile species, but as explained below, this comment does not present any information that would change the conclusions of the Draft IS/MND. Section 7.4 of the Draft IS/MND provided a detailed analysis of the proposed project's direct and indirect impacts to sensitive species, habitats, and other biological resources, and explains why the 12 feasible mitigation measures identified in the analysis would ensure that biological resources impacts are less than significant. Moreover, the CDFW comment letter neglects to mention that the proposed project area is already subject to various activities associated with human habitation including pedestrians, bicyclists, golfers, golf course vehicles and equipment (e.g., golf carts, lawn mowers), vehicle traffic noise from the adjacent SR 52 freeway and other adjacent major roadways, and adjacent urban development.

CDFW first cites Bosakowski *et al.* (1992), in which Bosakowski *et al.* conclude that nesting Cooper's hawks in northern New Jersey and southeastern New York, "can be remarkably tolerant to car traffic." SANDAG has reviewed this study, and contrary to CDFW's comment,

C-9 cont.

managers can implement spatial and behavioral restrictions to reduce the effects of recreationists' presence on wildlife while Knight and Skagen (1988) conclude that recreational activities can be mitigated either through preclusion of recreation or through spatial restrictions on recreational opportunities. In order to address potential impacts from edge effects we recommend SANDAG review alternatives that realign the transportation corridor through existing streets or propose alignments that do not encroach on the San Diego River.

C-10

Increased anthropogenic use and a reliance on the proposed transportation corridor (presently a trail) will increase safety and maintenance efforts. According to the draft MND, "pedestrian-scaled lighting may be provided at select locations along the proposed bike path to provide safety and security consistent with the San Diego River Park Master Plan (City of San Diego 2013a), which calls for lighting along the San Diego River Pathway." (SANDAG, 2017.) Chief among these concerns is: lighting, user safety, and trash management.

Lighting: The use of 12-foot-tall metal or concrete light poles are inappropriate uses within a mitigation site supporting endangered, threatened, and sensitive species regardless of specifications within the San Diego River Park Master Plan. Lighting is of concern given the sensitive resources and wildlife corridor (e.g., the San Diego River) that would be adversely impacted by night lighting. The draft MND states that the lighting envisioned for the bikeway will "…consist of metal or concrete poles and triangular fixtures painted natural sand or warm gray/brown at a maximum height of 12 feet, and (2) be directional with shields to avoid light overspill into adjacent habitat. Proposed project lighting would comply with these design guidelines; lights would be shielded and directed towards the bike path and away from the adjacent San Diego River and its habitats." (SANDAG, 2017; p. 13.) However, lighting cannot be adequately shielded to avoid impacts to wildlife and wildlife corridors when the lighting proposed consists of 12-foot-high poles located directly within the affected habitat. Lighting within sensitive mitigation sites should be eliminated to avoid spillover effects. Furthermore, the draft MND states that construction is estimated to take approximately 12 months without mention of eliminating or mitigating night work during the bird nesting season (see comment below under Avian Nesting Season).

C-11

User Safety: The Department is concerned that the proposed project would result in additional habitat impacts from vegetation clearing associated with maintaining wide, visually open safety corridors along the transportation corridor. The draft MND should analyze the potential for safety-driven impacts to habitats (e.g. impacts related to initial and/or future clearing of vegetation, maintenance of such cleared area, etc.); identify compensatory mitigation, and identify the appropriate management entity and funding to implement management/patrolling of the transportation corridor without increasing habitat loss.

C-12

Trash Management: Efforts needed to manage trash and illegal dumping will increase commensurate with corridor use. The Department is concerned that the draft MND does not identify the need for additional management actions, an appropriate managing entity, or the accompanying funding to accomplish those actions. Unabated trash can artificially augment urban-adapted mesopredators, influence population dynamics, and degrade habitat quality. The final MND should identify a refuse management entity, identify a refuse management plan (with work schedule), and require sufficient funding to implement the refuse management plan.

C-9 cont. it does not conclude that, "Cooper's hawks appeared to be significantly more tolerant of car traffic *than sources of human habitation*" (emphasis added). As a result, this study does not provide evidence that the proposed project, which would provide a multi-use path for people to walk and bike, would have significant impacts on Cooper's hawk or any other sensitive species.

CDFW then cites Knight and Skagen (1988) to list several observed effects of "recreation activities" on raptor species and to identify "preclusion of recreation" and "spatial restrictions on recreational opportunities" as mitigation measures "to reduce the effects of recreationists' presence on wildlife." However, CDFW provides no further explanation of the types of "recreation activities" analyzed in that study; makes no attempt to connect the "observed effects" or mitigation measures reported in this study to conditions in the proposed project area or to the analysis of the proposed project. That said, SANDAG proposes to locate the proposed project within existing formal and informal trails to avoid biological resources impacts as much as feasible, and to provide fencing along both sides of the entire length of the proposed project as "spatial restrictions" to discourage people from entering sensitive habitat areas.

Similarly, CDFW cites Miller *et al.* (2001) to report that, "spatial and behavior restrictions (can) reduce the effects of recreationists' presence on wildlife" but makes no attempt to explain how this information is relevant to the Draft IS/MND analysis of biological resources impacts.

Please see response to comment D-21 for discussion of the multi-year public process that SANDAG engaged in to select the alignment of the proposed project.

C-10 Section 2.0 of the Draft IS/MND (page 13) described that lighting may be provided along the length of the proposed project and that final decisions about lighting and lighting design would be determined during final design in consultation with the resource agencies, including CDFW, during project permitting. If lighting is to be included along the proposed project, it would not be placed directly within sensitive habitat as asserted by CDFW, but within the developed footprint of the bike path (which within Mast Park West would be located within existing formal trails). CDFW asserts that lighting "should be eliminated to avoid spillover effects" but as explained in the Draft IS/MND, proposed lighting would be shielded "to avoid light overspill into adjacent habitat" (page 13). In other words, only lighting that avoids light overspill into adjacent habitat

C-10 cont. would be provided as part of this project; lighting that does overspill into adjacent habitat is not proposed and would not be provided as part of the proposed project.

In addition, CDFW raises concerns with night time construction, but the Draft IS/MND stated on page 13 that construction is anticipated to occur during daytime hours. No night time construction activities that would require lighting would occur.

C-11 The proposed project would not result in additional habitat impacts from vegetation clearing beyond the amounts that were identified in the Draft IS/MND. Impacts to habitat resulting from the project were comprehensively identified in Section 7.4(b) of the Draft IS/MND (see Table 3 on page 36). Impact areas were calculated to account for direct temporary and permanent habitat and sensitive vegetation community impacts. Direct temporary impacts are those that would be caused by construction activity, but vegetation/habitat would be re-established in place following completion of construction. Direct permanent impacts are those where the ground disturbance would be permanent; the biological resources would be replaced by project elements. Compensatory mitigation for habitat loss resulting from the project was identified in the Draft IS/MND (mitigation measures BIO-4, BIO-5, and BIO-11). The City of San Diego and/or the City of Santee would be responsible for maintenance of the proposed project. Moreover, mitigation measure BIO-6 would require that native vegetation be trimmed to the ground surface rather than uprooted whenever feasible.

C-12 As discussed in Section 7.17(f) of the Draft IS/MND, some users of the proposed project may have trash to dispose of while using the facility (e.g., food wrappers, beverage bottles), but major quantities of unabated trash would not be generated. Trash receptacles are currently provided along the existing trails within Mast Park West, which are maintained by the City of Santee. In addition, trash and litter are already present through the project area. The maintenance of the project, including trash management, would be provided by the City of Santee and/or City of San Diego as the agencies that would be ultimately responsible for maintenance and operation of the proposed project following completion of construction. SANDAG also anticipates that the specific aspects of project-related trash management would be addressed during the project permitting process with CDFW and other resource agencies.

With regard to illegal dumping, there is no analysis or evidence supporting CDFW's comment that a multi-use path for people to walk and bike would increase the practice of illegal dumping on trails that are already open to the public. This assertion is speculative and CEQA does not require evaluation of such speculative effects pursuant to CEQA Guidelines Section 15145.

C-13

Consistency with the City of San Diego MSCP

The proposed project includes impacts within the City of San Diego's MHPA, including impacts to City of San Diego wetlands pursuant to the Environmentally Sensitive Lands regulations. The draft MND should discuss how the proposed project is a compatible use within MHPA given that the project is not a passive trail (passive trails may be allowed within the MHPA) but rather serves as both a transportation route and a recreational facility. "One of the goals of the Regional Bike Plan is to significantly increase the number of people who bike and the frequency of the bicycle trips for all purposes (e.g., not just for recreation but also everyday trips)." (SANDAG, 2017; p. 5.) Furthermore, the goal of the proposed project aims to reduce greenhouse gas emissions through a reduction of vehicular trips "by increasing the number and frequency of all trips completed by bike, Regional Bike projects like the proposed project help the San Diego region meet climate change goals to reduce greenhouse gas (GHG) emissions from passenger vehicles." (*Ibid.*) The proposed project's role in the broader goal underscores the increase in volume of trips the proposed trail is intended to receive. For this reason, the trail potentially poses a significant, long-term impact beyond the mitigation area and sensitive species for which the Department holds an easement.

C-14

Protective Screening

As discussed during a site visit with SANDAG staff and the Department (February 9, 2017), netting (e.g., fence fabric), particularly adjacent to vegetation, poses a risk to wildlife (e.g., birds) from entrapment and could result in take (FGC § 86). "In some areas along the golf course where the proposed project would be in close proximity to the playing field area, protective fencing would be installed along short sections on the north side (golf course side) of the project to protect path users from getting hit by errant golf balls. The fencing would be up to 10 feet tall and could be constructed from a variety of materials, such as wood framed, welded wire mesh, or chain link." (SANDAG, 2017; p. 9.) The Department recommends native vegetative screening be used to minimize risks to wildlife and maintain a more natural aesthetic. Given that the least Bell's vireo are known to occupy the proposed project site, the placement of any structure which would directly or indirectly result in unauthorized take of least Bell's vireo is prohibited unless otherwise authorized. As previously recommended during the site visit, native trees or other suitable screening materials should be utilized to ensure that no take of vireo or other avian species occurs.

C-15

Fill within the San Diego River

The Department has regulatory authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of any river, stream, or lake or use material from a river, stream, or lake. For any such activities, the project applicant (or "entity") must provide written notification to the Department pursuant to section 1600 *et seq.* of the FGC. Based on this notification and other information, the Department determines whether a Lake and Streambed Alteration Agreement (LSA) with the applicant is required prior to conducting the proposed activities. Our issuance of a LSA for a project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. As a Responsible Agency under CEQA, the Department may consider SANDAG's MND for the project. To minimize additional requirements by the Department pursuant to section 1600 *et seq.* and/or under CEQA, the document should fully

C-13 Sections 7.4(e) and 7.4(f) in the Draft IS/MND provide a detailed analysis explaining that the proposed project would not conflict with the City of San Diego Environmentally Sensitive Lands regulations or the provisions, policies, management directives, or land use adjacency guidelines contained the City of San Diego's MSCP Subarea Plan. The analysis explains that the proposed project would not adversely affect the functions and values of the biological resources within the MHPA. CDFW also asserts that the proposed project would have significant long-term impacts to sensitive species because the proposed project would encourage people to ride bikes instead of drive, but no evidence is presented to support this claim of additional people riding bikes having adverse impacts on sensitive species or habitats. Please see the responses to comments C-2 through C-22 and Section 7.4 of the IS/MND explaining that the proposed project would not result in any significant and unavoidable biological resources effects.

C-14 As stated in Section 7.1(a) and Section 7.1(c) of the Draft IS/MND, trees are proposed to provide visual screening of the safety fencing. Section 7.4(d) explains why the safety fencing would not interfere substantially with the movement of any migratory species. The project does not propose netting. CDFW asserts that "netting" could result in "entrapment" and "unauthorized take" of birds and least Bell's vireo but does not provide any facts or evidence demonstrating that the type of safety fencing described in the Draft IS/MND would result in significant impacts to least Bell's vireo or other avian species.

C-15 Section 4.0 and Section 7.4(c) of the Final IS/MND identifies that a Streambed Alteration Agreement pursuant to Fish and Game Code Section 1602 from CDFW would be required for the project. SANDAG understands that CDFW is a Responsible Agency under CEQA and may elect to rely on the Final IS/MND to comply with CEQA for the Streambed Alteration Agreement. Project impacts to potential CDFW-jurisdictional areas and compensatory mitigation to avoid or reduce impacts to below a level of significance are identified in Section 7.4(c) of the Final IS/MND and the MMRP (Appendix M).

C-15 cont. identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA.[1]

C-16 To minimize fill within the San Diego River, the proposed project should consider an alternative that spans the San Diego River. Should alternatives to span the San Diego River prove infeasible, designs minimizing the overall footprint and facilitating the river's flow should be analyzed. Furthermore, project appurtenances including proposed retaining walls or other permanent structures, should not impede the river's flow. According to the MND "[s]several retaining walls up to approximately seven feet high would be constructed in certain locations along the north side of the project alignment within the golf course to reduce the proposed project's encroachment into the existing golf course. Additional retaining walls may be constructed in conjunction with the options for the West Hills Parkway connection." (SANDAG, 2017; p. 5.) The MND should analyze the full breadth of potential impacts to the San Diego River, including retaining walls.

C-17 While the draft MND identifies slope protection, the need to place permanent fill within the San Diego River is not demonstrated in the document. As discussed during our February 9, 2017, field visit, slope protection and erosion control features should be implemented only as site conditions dictate. For example, during the site visit one erosional feature was found to be mechanical erosion of the slope from illegal pedestrian access to the river. This illegal access subsequently aggregated sheet flow, causing minor erosion of the existing trail. Events such as this example may be remedied by restoring adequate drainage patterns without necessitating slope protection or other permanent structures within the San Diego River.

Avian Nesting Season

C-18 The draft MND states that construction is estimated to take approximately 12 months (SANDAG, 2017; p. 5), but does not describe steps taken to minimize impacts to nesting birds including least Bell's vireo, southwestern willow flycatcher, Cooper's hawk or other sensitive species. The project proposes to impact a biological mitigation area that was created with the express purpose of preserving and maintaining habitat for biological resources, but the draft MND does not include specific mitigation measures to avoid construction during the nesting season. Construction during the nesting season should be completely avoided for any mitigation site.

Mitigation Measures

C-19 *BIO-3/BIO-10:* Mitigation Measure BIO-3 should be revised to require an effective revegetation plan. The Department advises that revegetation plans identify goals (e.g., reference sites) prior to project approval, incorporate measurable performance standards (intermediate and final performance standards) that meet or exceed pre-project conditions. Revegetation plans should include peer review and coordination.

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1 A notification package for a LSA may be obtained by accessing the Department's web site at www.wildlife.ca.gov/habcon/1600.

C-16 The proposed project alignment would be constructed primarily along the existing alignment of existing trails within Mast Park West and along an existing informal trail along the existing berm adjacent to the San Diego River and adjacent to the golf course in order to minimize fill within the San Diego River. The proposed project does not impede the river's flow. Constructing the project on a structure that would not utilize the berm in order to not constrain the flow of the river would most likely need to be adjacent to the existing berm which would either be within the golf course, greatly affecting their operations, or south of the berm in the river channel with larger environmental effects. Under the terms of its lease with the City of San Diego, the golf course owners are allowed to maintain the berm in its existing condition, so it would remain in either situation. Project effects on the hydrologic conditions of the San Diego River were analyzed as part of the Hydrology Study prepared for the project (Appendix J), which accounted for all proposed project features including retaining walls. The hydrology analysis, summarized in Section 7.9 of the Final IS/MND, concludes there would be no significant peak flow increase generated by the project. The proposed project would increase the 100-year on site storm flow within the localized basins within the golf course by approximately 4.74 cfs and by approximately 0.38 cfs east of the golf course within Mast Park West. This change is considered a negligible increase compared to the overall flowrate for the San Diego River rate of approximately 38,000 cfs and would not adversely affect the project area or downstream areas.

C-17 As discussed in Section 7.6(b) of the Draft IS/MND, portions of the proposed project would be located on the existing berm adjacent to the golf course, and some areas along the existing berm have been subject to erosion. In order to safely accommodate the proposed Class I bike path, the project would reinforce and widen the berm in order to stabilize it. In only the minimum areas where it is necessary based on site conditions, slope protection would be installed on the south side of the berm to provide erosion control. The specific locations where this is proposed were identified on Figures 3a and 3b in the Draft IS/MND, and are based on existing site conditions where erosion is evident, as well as professional engineering judgement on the areas in which slope protection is needed to prevent further erosion that could undermine the stability of the proposed project. The proposed slope protection areas

C-17 cont. within resource agency jurisdiction would be further discussed with the resource agencies including CDFW during project permitting.

C-18 This comment makes assertions about the Draft IS/MND that are not true. Sections 7.4(a) and 7.4(d) of the Draft IS/MND adequately analyzed potential impacts to nesting birds, including the Cooper's hawk, least Bell's vireo, white-tailed kite, yellow-breasted chat, yellow warbler, and other nesting birds protected by the Migratory Bird Treaty Act. Mitigation measures BIO-1, BIO-3, and BIO-12 identified in the Draft IS/MND and MMRP (Appendix M) are proposed by SANDAG that include detailed steps to avoid impacts to nesting birds during project construction, including avoidance of construction during the nesting seasons for the aforementioned nesting bird species and other species protected by the Migratory Bird Treaty Act.

C-19 In the Draft IS/MND, SANDAG identified mitigation measure BIO-10, which requires revegetation with native species for all temporary disturbance within sensitive habitat. In response to this comment, SANDAG has made minor revisions to the language of mitigation measure BIO-10 in the Final IS/MND to clarify that the revegetation requirements of BIO-10 shall be documented in a revegetation plan as shown below:

BIO-10: SANDAG shall prepare a revegetation plan showing how all areas of temporary disturbance within sensitive habitat shall be revegetated with appropriate native species. Appropriate species include those that are (1) native, and (2) characteristic of the impacted type of vegetation community (e.g. southern riparian forest and southern willow scrub would be revegetated with willows and other native riparian vegetation; mule fat scrub would be revegetated with mule fat and other species associated with this community; freshwater marsh would be revegetated with cattail and/or bulrush or other native marsh species; buckwheat and baccharis scrub would be revegetated with coastal sage scrub-associated species; and non-native grassland would be revegetated with native grasses and forbs). The goal of the revegetation plan shall be to meet or exceed pre-project conditions.

C-20 The proposed project would impact non-native grassland (NNG). NNG provides regionally important foraging habitat for raptors by supporting raptor prey species. Primarily due to development, raptor foraging areas are rapidly disappearing throughout San Diego County. Cumulatively, raptor foraging habitat loss may be significant, and impacts to this resource warrant mitigation. Therefore, the Department recommends that any project-related impacts to habitat designated as or potentially functioning as non-native grassland be mitigated.

C-21 *BIO-4, BIO-5, Table 4, Table 5, and Table 6:* While the draft MND states that "…mitigation ratios presented below are subject to approval by the resources agencies" (SANDAG, 2017; p. 3.7) the proposed mitigation ratios strongly emulate the City of San Diego's NCCP ratios. The City of San Diego negotiated their SAP mitigation ratios based on their contributions to the MHPA (preserve) and a comprehensive development and mitigation strategy. The draft MND should not assume that the City of San Diego's mitigation ratios would be sufficient mitigation for the proposed project.

C-22 *BIO-8:* A definition for a qualified biologist should be included as a component of mitigation measure BIO-8. Mitigation measure BIO-12 defines a qualified biologist as having "…at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological surveys, including for nesting surveys" (SANDAG, 2017; p.45) could be adapted for use in mitigation BIO-8. It should be noted that for mitigation measures BIO-8 and BIO-12, the Department and U.S. Fish and Wildlife Service has distinct qualifications for surveying for CESA- and ESA-listed species.

C-23 We appreciate the opportunity to comment on the referenced draft MND. The Department requests an opportunity to review and comment on any response that SANDAG has to our comments and to receive notification of the forthcoming hearing date for the project (CEQA Guidelines; §15073(e)). Questions regarding this letter and further coordination on these issues should be directed to Eric Weiss at (858) 467-4289 or eric.weiss@wildlife.ca.gov.

Sincerely,

Gail K. Sevrens
Environmental Program Manager

ec: Scott Morgan (State Clearinghouse)
Patrick Gower, U.S. Fish and Wildlife Service, Carlsbad

REFERENCES

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C-20 As discussed in Section 7.4(b) of the Final IS/MND, the project would result in direct permanent impacts to approximately 0.01 acre and direct temporary impacts to approximately 0.05 acre of non-native grassland (see Table 3 on page 36) at the east end of the project adjacent to the existing Carlton Hills Boulevard bridge. Temporary impacts to 0.05 acre of non-native grassland would be revegetated with native grasses and fobs. Because the non-native grassland within the biological study area occurs in small, scattered and isolated patches that do not provide regionally important foraging habitat for raptors, the permanent loss of 0.01 acre of non-native grassland as a result of the proposed project would not have a significant impact to raptor foraging habitat. Therefore, no mitigation is required for the permanent loss of 0.01 acre of non-native grassland.

C-21 The Draft IS/MND does not assume that the City of San Diego's mitigation ratios would be sufficient mitigation for the proposed project as asserted by this comment; it identifies these mitigation ratios as the minimum needed to offset the project's impacts. As CDFW notes in its comment, SANDAG expressly acknowledged in the Draft IS/MND that mitigation ratios identified therein are subject to approval by the resource agencies.

C-22 SANDAG agrees with this comment and has revised mitigation measure BIO-8 as follows to include CDFW's recommended definition of a qualified biologist:

BIO-8: A qualified project biologist shall be responsible for overseeing compliance with all laws, regulations, permit conditions, mitigation measures, and any other biological resources requirements during project construction. Prior to the start of construction, a qualified biologist shall conduct environmental awareness training for all construction personnel. Topics to be included in the training include, but are not limited to, the construction limits, sensitive habitats, features, plants, and animal species to avoid, mitigation measure and/or permit condition requirements, seasonal or other time-related restrictions on construction, and measures related to erosion control and spill prevention. The qualified biologist shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of field experience.

C-23 In accordance with this request, SANDAG has provided CDFW with the Final IS/MND, including the responses to comments and notification of the meeting during which the SANDAG Transportation Committee will consider whether to adopt the Final IS/MND.

CITY OF SANTEE

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April 13, 2017

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SUBJECT: Mitigated Negative Declaration (MND) for the San Diego River Trail: Carlton Oaks Golf Course Segment

Dear Mr. Martin:

D-1 The City of Santee submits this comment letter regarding the draft Mitigated Negative Declaration in connection with the construction of an approximate two-mile long segment of the planned San Diego River Trail that would cross the jurisdictional boundary of the cities of San Diego and Santee through the Carlton Oaks golf course. The project proposes the reconstruction of the berm that runs along the north side of the San Diego River, and to utilize an existing trail through a park in Santee to support a multi-purpose trail for public use. As proposed, the trail would be 10 feet in width, consisting of a paved surface, with 2-foot wide pervious shoulders for a combined width of 14 feet. Lighting is proposed.

D-2 Three alternative designs are proposed for the connection of the trail to West Hills Parkway, only one of which suggests that a new traffic signal would be installed and a crosswalk painted on West Hills Parkway to direct users to the other side. From there cyclists would ride south within an existing bike lane. The other two designs propose connections near the existing intersection. Understandably the MND concludes that the project would improve the performance of the circulation system and contribute to reduced vehicular miles traveled by providing an alternative to vehicle commuting. At the same time, the project must not worsen congestion already experienced on the city's local streets, nor adversely affect the quality of life of residents who live near the intersection.

D-3 The City of Santee participated in the development of the San Diego River Park Plan, and supports the overarching goal of a trail from the headwaters to the coast. The Plan recognizes that the golf course site is a critical location for connecting the City of San Diego segment of the San Diego River Park with the City of Santee and upstream

D-1 This comment provides introductory statements and summarizes the project description contained in the Draft IS/MND. No further response is required.

D-2 The modifications to West Hills Parkway under each of the West Hills Parkway connection options, including installation of a new pedestrian crossing with a pedestrian-activated signal under the Switchback Ramp option, would not result in significant traffic impacts on West Hills Parkway or other local streets in the City of Santee as explained below. Under the Curvilinear and Linear Ramp options, pedestrians and bicyclists would cross West Hills Parkway at the existing intersection with Carlton Oaks Drive, using the same green phase as vehicular traffic on Carlton Oaks Drive, without requiring changes to the existing signal phasing at this intersection. Therefore, the Curvilinear Ramp and Linear Ramp options would not result in significant traffic impacts at this intersection.

The Switchback Ramp Option would include installation of a new pedestrian crossing of West Hills Parkway with a pedestrian-activated signal located approximately 600 feet south of the Carlton Oaks Drive intersection. This pedestrian-activated signal would produce a red light requiring vehicles to stop only when a pedestrian or bicyclist activates the signal to cross the street. Otherwise this signal would not require

D-2 cont. vehicles to stop when pedestrian and bicyclists are not present. Under this option this pedestrian-activated signal would be interconnected with the existing traffic signal at the Carlton Oaks Drive intersection and the timing of the two signals would be coordinated so that a pedestrian activated crossing would be timed with a red phase at Carlton Oaks Drive. Green phases would be timed to maintain continuous traffic through both signals. With this timing, vehicles traveling along West Hills Parkway would receive a red light at only one of these signals (not both) and for the same or similar amount of time as the existing red light phase at the Carlton Oaks Drive intersection. As a result, a new pedestrian crossing with a pedestrian-activated signal would not substantially increase vehicle delay for drivers along West Hills Parkway, meaning that the Switchback Ramp Option would not result in a significant traffic impact.

Moreover, the proposed project would not adversely affect the quality of life of residents who live near the intersection of West Hills Parkway and Carlton Oaks Drive or any other residents in the project area. As analyzed in detail in the Draft IS/MND, the proposed project would not result in any significant environmental impacts, including but not limited to no significant impacts related to lighting, air quality, noise, traffic, or community character. The project would, however, provide the City of Santee and its residents with a new multi-use bike and pedestrian path along the scenic San Diego River.

D-3 cont.

segments of the river park. The Plan suggests that redesigning the golf course "to be more sensitive to the hydrology of the river and creating habitat corridors are ways in which the golf course may accommodate multiple user groups."

As such, the MND must demonstrate that the new berm will not increase the potential for flooding nearby neighborhoods, that project implementation will not prejudice the city's efforts to develop and implement a Multiple Species Conservation Plan, that changes to West Hills Parkway will not worsen traffic conditions nor negatively affect our adjacent residents, and not visually compromise the natural setting through which the bike route is proposed.

D-4

Visual Changes

Noted on page 21 of the MND, "The introduction of a hard surface trail where a soft surface trail currently exists would not create a notable visual change." The City of Santee supports the concept of a consistent visual aspect, especially as integrated into the system of decomposed granite trails that currently exist. It is requested that SANDAG confirm the use of colored concrete for the hard trail system that is consistent with the color tones of the existing decomposed granite in the area. Additionally, the City proposes a brushed treated surface to more closely match a sand finish to further limit visual change to existing natural conditions. This would also allow for greater safety on the trail because where decomposed granite or sand meet hard surfaces, these areas tend to become slick for the biking public. A textured surface would reduce that potential.

D-5

Lighting

While the MND addresses a lighting design (pages 13, and 23) several citizens and City Councilmembers have expressed concern that the lighting improve public safety without creating adverse effects on the wildlife or human habitats. As stated in the MND, the final lighting design will be done in consultation with the resource agencies. The City requests that city staff be consulted through this process as well to better respond to citizen comments and concerns.

D-6

Hydrology

The Hydrology Study identifies that a portion of the project will be constructed on the existing berm within and adjacent to the Carlton Hills Golf Course. This berm was constructed in 1997, and maintained within the defined 100-year floodways of the San Diego River and Forester Creek. The berm was constructed as a levee to channelize the San Diego River away from where it would naturally flow. The levee is designed to provide protection to the golf course from 5 to 10 year storm events and in the event of a major storm, the levee is designed to give way and allow normal high flows to pass unrestricted across the golf course. Historically the levee has breached under various levels of storms.

D-3 This comment notes the City's support for the San Diego River Park Plan, refers to redesigning the existing golf course, and raises flooding, the City's unadopted Multiple Species Conservation Plan, traffic conditions, and visual resources as environmental issues that should be addressed in the Draft IS/MND. Responses to specific issues associated with these topics are provided in responses to comments D-2 and D-4 through D-25.

D-4 SANDAG appreciates this comment, and proposes that SANDAG and the City of Santee work together during final design to select color tones and surface textures that meet the needs of the City of Santee, resource agencies, the objectives of the regional bike program, and the project budget.

D-5 SANDAG included lighting in the proposed project in consultation with City of Santee staff. As stated in Section 2.0 of the Final IS/MND (page 13), lighting may be provided in select locations along the proposed project and would be shielded and directional to prevent spillover into adjacent areas, including sensitive habitat within the San Diego River and nearby residential properties. Section 7.1 of the Draft IS/MND demonstrates that the proposed project lighting would not generate a substantial amount of light that would adversely affect nighttime views in the project area. Section 7.4 of the Draft IS/MND demonstrates that the proposed project lighting would not have a substantial adverse effect on any sensitive species or habitats or other biological resources. As requested, SANDAG will continue to coordinate with City of Santee staff in regards to the specifics of project lighting and lighting design.

D-6 Contrary to the assertions in this comment, Section 7.9(c) and (d) of the Draft IS/MND does include an analysis of the proposed project's effects on the hydrology of the project area, and the analysis does take into account all aspects of the proposed design of the project, including the proposal to expand and reinforce the existing berm in order to support the multi-use path and the placement of approximately 10,000 cubic

D-6 cont. The project MND has not identified the project scope or mitigation measures as to how the project will address the impacts of a permanent levee and additional fill within the floodways of the San Diego River and Forester Creek. Also, the project does not indicate how the project scope and permitting will meet the City of Santee's Municipal code requirements, specifically Flood Damage Prevention (Chapter 15.52), Drainage and Watercourses (Chapter 15.54), and Excavation and Grading (Chapter 15.58).

D-7 Golf Course Segment – Project scope identifies that the existing berm will be improved by expanding, rebuilding, and/or reinforcing areas to support the proposed bike path and slope protection or similar measures to control erosion. This is counter to the nature of the existing levee that was built as a measure for minor storm protection. This permanent project element will need to be analyzed within the project hydraulic study/HEC/RAS analyses to determine the effects on the San Diego River and Forester Creek floodways. The study will need to show the location of the proposed permanent structure in the existing and proposed cross sections (MND, page 9).

D-8 Retaining Walls –various retaining walls have been identified to be constructed as part of the trail. The wall locations will need to be analyzed within the project hydraulic study to determine the effects on the San Diego River and Forester Creek floodways (MND, page 12).

D-9 Lighting – light fixtures and lighting facilities will need to be designed to meet the City's Flood Damage prevention requirements (MND, page 13).

D-10 Project description includes placement of 12,000 CY of fill within the Floodways. The fill and grading work will need to be analyzed within the project hydraulic study to determine the effects on the San Diego River and Forester Creek floodways (MND, page 13).

D-11 MND Section 7-9 Hydrology and Water Quality, Table items c. and d require disclosure on the alteration of drainage patterns and potential flooding. The "Less than Significant Impact" determination must be supported more clearly in the record. The hydrology analysis should identify that the project *will* alter the existing drainage pattern and stream course due to the reinforcing and expanding of the levee that is proposed as the scope of work of the project. (MND, pages 62 and 63). Table item h. - The levee is considered a structure and the appropriately analyzed to support the determination of "Less than Significant Impact." (MND, pages 62 and 63).

D-12 Items c. and d, found on page 65, should be revised to reflect the nature of the improvements to the levee.

D-13 The MND states that there are no dams immediately upstream of the project. This should be revised to reflect that the project is located downstream of three major dams and is also located within the limits of inundation related to dam failure of the Chet Harrit

D-6 cont. yards (CY) of fill (net) and the construction of retaining walls within the project area. The analysis is based on hydrologic modeling prepared for the proposed project and included in Appendix J to the Draft IS/MND.

The analysis concludes that the proposed project would not substantially alter the existing drainage pattern of the project area, including the San Diego River, in a manner that would result in substantial on- or off-site erosion, siltation, or flooding. Therefore, there is no need for any mitigation measures. This conclusion is based on the flood hydraulic analysis study that was prepared as part of the Hydrology Study, which evaluated the proposed project's impact on the base floodplain. The analysis included in the Draft IS/MND was based on 100-year peak discharge flow rates from the Federal Emergency Management Agency (FEMA) (36,000 to 38,000 cubic feet per second [cfs]), and the analysis in the Final IS/MND was updated to use the recommended discharge flow rates in the City of Santee Municipal Code, Table 15.52.070(A) based on comments from the City (48,000 to 50,000 cfs). Both the draft and final analysis are based on the proposed design of the project, including changes to the existing berm and the placement of fill and the construction of retaining walls within the project area. The hydraulic analysis shows that the proposed project would result in a maximum increase in the 100-year water surface elevations of less than one foot (0.5 feet). This negligible increase in the 100-year water surface elevation would not result in substantial on- or off-site erosion, siltation, or flooding that would adversely affect any people or property. This negligible increase in the 100-year water surface elevation would require FEMA approval as described in Section 4.0 of the Final IS/MND.

D-7 Please see response to comment D-6 explaining that all permanent project elements were analyzed in the hydraulic analysis included in the Draft IS/MND and the Hydrology Study in Appendix J. The improvements associated with the existing and proposed cross sections are included in the revised flood hydraulic analysis study.

D-8 Please see response to comment D-6 explaining that retaining walls were included in the proposed project's hydraulic analysis.

D-9 As stated in response D-5, SANDAG will coordinate with City of Santee staff in regards to the specifics of project lighting and lighting design.

D-10 Please see response to comment D-6 explaining that placement of approximately 10,000 CY of fill (net) within the floodplain was included in the proposed project's hydraulic analysis.

D-11 Sections 7.9(c) and 7.9(d) of the Draft IS/MND did disclose that there would be some change to existing drainage patterns as a result of the project, but accurately concludes that the project would not substantially alter the overall existing drainage patterns. The project effects of increasing impervious areas, including the potential for substantial flooding to occur. As discussed in the analysis, the proposed project would increase the 100-year on site storm flow within the localized basins within the golf course by approximately 4.74 cubic feet per second (cfs) and by approximately 0.38 cfs east of the golf course. This change is negligible compared to the overall 100-year flow rate for the San Diego River of approximately 48,000 to 50,000 cfs and would not adversely affect the project area or downstream areas associated with substantial erosion, siltation, and/or flooding.

Section 7.9(h) of the Draft IS/MND has been revised in the Final IS/MND in response to this comment to address proposed project elements within the 100-year floodway of the San Diego River, including retaining walls the reinforced and expanded berm, and bridge or other similar structure crossing Sycamore Creek within the golf course. The impact conclusion of less than significant would not change as these proposed structures would not impede or redirect flood flows.

D-12 Please see response to comment D-6 explaining that the analysis in Section 7.9(c) and (d) of the Draft IS/MND does reflect the nature of the proposed improvements to the existing berm.

D-13 cont. Dam, El Capitan Dam, and the San Vicente Dams. This hazard should be addressed within the project MND (MND, page 68).

D-14 The hydrology report prepared by Nasland Engineering references a study performed by BSI Consultants Inc., dated February 1990 and provides excerpts from the Study as Appendix C but the information provided has no relevance to the hydrology study provided.

D-15 The Hydraulics section beginning on page 5 identifies that small pipes will be installed for Basin D to carry the low flows associated with small storm events. These drainage improvements need to be addressed with the HEC-RAS study that accompanies the report. The HEC-RAS study does not identify how the flood waters will cross the berm nor utilize the proposed pipes.

D-16 Appendix D – the hydraulic analyses for San Diego River Trail Carlton Oaks Golf Course Segment, prepared by Chang Consultants dated January 27, 2017 requires that the engineer preparing the report to sign and seal the report. The report should specifically address the nature of the existing levee as discussed herein.

D-17 The report should also address the City of Santee's Flood Damage Prevention Ordinance (Section 15.52) that requires all development projects within areas of special flood hazards which increase flood heights and velocities to utilize a more conservative base flood discharge rate. The HEC-RAS study should be revised to include the analyses of the flow rates that are identified in Table 15.52.070(A) of the City's Municipal Code as part of the project MND.

D-18 The cross sections for the HEC-RAS study should clearly identify the existing levee and the proposed trail in the existing and proposed conditions. The study should include representative cross sections that clearly represent the levee and the proposed trail to reflect the water surface profile in the proximity of the trail since the trail height is greater than the water surface elevation as plotted.

Biology

D-19 The route proposes to utilize the existing Mast Park West trail, and to widen this trail to accommodate commuter and recreational users. The MND recognizes that a protective Conservation Easement affects Mast Park West which is held by the State of California. The MND concludes that implementation of biological mitigation measures will reduce impacts to a less than significant level. This conclusion is fully dependent on State concurrence and the processing of an easement amendment that would allow the widening of the "foot trail" to accommodate the objectives of the project.

D-20 The MND states that the city of Santee does not yet have its own adopted Multiple Species Conservation Plan (MSCP), and therefore a potential inconsistency with a non-

D-13 Section 7.9(i) of the Final IS/MND has been revised to disclose that the project site is located downstream of the dams identified in this comment (Chet Harritt Dam, El Capitan Dam, and San Vicente Dam) and within the dam inundation area associated with these three dams. As explained in the Final IS/MND, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving flooding as a result of failure of one of these dams.

D-14 The BSI Consultants Inc. Drainage Study dated February 1990 referenced in Appendix J of the Final IS/MND was included to document the source of calculated drainage flows which enter the project area from the north.

D-15 The HEC-RAS analysis contained within the hydraulic analysis included as part of Appendix J of the Final IS/MND analyzed project impacts associated with a 100-year flood event. The reference to small pipes for low flow discussed on page 5 of the Hydrology Study in Appendix J of the Final IS/MND has been revised to refer to an open bottom culvert. This drainage feature is for low-flow conveyance only and would be inundated during a 100-year storm event; therefore it is not addressed in the HEC-RAS analysis. Additional cross sections at the east end of the golf course have been added in the revised HEC-RAS study where the berm is more perpendicular to the river flow and indicate that the existing berm would be overtopped by a 100-year flood event. The project would widen, but not raise, the existing berm and therefore, the project would not alter the amount of flow that it would take to overtop the berm during a 100-year flood event.

D-16 The hydraulic analysis included as part of Appendix J of the Final IS/MND analyzed project impacts associated with a 100-year flood evaluates by evaluating the base 100-year flood and the proposed project's impact on the base floodplain. This analysis was updated utilizing the recommended discharge rates in the City of Santee Municipal Code and includes the existing berm and proposed fill within the floodway effectively widening the berm. As such, it considers the existing berm. The updated hydraulic analysis has been signed and stamped by the engineer who prepared the report.

D-17 Please see response to comment D-6 explaining that the hydraulic analysis was updated in response to this comment to utilize the base flood discharge rates included in City Municipal Code Table 15.52.070(A).

D-18 As requested, the hydraulic analysis included as part of Appendix J of the Final IS/MND has been updated to include additional cross sections at the east end of the golf course.

D-19 SANDAG is the CEQA lead agency for the proposed project, and as such SANDAG is solely responsible for making environmental impact determinations in the Final IS/MND; the conclusions of the Final IS/MND are not "fully dependent on State concurrence." This comment accurately describes the existing Mast Park West Conservation Easement held by CDFW, and SANDAG agrees that the proposed project would require an amendment to the existing Conservation Easement subject to the approval of CDFW and the City of Santee, and identified the need for an easement amendment in Section 4.0 of the Draft IS/MND. Section 4.0 also notes that the proposed project would require approved permits from CDFW prior to construction, including a Streambed Alteration Agreement. If the Final IS/MND is adopted, SANDAG would coordinate with CDFW and the City and other public agencies to obtain all needed approvals and permits required of the proposed project. Please also see response to comment C-2 explaining that the proposed project has been designed to utilize existing trails to avoid and minimize impacts to sensitive habitat and species within Mast Park West as much as is feasible.

D-20 cont. existent plan need not be analyzed. However, the Conservation Easement over Mast Park West establishes stewardship responsibilities and limits activities such that the 40-acre site is included in the city's draft MSCP preserve as a protected area. As such, the project must not prejudice the city's ability to adopt and implement its MSCP in the future. Financial endowment and long-term management by a land conservancy may be one way to successfully integrate the Project and habitat protection/conservation.

D-21 The city has planned trails along the sides of the San Diego River since adoption of its own "Santee's San Diego River Park Plan" in 1984. An alternative route that avoids Mast Park West's trail along the river could be evaluated, such as a connection through private property with frontage on Carlton Oaks Drive. However, the Mast Park West trail would remain open to pedestrians and cyclists and most likely be favored by recreational and commuter cyclists as being a more direct route.

Circulation

D-22 Among the three trail designs enabling the connection to West Hills Parkway is the "switchback" design which includes a traffic signal and crosswalk roughly 550 feet south of the existing signalized intersection at Carlton Oaks Drive and West Hills Parkway. The signal may have an effect on vehicle flow during the morning peak hours when these streets are highly congested. Before and if this option is selected, the MND should include additional analysis regarding this new traffic signal in conjunction with the anticipated increase in pedestrian and bicycle volumes and disclose any impacts to West Hills Parkway and Carlton Oaks Drive. An analysis of signal timing is needed for all three options.

D-23 The MND describes changes to West Hills Parkway and the intersection that raise questions about the possible need for additional public right-of-way to accommodate the wider sidewalk and to reposition traffic signal poles (pages 80 and 81). Specifically -

"Under the Curvilinear Ramp Option, the following roadway modifications would occur: Construction of a 15-foot-wide sidewalk to replace the existing five-foot-wide sidewalk on the east side of the roadway between where the ramp would connect to the existing sidewalk and the southeast corner of the West Hills Parkway/Carlton Oaks Drive intersection."

It is unclear as to whether the 15--foot wide sidewalk would require taking right- of- way at the corner property. This should be addressed.

D-24 "Relocation of the existing traffic signal at the southeast corner of the West Hills Parkway/Carlton Oaks Drive intersection."

It is unclear as to where this signal would be relocated, and how it may affect the north- and south-east corner properties. This should be addressed.

D-20 This comment is correct in stating that CEQA does not require an analysis of inconsistencies with unadopted plans. Regardless, SANDAG has been coordinating with the City in a multi-year process to develop the proposed project on behalf of the City of Santee, consistent with its adopted Bicycle Master Plan, and the City of Santee would ultimately be responsible the maintenance of the proposed project. As such, SANDAG proposes to continue this coordination during final design to develop a project that meets the City's needs as much as it feasibly can.

D-21 The proposed project was developed to provide a continuous Class I bikeway from the existing trail system in Mast Park to West Hills Parkway. The proposed project's alignment is consistent with river trail alignments identified in the San Diego River Conservancy's San Diego River Trail Gaps Analysis (2010), updated by SANDAG in 2014, the San Diego River Park Master Plan, and the City of Santee Bicycle Master Plan, all of which envisioned a river trail along the south edge of the Carlton Oaks Golf Course connecting directly to Mast Park. The proposed alignment was selected from numerous alternatives based on an evaluation of how well they met project goals, and on input from a public a public process that included participation by the City of Santee. In addition, the proposed project does not require the permanent acquisition of any private property.

The alternative route raised in this comment would be inconsistent with the City of Santee's own Bicycle Master Plan (among other local and regional plans) and inferior to the proposed project in several respects. For one, this alternative route would run right through the existing privately owned parking lot of an existing church; in order to implement this alternative route property would need to be permanently acquired from the private owner and used for the project. The property owner would permanently lose some of their existing parking spaces. Furthermore, diverting the trail through private property to Carlton Oaks Drive would not provide a continuous Class I bikeway as the route would have to utilize the existing on-road Class II bike lanes on Carlton Oaks Drive. It also would route the bikeway through the busy intersection of Carlton Oaks Drive and Carlton Hills Boulevard rather than providing a continuous Class I bikeway that would pass underneath Carlton Hills Boulevard into Mast Park. An alternative route through this private property to Carlton Oaks Drive was never raised as a potential alignment alternative in the 2015 alignment study.

D-22 Please see response to comment D-2 explaining that none of the proposed project's three West Hills Parkway connection options would result in significant traffic impacts.

D-23 The proposed roadway modifications under any of the West Hills Parkway connection options would occur within the existing public roadway right-of way and would not require acquisition of private property. Sections 2.0 (page 11) and 7.16(a) in the Final IS/MND have been revised to clarify that roadway modifications would not require right-of-way acquisition.

D-24 Due to the widened sidewalk, the traffic signal would be relocated within public right-of-way slightly to the southwest at the same southeast corner of the West Hills Parkway/Carlton Oaks Boulevard intersection. No acquisition of private property would be required for this modification.

D-25 The MND should disclose the status of electric bicycles (e-bikes) with respect to use of the bike route. It is the city's understanding that e-bikes are restricted to roadways used by motorized vehicles. The MND should also address the potential impact to nearby parking lots in public parks and commercial centers along the river which could become staging areas for commuting cyclists.

D-26 The City appreciates the opportunity to comment on the MND. If you have any questions, or need supporting information, you may reach me at (619) 258-4100, extension 167, or at mkush@cityofsanteeca.gov. For engineering questions, you may contact Scott Johnson and Minjie Mei at the same number.

Sincerely,

Melanie Kush

Melanie Kush
Director of Development Services

c. Marlene Best, City Manager
Bill Maertz, Community Services Director
Scott Johnson, Principal Civil Engineer
Minjie Mei, Principal Traffic Engineer

D-25 The project entails construction of a Class I bikeway, which is a shared-use path that is physically separated from motorized vehicular traffic. Under existing state law (AB 1096, 2015), electric bikes are segregated into three classes, two of which are permitted on Class I bikeways and one is prohibited. The law also permits local jurisdictions to restrict access of electric bikes by local ordinance. However, the legality and enforcement of the use of electric bikes on the proposed bike path is outside of the scope of CEQA.

The eastern end of the proposed project would terminate in Mast Park, where there are existing parking spaces for park users, including parking spaces for people interested in using the proposed project. There is also on-street public parking at the western end of the proposed project in the vicinity of West Hills Parkway and Carlton Oaks Drive. SANDAG understands that non-customer parking is already prohibited in commercial center parking lots in the vicinity of the proposed project.

It is not feasible to quantify the number and location of vehicle parking spaces that would be used by people to access the proposed project. Moreover, based on existing multi-use paths that SANDAG and other local jurisdictions have constructed elsewhere in the region, there is no evidence that construction of the proposed project would result in a major localized increase in vehicle parking demand that would exceed the available parking supply in the project area, and that the large increase in parking demand relative to supply would result in significant environmental effects, including but not limited to traffic, air quality, and noise impacts. SANDAG estimates that some users of the proposed project would park vehicles within the existing parking spaces in Mast Park, others might park in existing on-street public parking spaces, while others still would ride their bikes to access the proposed project. Since the proposed project would connect to existing trails within Mast Park, users are also anticipated to access the proposed project from this existing trail system.

D-26 These are concluding statements and no further response is required.

From: Courtney Mael [mailto:cmael@padre.org]
Sent: Friday, April 14, 2017 1:52 PM
To: Martin, Andrew
Cc: Gerry Canfield
Subject: San Diego River Trail - Carlton Oaks Golf Course Segment - Neg Dec.

Padre Dam has reviewed the proposed Initial Study / Mitigated Negative Declaration for the Carlton Oaks Golf Course Segment of the San Diego River Trail.

Please see our comments below.

E-1 1) Padre Dam has an easement on private property owned by Vista del Verde homeowners association. This location is mentioned several times in the report as a potential access point for the work. Although Padre Dam does have an easement in this location, the rights of that easement can't be transferred by Padre Dam. Our easement is not exclusive however and the project would need to obtain a construction easement directly from the Vista del Verde homeowners association (HOA). Padre Dam facilities would need to be protected in place if the easement use is granted by the HOA.

E-2 2) Padre Dam has facilities that cross the proposed trail in multiple locations. All Padre Dam facilities must be protected in place. Padre Dam will require review and sign off on all plans associated with the construction of the proposed trail. Some inspection may also be required during construction to ensure the protection of our facilities.

E-3 3) Padre Dam has multiple existing easements onsite and certain aspects of the trail such as the proposed fence may require an encroachment permit. Padre Dam will work with the project manager and engineer of work on any item requiring an encroachment permit.

E-4 4) The proposed trail is split between Padre Dam and City of San Diego. In order to serve construction water for the project from Padre Dam over the portions in the City of San Diego permission must be given from City of San Diego.

E-5 5) No trees shall be allowed with in the Padre Dam easements. Landscape plans must be reviewed and approved by Padre Dam.

Thank you for the opportunity to comment on the proposed Neg. Dec.

PADRE DAM Municipal Water District

Courtney Mael, PE
Engineering Manager
Development and Construction

- Desk (619) 258-4640
- Cell (858) 610-6235
- Fax (619) 449-9469
- Web www.padredam.org

All email to and from Padre Dam may be considered public information and may be disclosed upon request.

E-1 The Padre Dam easement is identified in the Draft IS/MND as a potential construction access route. If and when SANDAG decides to move forward with this route, it would first coordinate with the Vista del Verde homeowners association to inquire about the use of this easement and to obtain the necessary approvals (i.e., construction easement). SANDAG would also coordinate with Padre Dam regarding the protection in place of their facilities.

E-2 SANDAG will coordinate with Padre Dam as the project progresses to final design, as well as during construction, for plan reviews and site inspections.

E-3 SANDAG will coordinate with Padre Dam as the project progresses to final design regarding the potential need for an encroachment permit.

E-4 SANDAG will coordinate with Padre Dam and the City of San Diego Public Utilities Department prior to project construction regarding use of water for construction activities.

E-5 SANDAG will continue to coordinate with Padre Dam as the project progresses to final design for plan reviews, including landscape plans and tree location.



Preserve Wild Santee

April 8, 2017

Andrew Martin, Senior Regional Planner
SANDAG
401 B Street, Suite 800
San Diego, CA 92101
andrew.martin@sandag.org

RE: Draft MND for the SDRT - Carlton Oaks Golf Course Segment Project

Dear Mr. Martin,

F-1 The project as proposed has significant adverse impacts that are not considered in the Mitigated Negative Declaration. The project requires a full Environmental Impact Report that considers less damaging Alternatives.

F-2 The project should be scaled back to avoid significant adverse impacts as proposed in the "Decomposed Granite Alternative" portion of this letter.

F-3 The project proposes a 14' wide (10' paved) surface that is incompatible for the sensitive habitat adjacent to the San Diego River for the Carlton Oaks Segment. Thus, the trail contemplated becomes a non-motorized road with much greater impacts to endangered species, sensitive wildlife, aesthetics, trail use for wildlife observation purposes and serenity, increased potential for homeless occupation and associated adverse impacts. Amendment of the conservation easement for the "Mast Park West" portion to allow the project to be implemented is not appropriate. The project is also located within the MHPA where management directives state paving of trail is to be avoided.

F-4 None of the route is appropriate for installation of proposed "pedestrian-scaled" lighting. It is not sufficient to point lights away from San Diego River habitat, as the trail is an important portion of the habitat for nocturnal wildlife movement. The ongoing cumulative GHG impacts of lighting the trails are significant and have not been calculated or considered.

F-5 The construction itself is anticipated to last "approximately 12 months" and grade 12,000 cubic yards (10,000 cubic yards imported to the site). Importing fill would

F-1 The comment makes a general statement that the proposed project results in significant adverse impacts that are not identified in the Draft IS/MND and requires preparation of an Environmental Impact Report; however, no facts or other evidence is provided to support this assertion. The conclusions and supporting analysis contained in the Draft IS/MND that the proposed project would not result in significant environmental effects are supported by substantial evidence contained in the record. Project impacts are adequately analyzed and assessed based on established CEQA significance thresholds. Where potentially significant impacts are identified, feasible mitigation measures are identified that would avoid or reduce impacts to below a level of significance.

F-2 The comment states that the project should be modified to reflect the "Decomposed Granite Alternative" recommended in a later section of the letter in order to avoid significant environmental impacts of the proposed project. However, as explained in the response to comment F-1 and as demonstrated in the Draft IS/MND, the proposed project does not result in significant environmental impacts. This comment does not provide any support for the assertion that the proposed project has "significant adverse impacts." Responses to specific comments on the recommended Decomposed Granite Alternative are provided below in responses F-9 through F-11.

F-3 Please also see response to comment C-2 explaining that the proposed project has been designed to utilize existing trails to avoid and minimize impacts to sensitive habitat and species within Mast Park West as much

F-3 cont. as is feasible. The proposed project would also be located along an existing informal trail on top of an existing berm within the existing golf course in order to avoid impacts to sensitive habitat as much as feasible.

SANDAG has designed the proposed project in this way in order to avoid adverse impacts to habitat and sensitive species within Mast Park West to the greatest extent feasible. Where there are potential direct and indirect significant impacts to biological resources within Mast Park West (such as at low-flow crossings near Carlton Hills Boulevard where drainage improvements are proposed and noise levels during construction) and elsewhere in the project area, the Draft IS/MND identified 12 feasible mitigation measures (BIO-1 through BIO-12) that would avoid these impacts or substantially lessen them to below a level of significance. As documented in the Draft IS/MND, implementation of mitigation measures BIO-1 through BIO-12 would ensure there are no significant impacts to sensitive species and habitats within Mast Park West and throughout the project area.

Please see responses to comments C-3 through C-5 explaining that the proposed project would be consistent with the conservation values of the Conservation Easement and the City of San Diego MHPA and MSCP Subarea Plan. The proposed project would not result in significant aesthetic impacts as shown by the analysis in Section 7.1.

The proposed project would generally be constructed along the alignments of existing trails where previous disturbance has occurred. The project proposes to incorporate design treatments into the bike path surface such as use of earth-toned colors and textures during final design to further visually blend project elements with the existing visual environment. Additionally, the proposed project would help achieve the San Diego River Park Master Plan's vision for the San Diego River by implementing a portion of the San Diego River Pathway that would capitalize on the river's scenic qualities based on its juxtaposition and orientation to the adjacent river. As discussed in Section 7.1(a) of the Final IS/MND, implementation of the proposed project would provide people the opportunity to bike and walk along the San Diego River and experience its scenery.

With respect to homeless occupation, the proposed project would be constructed along the alignment of an existing trail where previous disturbance has occurred and existing evidence of homeless occupation is already present. The project would not provide access to previously inaccessible areas such that it would induce increased homeless occupation. The assertion that the project would increase the potential for homeless occupation is speculative and CEQA does not require evaluation of such speculative effects pursuant to CEQA Guidelines Section 15145.

F-3 cont. As discussed in Section 7.4(f) of the Final IS/MND, Public Access, Trails, and Recreation General Management Directive 3 recommends to, in general, avoid paving trails *unless management and monitoring evidence shows otherwise*. The project proposes to pave the bike path with a 10-foot-wide all-weather surface and two-foot-wide pervious shoulders to provide a Class I multi-use bike path, as well as a durable long term facility to protect against further erosion of the existing berm while minimizing environmental effects. An all-weather surface is essential to ensure the bike path can fulfill its transportation function for all users under most all weather conditions. This is especially important for people on bikes with different levels of abilities who ride a wide variety of bicycle types, including those with tires requiring a paved surface. A paved surface also prevents erosion, reducing the need for maintenance activity that would disrupt operation of the facility. A paved bike path in this location, where an existing informal dirt trail occurs, would not adversely affect the functions and values of the biological resources within the Multi-Habitat Planning Area (MHPA) as analyzed in detail in Section 7.4(f) of the Draft IS/MND. For example, the introduction of a paved bike path would not threaten the viability of the sensitive bird species observed within the MHPA and San Diego River corridor. Mitigation was identified in the Draft IS/MND and MMRP (Appendix M) to protect sensitive species observed within the project area during vegetation clearing and grading, as well from construction noise during the avian breeding season (mitigation measures BIO-1 and BIO-3). Mitigation is also identified for impacts to USFWS-designated critical habitat for least Bell's vireo and riparian habitat suitable for sensitive species breeding and/or roosting (mitigation measures BIO-2, BIO-4, and BIO-11). Thus, the proposed project would not conflict with the MSCP Subarea Plan management directive regarding paved trails.

F-4 As analyzed in Section 7.4(d) of the Draft IS/MND, proposed project lighting would not interfere substantially with wildlife movement. The San Diego River functions as a wildlife movement corridor, and by focusing lighting away from the corridor, the proposed project would not substantially interfere with wildlife movement within the corridor. Please see response to comment F-12 addressing the emission of greenhouse gases related to project lighting.

F-5 The project's importing of fill material was included in the Draft IS/MND analysis of GHG emissions. Section 7.7 of the Draft IS/MND concluded that the project would not result in significant GHG impacts. A minimal amount of GHG emissions would occur during project construction associated with activities such as off-road diesel equipment exhaust, and from worker and truck trips to and from the project site (including delivery of fill material to the construction site). Such emissions would be temporary and would not directly or indirectly have a significant impact on the environment and would not conflict with an applicable plan,

F-5 cont. exacerbate the project's GHG construction impacts. The trail project at this magnitude is transformed from a potential community asset with insignificant impacts into a community nightmare at a dollar cost of over $7.4 million. Scaling down the project, in addition to avoiding significant impacts described above, may allow avoidance of impacts at one or more of the construction access points contemplated.

F-6 The trail, regardless of design, will require maintenance and management. Who will manage and maintain the trail and how will the required activities be funded? Paving the trail could create a "shopping-cart freeway" leading to damages to fencing and unauthorized camps that could increase fire starts. Increased police and regulative enforcement will be required. The impact to police demand has not been considered.

F-7 It should be noted that San Diego Police Department is overburdened now as they have not responded to any of my calls for service in the East Elliott Community Plan Area over the past 20 years with the exception of a single 911 emergency call. What law enforcement agencies will patrol and serve this trail area?

F-8 Increased homeless camps or other illegal camps will also increase the habitat damage and require trash removal efforts to prevent significant adverse impacts to water quality. How will litter along the trail be cleaned-up and controlled?

F-9 **Decomposed Granite (DG) Alternative**

A Decomposed Granite (DG) Trail Alternative can meet most or all of the project objectives and avoid the significant adverse impacts discussed above. A DG Trail Alternative should be adopted instead that reduces the width of the trail by 2' to 4' feet along most of the route. The trail should be consistent in design with the other 8'-10' width DG trail and side trail within the City of Santee section of the San Diego River Park.

F-10 None of the river trail should be lighted and all of those funds should be directed toward modified access points along with funds saved by avoidance of paving.

F-11 <u>Modified Access:</u>

The cost savings associated with reducing the trail width and eliminating the pavement should be utilized to improve the access points. The access points should be modified to better link existing pedestrian and bicycle routes within Santee.

The parking lot that belongs to the Carlton Oaks Southern Baptist Church at 9225 Carlton Oaks Drive, Santee (just east of the Oaks Apartments) is an ideal access point because of the short distance to the bike routes on Carlton Oaks Drive and

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Preserve Wild Santee

F-5 cont. policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases. An air quality and GHG emissions impact assessment was prepared for the project and included as Appendix B to the Draft IS/MND. This analysis quantified construction GHG emissions and was considered in the determination of the GHG impact conclusions. Construction GHG emissions were calculated to total approximately 810 metric tons per year, which is not considered substantial or at a magnitude that would contribute to a significant GHG impact as was explained in the Draft IS/MND.

The comment also refers to "scaling down" the project in order to avoid significant impacts; however, no significant impacts would occur as a result of the project, as concluded in the Draft IS/MND.

F-6 Upon the completion of proposed project construction, maintenance and management of the proposed project would be the responsibility of the cities of Santee and/or San Diego. Upon completion of construction, SANDAG would execute operating and maintenance agreements with the cities of San Diego and Santee. The cities would also be responsible for the funding of the maintenance and management activities that they accept responsibility for through the operating and maintenance agreements.

Under existing conditions, shopping carts and other physical evidence of a homeless population in the project area have been observed, and fence damage is evident on the existing DG trail in Mast Park West.

While it may be true that it is easier to push a shopping cart on a trail paved with an all-weather surface than it is to push a shopping cart on a DG surface, it does not automatically follow that the project's proposal to provide an all-weather surface would lead to, "a 'shopping-cart freeway' that in turn would lead to damages to fencing and unauthorized camps that could increase fire starts." For one, the project area, which does not include an existing paved trail, already includes shopping carts and other physical evidence (including fence damage) demonstrating the presence of homeless population along the river in the project area. In addition, the proposed project would provide permanent fencing along both sides of the proposed bikeway in places where such fencing is not present, thus impeding the ability of homeless (and other persons) from entering the river corridor. The project's proposal to provide an all-weather surface for the bikeway would attract new bike and pedestrian users to the area and also facilitate safety patrols, which in turn could decrease the project area's existing desirability to homeless persons. The provision of lighting could also decrease the project area's existing desirability to homeless persons.

F-6 cont. The assertion that the project would increase the potential for homeless occupation and resulting vandalism and property damage is speculative, and CEQA does not require evaluation of such speculative effects pursuant to CEQA Guidelines Section 15145. Project impacts to police protection services were analyzed in Section 7.14(a)(ii) of the Draft IS/MND. The analysis concludes that the proposed project would not increase the demand for police protection services to such an extent that new or physically altered governmental facilities would be required in order to maintain acceptable service ratios, response times, and other police performance objectives. The impact on police protection services is less than significant.

F-7 Please see the response to comment F-6.

F-8 Please see the response to comment F-6 addressing issues related to the presence of homeless persons in the project area. Please see the response to comment C-12 addressing trash management.

F-9 This section of the San Diego River Trail is being developed as part of the regional bike network. As one of the major corridors in this network designated in the plan as a Class I bikeway facility, it is designed to the bikeway design standards in the California Highway Design Manual Chapter 1000, which calls for a ten foot wide all-weather paved surface with two 2-foot shoulders for a total width of 14 feet. A paved surface is essential to ensure the facility is accessible for all users under most normal weather conditions, including but not limited to people of all ages and abilities that are walking, biking, using wheelchairs, pushing strollers, and so on. An all-weather surface is also more efficient and economical to maintain.

Please also see response to comment C-2 explaining that the proposed project has been designed to utilize existing trails to avoid and minimize impacts to sensitive habitat and species within Mast Park West as much as is feasible.

F-10 This comment will be provided to the SANDAG Transportation Committee for its consideration before it considers whether to adopt the Final IS/MND. This comment does not raise any environmental issues that CEQA requires be addressed in the Final IS/MND.

F-11 Please see the response to comment D-21 explaining the reasons why the proposed project is superior to the alignment raised in this comment that would travel through the existing church parking lot, including the fact that the proposed project provides direct access to existing bike and pedestrian routes. This comment also asserts that an alignment that cuts through existing church property would avoid impacts to

Fanita Parkway that connect with Santee Lakes. Creating this access point could create a safe route with minimal exposure to motorized vehicles all the way to Santee Town Center, thus actually removing vehicle trips from local roads in Santee. The connection to the existing river trail is also nearly immediate. Thus a connection from the San Diego River Trail north along the Stow Trail through Sycamore Canyon could link to the Trans-County Trail at Goodan Ranch/Sycamore Canyon Open Space Preserve. This potential access point represents a significant regional and local circulation improvement for non-motorized travel with very little exposure to higher-speed motorized routes.

F-11 cont.



Potential access point to the San Diego River Trail from the COSB Church parking lot

Inquiry should be made with the church for an easement in exchange for improving the facilities entire parking lot. Since the lot is under-utilized during certain hours and days of the week, inquiry should be made to see if the Church would consider sale or lease of the western portion of the lot for joint use under specified hours. If the Church is agreeable, the shared lot would also relieve the overflow parking demand for Mast Park during the busiest times (Saturday morning).

The construction access and trail at the Calle Del Verde complex would thus be eliminated. This would eliminate the associated habitat, noise, and other construction related impacts at Calle Verde parking lot. Since the distance from Calle Del Verde parking lot to the existing river trail is much farther than the distance from the Church parking lot to the existing river trail, overall habitat / species impacts would be reduced by adopting the Church lot access point.

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Preserve Wild Santee

F-11 cont. Mast Park West, but that is not correct. The northern boundary of the Mast Park West Conservation Easement is immediately adjacent to the church property. As a result, it is not possible to access the church property – either permanently with a bikeway or temporarily for construction access – without going through Mast Park West. This comment also asserts that the church's parking lot would become parking for users of the commenter's recommended alignment, which would result in further loss of the church's private property and parking spaces in addition to property and parking spaces the church would lose in order to provide this commenter's recommended alignment. Moreover, the proposed project does not include any new parking spaces at Mast Park

F-11 cont.

Utilization of the church lot would also eliminate the need to disturb the existing trail west of the Mast Park/Carlton Hills Boulevard Bridge – offering another significant savings. This would eliminate the need to dredge under the bridge for construction equipment access.

Additional parking at the church lot would also moot the proposal by the City of Santee to convert river bottom parkland at Mast Park into parking lot. The significant adverse impacts of the parking lot proposal by the "Mast Park Improvement Project" can and should be avoided by considering both of these proposals together rather than segmenting them into separate projects that would inappropriately presume the potential significant adverse impacts are not related.

Other funds saved by a constructing a reduced width DG trail should go toward designing an access point on West Hills Parkway that avoids or reduces impacts to traffic on that road, which already suffers from gridlock during commute hours.

F-12

Cumulatively Significant Greenhouse Gas (GHG) Impacts

The MND estimates the project's GHG impacts to be 810 MTCO2E. Climate impacts are now so severe and beyond control that any GHG emission not offset is significant. The margin of error means that project emissions may exceed the arbitrary 900 MTCO2E significance threshold for GHGs. This project includes operations in Mast Park, yet artificially separates itself from the "Mast Park Improvement Project" for considering GHG and other significant impacts. The "Mast Park Improvement Project" estimates another 841 MTCO2E. Together, these projects in the same area are nearly double the arbitrary 900 MT threshold. The projects cannot be segmented. Avoidance and mitigation measures for unavoidable impacts are required.

Thank you for considering these comments.

Van K. Collinsworth
Geographer / Director, Preserve Wild Santee

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F-12 The comment asserts that any quantity of GHG emissions that is "not offset is significant," but this is not the standard for determining whether an impact is significant under CEQA. This comment further asserts that the proposed project's GHG emissions would exceed the "arbitrary 900 MT threshold" but the Draft IS/MND did not use 900 metric tons of GHG emissions as a threshold to determine whether the project's GHG emissions are significant. The Draft IS/MND used the following two criteria to determine whether the proposed project would result in significant GHG emissions impacts, based on Appendix G to the CEQA Guidelines:

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

Section 7.7 of the IS/MND analyzes the proposed project under these criteria and concludes that the project would not result in significant GHG impacts. This conclusion is based, in part, on estimated construction GHG emissions calculated for project construction activities, as reported in Appendix B to the Final IS/MND. As referenced in the comment, construction GHG emissions were calculated to total approximately 810 metric tons per year. However, this estimated amount was not compared to a 900 annual metric ton threshold as asserted by this comment.

This comment also asserts that the proposed project and the Mast Park Improvement Project "cannot be segmented," but in fact the proposed project and the City of Santee's Mast Park Improvement Project are completely independent of each other, and the utility of the proposed

F-12 cont. project is in no way dependent on the completion of the Mast Park Improvement Project, and vice versa. Therefore, it is not logical or accurate to consider these two separate projects as one single project under CEQA. No GHG mitigation measures are required because the proposed project would not result in significant GHG impacts. The proposed project is intended to support GHG reductions by promoting biking and walking as viable alternatives to driving.

Save Mission Trails.org

March 21, 2017

Andrew Martin
SANDAG
401 B Street, Suite 800
San Diego, CA 92101

RE: San Diego River Trail - Carlton Oaks Golf Course Segment Project Public Review
Draft Initial Study/Mitigated Negative Declaration

G-1 Save Mission Trails is a nonprofit organization dedicated to protecting the environment and quality of life for communities surrounding Mission Trails Regional Park. SMT members have reviewed the draft MND. We look forward to the completion of the River Trail and the ability to walk or bike from Mission Trails to Mast Park without needing to use the street.

G-2 SMT opposes the construction of a concrete or asphalt surface for the trail. A wide hard surface creates a racetrack in the middle of a natural habitat. It invites skateboarders, road cyclists (speed cyclists), and even homeless shopping carts. It is costly. It does not blend in with the surrounding environment.

G-3 SMT requests either the use of decomposed granite for the river trail surface, which will better fit into the environment than concrete, OR keeping it a natural, dirt trail - with improvements. The latter is better for joggers and birders and those who appreciate the natural aesthetic of the riparian valley.

G-4 Again, it is not a racetrack, and it is not an urban area. This segment borders a natural habitat with abundant riparian birdlife (including Least Bell's Vireos). This area is a favorite for people who are strolling, observing nature, and for leisurely bike riders. Therefore, a 10-foot wide concrete sidewalk is wrong for this location.

Thank you for your attention to our concerns.

Sincerely,
SMT Board Members

Stephen Houlahan Sandy Kuntz Mia Volker

Patricia Murphy Jeff Kahn

8824 Annandale Way
Santee, CA 92071

501(c)(3) Your donations are tax-deductible

savemissiontrails@gmail.com

G-1 This comment provides introductory statements and no further response is required.

G-2 The proposed project would be designed to blend into the existing setting with a paved surface colored match existing soil to the extent feasible. A paved all-weather surface is proposed in order to provide a stable surface under the normal variations in weather, as well as to reduce the maintenance burden for the cities of Santee and San Diego. It also facilitates patrolling for unwanted behavior. The project would not be located "in the middle of natural habitat" but along existing formal trails within Mast Park West and generally along an existing informal trail within an existing golf course. Please see the response to comment F-6 addressing the issues of homeless persons and shopping carts. This comment in opposition to concrete and asphalt surfaces for the proposed project will be forwarded to the SANDAG Transportation Committee for its consideration before it considers whether to adopt the Final IS/MND.

An all-weather paved surface, as opposed to decomposed granite, is proposed as part of the project to provide a safe, usable surface for all users under most all weather conditions. This is especially important for people on bikes who ride a wide variety of bicycle types, including those with tires requiring a paved surface. A paved surface also prevents erosion, reducing the need for maintenance activity.

G-3 This comment expressing preference for decomposed granite or "natural, dirt" surface in lieu of an all-weather surface will be forwarded to the SANDAG Transportation Committee for its consideration before it considers whether to adopt the Final IS/MND.

G-4 This comment summarizes Save Mission Trails' opposition to a paved all-weather surface. Responses to the environmental issues raised in the comment letter are provided in responses to comments G-2 and G-3.

April 13, 2017

Andrew Martin, Senior Regional Planner
SANDAG
401 "B" Street, Suite #800 *via email:* ***andrew.martin@sandag.org***
San Diego, CA 92101

Re: S.D. River Trail: Carlton Oaks Golf Course Segment Project

Dear Mr. Martin,

H-1 Having read through the 90-page plus MND document and reviewed a couple of the appendices, I would like to bring to your attention a number of areas of impact on the ***human*** aspects of this project – one that never seems to be referenced or addressed in any of the previous or most recent SANDAG studies. One would think that SANDAG does not even believe that the people living in close proximity to this project will be impacted at all since the focus and slant of every single study has been completely and primarily on the ecological (flora and fauna) impact.

H-2 On the following pages, I have listed some examples of the very direct impact and personal concerns of mine. I have referenced the MND pages and sections where applicable and have commented on statements that I feel are blatantly false and/or that contradict statements in other sections of the MND; *my thoughts/concerns and/or questions are italicized*. [Note: **WHP** = West Hills Parkway; **COD** = Carlton Oaks Drive]

1) Potential future improvements (deck) on my property – will I be impacted/restricted (per Santee building code) because (Option 3 – Linear Ramp) the sidewalk will now be right next to my property line? Will SANDAG have a surveyor locate & re-stake my property line on the slope? (This is the one that was buried when San Diego installed this newer section of the sidewalk and then poured fill dirt down the side of the slope some years back.) Will the widened 15' sidewalk extend north all the way to the WHP/COD corner or will it taper off; or, will the signal be moved and the lanes changed (this is unclear)? What about decreased property value? Access to/impact on the natural gas lines?

H-3 2) How will the view from my backyard looking out over this space change? **Who is responsible for any issues resulting from this project after it's completed – S.D., Santee, SANDAG?**

H-4 Section 7.10.b – conflicts w/land use plan, policy, regulation, general plan
What are the ***boundaries of S.D. River Park as noted in S.D. River Park Master Plan (City of SD 2013a)****?*

H-5 (Pg 80) "Measures of Effectiveness" for performance of circulation system – *this is per S.D.'s plans and manuals, ordinances, & policies; what about Santee's ordinances?*

H-6 (Pg 81) Level of Service (LOS) Metrics – *what are the referenced LOS A-D levels?*

H-7 3) **Mitigation Efforts**
(Pg 1) – this plan yields "no significant impacts"; *if so, what is the mitigation for Option 3 (Linear Ramp?)*
Project Background (Pg 5) – **significantly** increase # of bicycles and frequency of bike trips (every day)
App A (Pg 16) – **more people have access to this area/neighborhood, 24/7**

H-1 This comment raising the concerns with "human aspects" of the proposed project will be forwarded to the SANDAG Transportation Committee for its consideration before it considers whether to adopt the Final IS/MND; however, it does not raise any environmental issues that are required to be addressed in CEQA. In addition, SANDAG does consider the people living in close proximity to the proposed project. For example, SANDAG selected the project alignment along the San Diego River on the south side of the golf course as opposed to an alignment along the north side of the golf course near residences in response to input from those residents and other considerations. The project does not affect the private property of any residents in the project area, and it does not adversely affect local traffic conditions in the project area. The project proposes lighting that would be designed to avoid adverse effects to nearby residences. In addition, the proposed project would provide local residents of all ages and abilities with a multi-use path for walking and biking along the scenic San Diego River.

H-2 The proposed project would not be located on Ms. Lowry's property; it would be located within existing public right-of-way. Ms. Lowry's property is separated from the existing sidewalk along West Hills Parkway by an approximately 8-foot-tall solid block wall. The proposed project would avoid the existing wall.

Under the Linear Ramp option, the existing sidewalk would be widened and it would extend to the southeast corner of the West Hills Parkway/ Carlton Oaks Drive intersection, which is adjacent to Ms. Lowry's property. The existing traffic signal at this corner would be relocated slightly to the southwest, but it would remain on the sidewalk where it is today and it would not affect Ms. Lowry's property. The additional width needed for the widened sidewalk would located within the existing roadway, and the travel lanes on the east side of West Hills Parkway would be re-striped to accommodate the space needed for the widened sidewalk, but West Hills Parkway will still have the same number of lanes as it does today. The proposed project would avoid the existing natural gas lines.

H-3 Visual impacts were addressed in detail in Section 7.1 of the Draft IS/MND. As discussed, visual changes would include removal and replacement of up to approximately 100 trees along the existing berm. While this change would be noticeable, most of the existing trees within the golf course would remain, and most of the riparian vegetation within and along the San Diego River would not be disturbed. Replacement trees would be planted at a 1:1 ratio at various sizes to mimic the natural succession and variety of existing trees in the area. Other noticeable visual changes would include safety fencing along short sections of the bike in certain locations (anticipated near the fairways on holes 3, 4, 5, and 15). The fencing would up to 10 feet high and would incorporate colors and materials that match its surroundings and reduce its visibility. Trees and vegetation would also be planted where feasible in areas where the safety fencing is proposed to provide visual screening of the safety fencing. Retaining walls would be constructed in certain locations along the north side of bike path alignment and may be visible from certain vantage points, although given the distance across the golf course and intervening landscaping, these would not likely be highly visible from nearby residences. Retaining walls and other new project elements would also visible near the west end of the project site near and along West Hills Parkway, but are consistent with the existing character of the western end of the project, which features views of West Hills Parkway and State Route 52. Overall, as concluded in Section 7.1(c) of the Draft IS/MND, project elements would be visually consistent with the surrounding environment. The City of San Diego and/or the City of Santee would be responsible for maintaining and operating the proposed project upon completion of construction.

H-4 The boundaries of the San Diego River Park Master Plan encompass an approximately 17.5-mile-long section of the San Diego River corridor that extends 0.5 mile from each side of the river within the boundaries of the City of San Diego, from the Pacific Ocean in the community of Ocean Beach to the City of San Diego's limit at the City of Santee.

H-5 The analysis of West Hills Parkway contained in Section 7.10(a) of the Draft IS/MND used City of San Diego standards because this roadway and its intersection with Carlton Oaks Drive are located within the City of San Diego. The proposed project would not have a significant impact on the performance of the circulation system.

H-6 Level of service (LOS) is the professional industry standard term used to denote the different operating conditions that occur on a given roadway segment or intersection under various traffic volume loads and delay times. LOS is a qualitative measure used to describe a quantitative analysis taking into account factors such as roadway geometrics, signal phasing, speed, travel delay, freedom to maneuver, and safety. LOS

H-6 cont. provides an index to the operational qualities of a roadway segment or an intersection and is defined on a scale of A to F. LOS A facilities are operating below their capacity with free-flowing traffic conditions with no restrictions on maneuvering and little or no delays. LOS F facilities are operating above their capacity and have highly unstable, congested conditions with long delays.

H-7 The West Hills Parkway connection options including the Linear Ramp option only affect the area on the west end of the proposed project where it would connect to the existing sidewalk on West Hills Parkway; the Draft IS/MND analyzed a single alignment for the remainder of the proposed project. Thus, unless otherwise noted, impacts resulting from the project apply to any of the West Hills Parkway connection options. There are minor differences in acreages of habitat and other biological resource impacts and corresponding mitigation among the options, as indicated in Section 7.4 (see Tables 3 through 9). Proposed mitigation measures for the project were identified in the Draft IS/MND and in the Mitigation, Monitoring, and Reporting Program (Appendix M).

The use of the term “significantly” in the goal of the Regional Bike Plan does not imply the same meaning as it does within the context of CEQA. In the Regional Bike Plan, “significantly” is synonymous with “large” or “meaningful” increase in bike trips, and is completely unrelated to the use of “significant” to describe environmental impacts under CEQA.

The comment states that with project implementation, more people would have 24-hour access to the project area; however, access to the area is already provided by the existing trails within Mast Park West and the informal trail along the berm adjacent to the golf course that are actively used by people. The project area also features an active golf course, and an existing sidewalk already provides access along West Hills Parkway.

H-8 *Currently, there are maybe 20 people walking north or south on WHP on any given day. If the plan's goal is to" significantly increase the number of bicycles and bike trips every day", how can this be considered to have "no significant impact" on the neighborhood, traffic, and property values?*

H-9 (**Connection to WHP Options**, Pg 11) – currently, pedestrians can only cross from SE corner to NE corner to W corner
– Switchback Ramp: install traffic signal & continental crosswalks @ **each** corner of COD/WHP
– Curvilinear Ramp: construct 15'-wide sidewalk (replaces existing sidewalk) from connecting bike ramp to SE corner of WHS/COD intersection; install curb ramps & continental crosswalks @ each corner (*to move people/bikes to west (SB) side of WHP*); relocate traffic signal @ SE corner of COD

App A (Pg 12) Option 1: visible from roadway; requires reconfiguration of existing lanes
Options 2 & 3 – use existing bike lane

App A (Pg 15) Retaining Walls for option connectors – **WILL** create a noticeable contrast that will be visible to residents

Section 7.17.c – brow ditch near connection ramp and new storm water drains
How far along the sidewalk will this extend; what about any erosion to the slope?

H-10 4) **VIEW**
Lighting (Pg 13) – (Pg 18, Table Item d.) how can a "new" light source = a less than significant impact?
(any light in an otherwise completely dark void = a significant change, e.g., Cowles Mtn. night hikers)

H-11 (Pg 19) – project area is not highly visible from surrounding public vantage points – **FALSE**
Pedestrians walking along the sidewalk regularly like to look at the golf course view, wildlife, etc.

H-12 Item C (Pg 20) re: degradation of existing visual character of the site/its surroundings
(Pg 23) "Project would not create a new source of substantial light adversely affecting nighttime views" – **FALSE** *How can this be "less than significant"?* (Pg 24)

H-13 App A (Pg 12, paragraph 2) All 3 options require 2:1 manufactured slopes up to 20' tall
Is this measured from below ground elevation? "grading activities WOULD create a visible change in the project area"

H-14 App A (Pg 17) – "new lighting WILL be noticeable" (*"moderate" level of visual contrast? existing "character" of area would be maintained?*)
How can the character of the area be maintained when you go from a completely dark view at night to one that has multiple points of light spread over that space?

H-15 5) **CONSTRUCTION** (Pg 13) – Access to WHP site
Section 5.0 Table (Pg 15) – why is Transportation/Traffic considered a "less than significant" or "no impact" effect of the project
Is SANDAG aware of the tremendous traffic snarl and congestion during morning rush hour throughout the week on WHP?
(Pg 72) – **ACCESS ROUTES** for construction vehicles - max speed of 25mph, periodically, throughout the day; @ WHP site, ~ 200' from closest residential receptor

H-8 The Draft IS/MND analyzes the environmental impacts that would result from the construction and operation of the proposed project. The analysis demonstrates that people riding bikes would not result in adverse changes to the physical environment, including traffic impacts, which are analyzed in Section 7.16. The comment that more people riding on bikes in the project area will adversely affect "the neighborhood" and property values is outside the scope of an environmental analysis under CEQA, but this comment will be provided to the SANDAG Transportation Committee for its consideration before considering whether to adopt the Final IS/MND for the proposed project.

H-9 The first part of this comment lists roadway modifications associated with certain West Hills Parkway connection options, but does not raise any environmental issues with the Draft IS/MND for the proposed project.

The comment also states that proposed retaining walls would be visible, which is consistent with the analysis contained in Section 7.1(c) in the Draft IS/MND. Section 7.1(c) explains that while retaining walls would be visible, they would include design features, such as use of natural colors and textures visually similar to existing walls and features within the golf course to visually blend them in with the existing visual environment to reduce the potential visual contrast created by the introduction of walls along the trail edge. Therefore, the Draft IS/MND concluded that the proposed retaining walls would not substantially degrade the existing visual character of the project area.

The brow ditch would not be constructed along the sidewalk, but adjacent to portions of the west side of the ramp under each of the West Hills Parkway connection options. Manufactured slopes constructed in this area under any of the West Hills Parkway connection options would be revegetated for erosion control.

H-10 To evaluate the impacts of the proposed project lighting the Draft IS/MND examined whether the project would create a new source of substantial light that would adversely affect daytime or nighttime views. The proposed project lighting would be designed to illuminate the proposed multi-use path and to not allow light to spillover into adjacent areas. As discussed in Section 7.1(d), project lighting would comply with applicable lighting regulations, such as applicable sections of the San Diego Municipal Code and Santee Municipal Code, and it would follow the design guidelines contained in the San Diego River Park Master Plan. These regulations stipulate, among other things, the types, illumination, heights, and other features of outdoor lighting to minimize light spillover. Moreover, while the project site occurs along the San Diego River, it is also located adjacent to developed areas that include existing light sources, such as street lights, residential lighting, and lighting within commercial areas. There are existing street lights at

H-10 cont. the intersection of West Hills Parkway and Carlton Oaks Drive and along State Route 52. There are also trees located between the proposed project and existing residences that would partially or fully block views of the proposed project. Thus, the Draft IS/MND concluded that the addition of pedestrian-scale lighting placed periodically along select locations of the proposed project would not constitute a new source of substantial light that would adversely affect day or nighttime views in the area. The impact is less than significant.

H-11 The comment slightly misquotes text from the visual analysis contained in Section 7.1(a) of the Draft IS/MND. The visual analysis (page 19) states that the "*proposed project would occur in an area* that is not highly visible from surrounding public vantage points," while the comment misquotes the Draft IS/MND as saying that "*the project area* is not highly visible from surrounding public vantage points." SANDAG apologizes for any confusion caused by this statement. The focus of the visual analysis is on the visibility of the proposed project from surrounding public areas. So, while views of the *general project area* are provided from some public vantage points, such as from portions of West Hills Parkway, the *proposed project itself* would be located along south edge of the golf course and within the interior of Mast Park West where much of it would not be highly visible from surrounding public roadways or other public vantage points because of the intervening trees and vegetation and the sizable differences in elevation among the proposed project and public vantage points in the area.

H-12 Please see the response to comment H-10 explaining how the proposed project lighting was analyzed in the Draft IS/MND.

H-13 The height of the manufactured slopes accounts for the vertical difference in ground elevation between the toe (bottom) and the top of the slope. Consistent with the comment, Section 7.1(c) of the Draft IS/MND (page 23) acknowledged that grading activities associated with the West Hills Parkway connection options would create a visible change in the project area. The analysis further explains that while the change would be visible, it would not substantially degrade the existing visual character of the area because the project would incorporate color tones, materials, and vegetation that reflect the existing visual environment.

H-14 Please see the response to comment H-10 explaining how the proposed project lighting was analyzed in the Draft IS/MND.

H-15 The project would not generate traffic trips along surrounding local roadways that would exacerbate existing traffic conditions. As discussed in Section 7.16(a) of the Draft IS/MND, the proposed project would improve the performance of the circulation system by giving more people the option to bike or walk instead of drive. Please see response to comment D-2 explaining why adding a new pedestrian crossing with a pedestrian-activated signal under the Linear Ramp option would not result in significant traffic impacts.

The comment also includes information contained in Section 7.12(a) of the Draft IS/MND about the proximity of residences to identified construction access routes, but does not but does not raise any environmental issues with the analysis of the Final IS/MND.

H-16

6) **RETAINING WALLS** (Pg 22) proposed 1'-7' tall seen only by golfers – **FALSE**
How long for replacement trees & shrubs to grow to maturity to block view of bike trail from homes & sidewalk?

H-17

7) **NOISE** (Pg 71)
(Santee) no Sundays or holidays; no more than 8 hrs in a 24-hr period
(Pg 73) 65dBA @ property line of residential use
(S.D.) no Sundays or holidays; none allowed from 7P-7A
(Pg 72) less than 75dBA over 8- or 12-hr period

Section 7.12.d (Pg 74) "No substantial or periodic increase in ambient noise levels" – **FALSE**

H-18

8) **FIRE/POLICE SERVICES** (Pg 77) – *what is projected increase in calls for injured hikers/cyclists? Which city's emergency services will respond?*
Traffic control plan during construction – *keep access open for emergency vehicles, only?*

H-19

9) No **HAZARDS** (Pg 82) – **FALSE**
What about bikes exiting the bike path? Where does the access to the bike lane start? Will bikes be on the sidewalk all the way from the access point north to the COD intersection? Will there be guard rails on both sides of the "new" sidewalk?
Section 7.16.f (Pg 83) – no impact?
Does the separated path from the roadway have pedestrians and cyclists sharing the same space?

H-20

10) **RECREATION** – Section 7.15.a (Pg 78) – *any consideration for the substantial physical deterioration of existing neighborhood or property due to increased travel into area?*
Section 7.17.f (Pg 85) "solid waste disposal" – *what about trash/litter from bike path users; will trash cans be provided along the path?*

H-21

I understand that this project is moving forward no matter what. I am not against a hiking trail/bike path. I am, however, simply requesting some modicum of consideration for the significant impact to the human element as a result of this project. Namely, I would greatly appreciate a decision to go with either Option 1 or 2 for the bike path connection to West Hills Parkway. Option 3 (Linear Ramp), which connects the bike path right at the base of my property, would **significantly** change and **negatively impact** my lifestyle by negating the numerous reasons for purchasing my home on this specific site some 24 years ago.

With green space all around us, never in a million years did I ever imagine that there might be a trailhead at the base of my property near the golf course when all that I ever expected to look out and see was a nice, calm, soothing view of the golf course with its slightly rugged landscape and the various wildlife that inhabit this area. I would like to preserve my existing view and mitigate the impact on my family, pets, and property as much as is possible. Thus, I respectfully ask that you give serious consideration to my request to decide against Option 3 (Linear Ramp) as the bike path connection to West Hills Parkway.

Please feel free to contact me with any questions or for further discussion to address my outlined concerns.

Courteously,

Alexandria Lowry

Alexandria Lowry
(619) 250-3210 (cell)
4all_nei@cox.net

H-16 The comment asserts that the visual analysis contained in Section 7.1(c) concludes that proposed retaining walls would only be seen by golfers. However, the analysis explains that *most* of the retaining walls within the interior of the golf course would only be seen by golfers, particularly if trees and shrubs are used to screen the walls from more distant views from nearby residences, but does acknowledge that other retaining walls would be constructed along the north side of bike path alignment and may be visible from certain vantage points such as residences in the project area, although given the distance across the golf course and the presence of intervening trees and landscaping, these retaining walls would not likely be highly visible from nearby residences.

Trees would be planted along the bike path within the golf course at large, medium, and small sizes to mimic the natural succession and variety of existing trees in the area; it is anticipated that approximately 25 percent would be 24-inch boxes, approximately 50 percent would be 15 gallon containers, and approximately 25 percent would be 5 gallon containers. Given the mix of trees sizes, the time for them to reach maturity would vary.

H-17 The comment asserts that the impact conclusion of less than significant identified in Section 7.12(d) of the Draft IS/MND regarding a substantial periodic increase in ambient noise levels is "false," but does not provide specific details or supporting analysis to substantiate the statement. As discussed in Section 7.12(a), construction activities would temporarily elevate noise levels in the project vicinity, but construction noise would conform to applicable construction noise regulations per the City of Santee and City of San Diego. Therefore, impacts are appropriately determined to be less than significant.

H-18 The San Diego County Sheriff provides police protection services within the project area, and the Santee Fire Department provides fire and emergency services within the project area. The Draft IS/MND analyzed impacts to police, fire, and emergency services in Sections 7.14(a)(i) and (ii), which concluded that the proposed project would not increase the demand for police, fire, and emergency services to such an extent that new or physically altered governmental facilities would need to be constructed in order to maintain acceptable service ratios, response times, or other performance objectives. It would be speculative to try to quantify the increase in emergency calls that will occur because of this project so that information was not included in the Draft or Final IS/MND, consistent with the CEQA Guidelines.

As discussed in Section 7.14(a) in the Draft IS/MND (page 78), the traffic control plan to be implemented during project construction would provide for adequate emergency vehicle access along surrounding roadways. It would not *exclusively* provide access for only emergency vehicles, but would accommodate all vehicular traffic including emergency vehicles.

H-19 As discussed in Section 7.16(d) of the Draft IS/MND, a stop sign or similar measure would be installed where the proposed project meets West Hills Parkway to alert people using the bike path of possible cross traffic on the sidewalk and to yield to people on the West Hills Parkway sidewalk. The transition to the bike lane along the eastern side of West Hills Parkway would vary for each of the West Hills Parkway connection options. For the Switchback Ramp option, bike path users would enter the on street bike lane where the ramp would connect to the existing sidewalk. Under the Curvilinear Ramp and Linear Ramp options, bike path users would remain on the widened sidewalk to the West Hills Parkway/Carlton Oaks Drive intersection and then enter the bike lane within the roadway to the north or cross the roadway at this existing intersection to the bike lane on the other side of the road. A guardrail would be provided on the west side of the widened sidewalk (along the roadway), and a fence or similar safety barrier would be installed along the portion of the east side of the widened sidewalk where it is adjacent to a slope down to the golf course.

As concluded in Section 7.16(f) of the Final IS/MND, the project would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities and thus finds that no impact would occur. The widened sidewalk would be 15 feet wide in order to safely accommodate both pedestrians and bicyclists.

H-20 The potential for the proposed project to result in "substantial physical deterioration" of the environment, including the visual character of the project area, is considered throughout the IS/MND, which concludes that the proposed project would not result in any significant impacts to the environment with the implementation of mitigation measures.

Please see the response to comment C-12 addressing trash management.

H-21 The proposed project is not "moving forward no matter what." The SANDAG Transportation Committee will consider whether to adopt the Final IS/MND at its June 16, 2017, meeting. The other statements in this comment, including the commenter's opposition to the Linear Ramp option for connecting to West Hills Parkway, will be provided to the Transportation Committee before its meeting to consider whether to approve the Final IS/MND.

Appendix M
Mitigation Monitoring and Reporting Program

The California Environmental Quality Act (CEQA; California Public Resources Code §21081.6) requires public agencies to adopt a monitoring and reporting program for the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. In order to ensure implementation of the mitigation measures and design features identified in the Mitigated Negative Declaration (MND), SANDAG shall adopt a Mitigation Monitoring and Reporting Program (MMRP). This MMRP has been prepared in accordance with the proposed San Diego River Trail – Carlton Oaks Golf Course Segment, the environmental effects of which have been evaluated in an MND prepared in compliance with CEQA and the CEQA Guidelines.

This MMRP identifies the mitigation measures and design features that shall be implemented by SANDAG as the responsible party and the timing of implementation. SANDAG may delegate the reporting or monitoring responsibilities identified below to another entity that accepts the delegation (such as a construction contractor). However, until the mitigation measures and design features included in the MMRP have been completed, SANDAG remains responsible for ensuring that implementation occurs in accordance with the adopted program (CEQA Guidelines §15097[a]).

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources					
BIO-1 If feasible, no trimming, grubbing, or clearing of riparian trees or vegetation shall occur during the breeding season for the least Bell's vireo (March 15-September 15), yellow-breasted chat and yellow warbler (February 15-August 31), or raptors (January 15-July 15). If riparian tree and vegetation trimming, clearing, or grubbing cannot feasibly occur outside of these breeding seasons, then pre-construction nesting surveys, as described below, shall be conducted by a qualified biologist prior to initiating vegetation trimming, clearing, or grubbing activities. The vireo nesting survey shall consist of three surveys spaced seven to ten days apart, with the final survey occurring no more than three days prior to initiating trimming, clearing, or grubbing activities. If nesting vireos are detected during the pre-construction surveys on or within 500 feet of planned clearing or grubbing activities, then clearing or grubbing on or within 500 feet of the nesting vireos shall be postponed until a qualified biologist determines that the young have fledged or the nest is no longer active. The nesting survey for yellow-breasted chat, yellow warbler, and raptors shall consist of one pre-construction nesting survey conducted no more than seven days prior to the commencement of vegetation trimming, clearing, or grubbing to determine if active nests of these species are present in the affected areas. If nesting yellow-breasted chat, yellow warbler, or raptors are detected on or within 300 feet of the impact area during pre-construction surveys, construction on or within 300 feet of the nest shall be postponed until after the young have fledged or the nest is no longer active. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.	Prior to construction	SANDAG	☐	____	
BIO-2 Mitigation for direct permanent impacts to 0.52 acre of riparian habitat, which is located within USFWS critical habitat for least Bell's vireo, including 0.48 acre of southern riparian forest, 0.04 acre of southern willow scrub, and less than 0.01 acre of mule fat scrub, would be addressed through Section 7 consultation as part of the CWA 404 permitting process and the Fish and Game Code Section 2080 Incidental Taker Permit (if required). The results of the Section 7 consultation and conditions of the Incidental Take Permit (if required) would determine the need, if any, for special conditions or habitat mitigation beyond the mitigation identified for impacts to riparian habitat in BIO-4.	Prior to construction	SANDAG	☐	____	

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources (cont.)					
As described in BIO-4, direct permanent impacts to southern riparian forest and southern willow scrub would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following, as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/ re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.					
BIO-3 If feasible, operation of construction equipment (e.g. backhoes, loaders, bulldozers, excavators, skid steers, graders) shall not occur during the breeding seasons for the least Bell's vireo (March 15-September 15), yellow warbler and yellow-breasted chat (February 15-August 31), or nesting raptors (January 15-July 15). If it is not feasible to avoid operation of construction equipment during any of these breeding seasons then one pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to the start of construction to determine if active nests of these species are present within the areas potentially impacted by noise. The "noise impact area" is defined as up to 500 feet from the noise source for least Bell's vireo and up to 300 feet from the noise source for yellow warbler, yellow-breasted chat, and raptors. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-1. If it is determined at the completion of the pre-construction survey that active nests belonging to least Bell's vireo, yellow warbler, yellow-breasted chat, or raptors are absent from the noise impact area, construction shall be allowed to proceed. If the pre-construction survey determines the presence of active nests belonging to any of these sensitive species, then construction shall either: (1) be postponed within the noise impact area until a qualified biologist determines any nests are no longer active or until after the respective breeding season; or (2) not occur until a temporary noise barrier or berm is constructed at the edge of the construction limits and/or around the piece of equipment to ensure that noise levels within the noise impact area are reduced to below one-hour average of 60 dBA or ambient, whichever is greater. Decibel output will be confirmed by a qualified noise specialist and intermittent monitoring by a qualified biologist will be required to ensure that conditions have not changed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology,	Prior to construction	SANDAG	☐	____	

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources (cont.)					
ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds					
BIO-4 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/ re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank.*	Prior to construction	SANDAG	☐	____	
BIO-5 Direct temporary impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, or preservation. Temporarily impacted areas would be revegetated with a Diegan coastal sage scrub plant palette. Mitigation for direct permanent impacts to flat-topped buckwheat scrub and broom baccharis-dominated sage scrub would occur at a 1:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, preservation, or purchase of credits at an approved mitigation bank.*	Prior to construction	SANDAG	☐	____	
BIO-6 Whenever feasible, native vegetation shall be trimmed to the ground surface rather than uprooted.	During construction	SANDAG	☐	____	

*BIO-4, BIO-5, and BIO-11 would also mitigate impacts resulting from storm drain facilities to be implemented as part of the project as identified in Section 7.17, Utilities and Service Systems, of the IS/MND.

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources (cont.)					
BIO-7 The project landscape/erosion control plans shall not include invasive species (as listed in the California Invasive Plant Council (Cal-IPC) Invasive Plant Inventory [Cal-IPC 2006, or as updated]. Native plant species shall be used in all revegetation and landscaping areas outside of the existing golf course. Native or non-invasive ornamental plant species shall be used for landscaping and revegetation within the existing golf course.	Prior to construction/ During construction	SANDAG	☐	____	
BIO-8 A qualified project biologist shall be responsible for overseeing compliance with all laws, regulations, permit conditions, mitigation measures, and any other biological resources requirements during project construction. Prior to the start of construction, a qualified biologist shall conduct environmental awareness training for all construction personnel. Topics to be included in the training include, but are not limited to, the construction limits, sensitive habitats, features, plants, and animal species to avoid, mitigation measure and/or permit condition requirements, seasonal or other time-related restrictions on construction, and measures related to erosion control and spill prevention. The qualified biologist shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of field experience.	Prior to construction/ During construction	SANDAG	☐	____	
BIO-9 Sensitive vegetation communities, jurisdictional waters and wetlands, and other sensitive biological resources located outside of permanent and temporary impact areas shall be identified on the final construction plans as "environmentally sensitive areas" and protected with temporary fencing (e.g., orange snow fence). A qualified biologist shall monitor the installation of the temporary fencing and ensure it is installed prior to the start of construction. A qualified biologist shall regularly inspect the temporary fencing to ensure it remains in place throughout construction.	Prior to construction/ During construction	SANDAG	☐	____	

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources (cont.)					
BIO-10 SANDAG shall prepare a revegetation plan showing how all areas of temporary disturbance within sensitive habitat shall be revegetated with appropriate native species. Appropriate species include those that are (1) native, and (2) characteristic of the impacted type of vegetation community (e.g. southern riparian forest and southern willow scrub would be revegetated with willows and other native riparian vegetation; mule fat scrub would be revegetated with mule fat and other species associated with this community; freshwater marsh would be revegetated with cattail and/or bulrush or other native marsh species; buckwheat and baccharis scrub would be revegetated with coastal sage scrub-associated species; and non-native grassland would be revegetated with native grasses and forbs). The goal of the revegetation plan shall be to meet or exceed pre-project conditions.	Prior to construction/ During construction	SANDAG	☐	____	
BIO-11 Direct temporary impacts to southern riparian forest, southern willow scrub, mule fat scrub, and freshwater marsh would be mitigated on site at a 1:1 ratio through one or more of the following as determined through resource agency consultation: restoration, enhancement, preservation, and/or establishment/re-establishment. Direct temporary impacts to non-wetland WUS/CDFW streambed would occur through returning these areas to their pre-construction contours and conditions. Direct permanent impacts to southern riparian forest, southern willow scrub, and freshwater marsh would be mitigated at a 3:1 ratio and mule fat scrub would be mitigated at a 2:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/re-establishment with an establishment/re-establishment ratio of 1:1, or purchase of credits at an approved mitigation bank. Direct permanent impacts to non-wetland WUS/CDFW streambed would occur at a 1:1 ratio through one or more of the following as determined through resource agency consultation: on- and/or off-site restoration, enhancement, and/or establishment/ re-establishment.*	Prior to construction	SANDAG	☐	____	

*BIO-4, BIO-5, and BIO-11 would also mitigate impacts resulting from storm drain facilities to be implemented as part of the project as identified in Section 7.17, Utilities and Service Systems, of the IS/MND.

Design Feature or Mitigation Measure	Timing	Responsible Party	Completed	Initials	Notes (Optional)
Biological Resources (cont.)					
BIO-12 If feasible, no trimming, grubbing, or clearing of vegetation shall occur during the general avian breeding season (February 15-August 31). If vegetation trimming, grubbing, or clearing cannot feasibly occur outside of the general avian breeding season, then one pre-construction survey shall be conducted by a qualified biologist no more than seven days prior to the commencement of the vegetation trimming, grubbing to determine if active bird nests are present in the affected areas. The pre-construction survey can either be combined with or conducted separately from surveys conducted for Measure BIO-1. Should an active migratory bird nest be located, the project biologist would direct vegetation clearing away from the nest until a qualified biologist determines that the young have fledged or the nest has failed. If there are no nesting birds (includes nest building or other breeding/nesting behavior) within this area, trimming, clearing, and grubbing shall be allowed to proceed. The qualified biologist conducting the survey(s) shall have, at a minimum, a bachelor's degree in biology, ecology, zoology, or a related field of science, and at least two years of experience conducting biological field surveys, including surveys for nesting birds.	Prior to construction	SANDAG	☐	____	
Cultural Resources					
CUL-1 Prior to the start of construction, a qualified archaeologist shall conduct cultural resources sensitivity training for all construction personnel. The training shall cover the types of cultural resources that might be encountered and the procedures to follow if cultural resources are inadvertently discovered during construction. The training shall include, but not be limited to, a discussion on the importance of, and the legal basis for, the protection of significant archaeological resources. All personnel shall sign that they understand the material presented and be issued a hard hat sticker, or a similar method, to verify completion of training. In addition, a qualified archaeologist shall be retained on an on-call basis to respond to any unanticipated discoveries.	Prior to construction	SANDAG	☐	____	

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